KNOWLEDGE SOCIETY: INNOVATIONS IN LIBRARIANSHIP (ILAKSIL 2012)

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FOREWORD

It is a matter of immense satisfaction that the ILA is nearing to its 80th Year and has been making unstinted efforts to the Professional Development and all round progress of the Library and Information Profession in India. I am looking forward to a grand celebration as this national body of LIS professionals steps into the threshold of 80th Birthday next year as already the profession has completed a landmark of 100 years of Library Science Education in India in the year 2011.

The Indian Library Association (ILA) has been quite aware of the contemporary developments and the external influences it has been attracting since the last two decades in particular. The influence of Information Communication Technology on LIS Profession has taken to new strides of its progress and it is being challenged by the oft discussed emergence of Information Society and Knowledge Society. It is a matter of fruitful deliberations that the professional fraternity takes up from time to time and the professional bodies like ILA should provide for a platform for such discussion and it has been doing since its inception. At this juncture it is quite appropriate and good augury that ILA has decided on the theme of ***"KNOWLEDGE SOCIETY:INNOVATIONS IN LIBRARIANSHIP*** for the 57th National Conference to held at Mangalore, organised by the prestigious St. Agnes College, Mangalore from 23rd to 25th February 2012.

The theme of the Conference is well conceived under its FIVE Sub-themes and it is important to come out with some of the issues which still need crystallization at this juncture as the profession is on the cross roads of new developments and challenges. The learned authors and delegates attending this conference would deliberate with due concern on chalking out a new pathway for the professional progress and to resolve some of the important issues of its successful coexistence with other similar professions.

Dr. D. V. Singh
President, ILA

Preface

The theme of the 57th ILA National Conference **"Knowledge Society: Innovations in Librarianship"** has been quite appropriate and relevant and has been rightly conceived in the present context of fast changing library scenarios. The studies on the perspective changes brought out with the advent of knowledge society have been in focus by different areas and disciplines. The comprehensive study of knowledge society and its impact cannot be complete without its core content – that is information and knowledge. Some of the new parameters of study of 'Knowledge Society' are as enlisted below. The list projects the extent and vastness of studies on Knowledge Society, and the implications on Library and Information Science can also be some of them.

- *Networking and e-Governance*
- *Universal Access and Public Access to the Internet*
- *Accessibility to information; RTI*
- *Innovation by Usage*
- *Virtual Communities*
- *Education in the information society*
- *Media Mania*
- *Piracy and Cyber Crime*
- *Intellectual Property and Communication Rights*
- *Information Economy*

The study of information and knowledge has been the domain of library and information science since the time of chained libraries, as libraries are the outcome of **"modes and methods of recorded knowledge".** Libraries are on the path of innovation since their early genesis, moving from clay tablet libraries to digital libraries. The specialty is that all the libraries are still in existence. The libraries of manuscripts, papyrus rolls and of archives all coexisting along with the Print, Non-print and Electronic/Digital libraries, hence the management of knowledge held by variety of these media is a challenging task being faced by the libraries all over the world. This contemporaneous development characteristic of libraries has created a lasting interest in their study. In recent years, treatises on libraries without walls, virtual libraries and volumes of scientific literature have come up to profile their changing scenario. In this context it also augurs to study the innovations in Librarianship, an attainment perceived with the advent and impact of information and knowledge society. In this proliferating ambit of growth of the knowledge and their beneficial utility by the library stakeholders, discussions under different platforms are being held in India since last two decades and it is evidenced by the number of conferences, seminars and conventions increasingly organised by library professional bodies.

The response received from the LIS professionals has been over whelming. The editorial committee received 168 papers out of these only 131 papers are included by editorial committee in the proceeding of 57th ILA National Conference.

1) Technology Enabled Knowledge Society - 35
2) Knowledge Society using Scholarly Contents - 28
3) Knowledge Society through Standard Planning and Policies - 16
4) Knowledge Society through Scholarly Content Quality Enhancement - 04
5) Innovations in LIS (Library and Information Science) – 48

The papers to be presented by the authors would deliberate on the issues; what really is the matter with knowledge society? Why so much predominance is given for its study? How it has or has been altering the content and characteristics of different areas of study, and the Library and Information Science? To get answers to all these and a number of other similar enquiries on knowledge society, a platform is created by Indian Library Association (ILA) and resolve the issues generated out of discussion. The authors hailing from different corners of the world with diverse library and professional experience provided a bird's eye view on the topics of discussion and would be able to answer some lingering questions relating knowledge society and relations with librarianship.

It is observed that the most contents of papers submitted by the learned authors have been taken directly from the Web and no efforts are made to apply them to their papers. This amounts to plagiarism and clear violation of copyright. The editorial committee has taken a liberal view to accept and include most of the papers to give an opportunity to the authors and especially young professionals. It would be desirable to subject the plagiarisms' check of the content in future and reject the papers if they found to contain beyond a certain level of such acts.

Editors

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The Editorial Committee thanks Dr. D.V. Singh, President, ILA, Dr. Anuradha Gupta, Gen. Secretary, ILA, Dr. N.S. Shokeen, Secretary, ILA, Dr. O N Chaubey, Treasurer, ILA, Sh. Sanjeev Dutt Sharma, PRO, ILA, Shri. S. L. Kadadevaramath, President, KSCLA, Dr. B.K. Vishala, Organising Secretary and the Executive Council of ILA.

Thanks to be also due to Editorial Advisory Board – for the valuable suggestions and the Paper reviewers: Dr. A.Y. Asundi, Dr. M. Krishnamurthy, Dr. Suresh Jange and all the authors for their valuable contributions. Special thanks to Sri Suresh, G P, Project Fellow, DLISc., BUB for the assistance rendered in editing the articles. We are thankful to M/s Om Laser Printers, Delhi who have done tedious efforts in printing the volume in a presentable manner in a short span of time.

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Dr. Ramesha
Editor-in-Chief

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Technology Enabled Knowledge Society: A Case Study Satynand Stokes Library, Himachal Pradesh

Geetabtagili Rana Kanwar

Abstract

Now the information has been considered for life blood of institutions and organization and libraries are considered as a facility of information the overall development of the institutions. The present day society considered as a knowledge development. On the other hand the information and communication technology strongly influencing the 21st century technology enable knowledge society, this paper examines the quality services provide by Satyanand stokes library of Dr. Y.S Parmar university of horticulture and forestry situated at Nauni, Solan, Himachal Pradesh. The paper describe various types of services provide by the library to their users. Its also provide information about the facility provide by any university due to automated libraries

Keywords: Information technology, E-resources, Knowledge society, Satyanand Stokes library

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Artificial Intelligence and Knowledge Society: An Overview

Bandi Ranganatha R Lokeshanaik

Abstract

This paper explores several points regarding the development of the field of artificial intelligence and its potential impact on library science. The discussion is motivated by the nature of future library collections and services that will be made available (in part) through artificial intelligence applications and by the basic need for intelligent analysis of the vast volumes of data and information that will be available through continuing developments in storage and communication technology. The general concept of intelligence is shown to involve a number of more specific types of thinking, and dimensions and objects of thought, and several examples of current research areas concerned with these more specific problems are described. A general field wide dialectic between research oriented towards these specific problems and research oriented towards the integration of these specific capabilities into broader systems is described and related to the general question of improving the capabilities of interactive intelligent systems. These issues are discussed in the context of several definitions of intelligence and artificial intelligence and are illustrated in the example of a specific system.

Keywords: Computer science, Artificial intelligence, Human intelligence, Knowledge

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Blog: A Tool for Information Communication, Dissemination and Library Services

Ramesh Kuri **Veeraswammy J**

Abstract

Today Blogs are considered as a publishing revolution more profound than anything since the printing press". With this revolution a, though, set to by-pass education and training. The explosion of blogs is very apparent when travelling the internet universe. This paper reveals the use of blogs in information discrimination and communication and also discusses application of blogs in providing LIS education and training.

Keywords: Blogs, Web 2.0, Library 2.o, Information dissemination, Information communication, Library services

1. Introduction

Blogs are the sites that capture particular views, ideas, or opinions overtime. These are the web applications, which contain periodic posts on a common web page. We have been experiencing the internet playing vital roles, such as a new communication, online dissemination of information news and views, it is a platform for e-resources, e-library etc. Blogs have made easier to publish content online and creating web pages with HTML. Blogging software's makes it as easy to publish content online as it is to write a note to post on your fridge. Many LIS professional started off eagerly creating their first web sites. Bolger's can receive almost instant feedback as visitors and other bloggers comment on posts and explore mutual ideas.

2. Objectives

- To know the fasted growing feature of the World Wide Web.
- To find out different types of blogs
- To know the features of Blogs and their functionality
- To know the role of Blogs Information discrimination and communication.
- To find out the areas of application of blogs in LIS profession

3. Web 2.0 and Blog

The term "web 2.0" is commonly associated with web application that facilitate interactive information sharing, interoperability, user centered designed and collaboration world wide web. The advent of blogs and the rapid availability of site building software have made it easy for a single personal to reach millions of people in a short period of time. While that was a dream 20 years ago, it has become a reality today. Overall the use of Web 2.0 techniques in the enterprise promises to have profound and for reaching effect on how organization work both internally and externally, creating completely new and powerful ways of reaching, selling and supporting customers as communities.

4. Types of Blog

1. **Subject Blog:** A few blogs covered only particular subject information, such as political blogs, travel blogs, fashion blog, education blogs, and music blogs. Ex:http://www.librarykvpottom.wordpress.com.
2. **Personal Blog:** It is an ongoing dairy or remarks by an individual. Personnel bloggers usually delight for their blog posts, even if their blog is never read by anyone but them.
3. **Corporate Blog:** A blog can be private, as in most cases, or it can be for business purposes. Blogs either used internally to enhance the communication and culture in a corporation or externally for making branding or public relations purposes are called corporate blogs. Ex: http://www.blogs.zappos.com.
4. **Media Blog:** A blog containing videos is called a 'vlog', A site containing a portfolio of sketches is called 'sketchblog'. Blogs with shorter posts and mixed media types are called 'tumblogs', one comprising links are called a 'linklog'. Ex:http://www.mail.comodomedia.com.
5. **Business Blog**: A corporate tool for communicating with customers or employees to share knowledge and expertise. Business blogs are sweeping the business community. Blogs are an excellent method to share a company's expertise, build additional web traffic, and connect with potential customers. Ex: http://www.ciscoblog.com

5. Blog for improved Library Services

With the advent of technology libraries are implementing to provide technological based information services. In this regard they are in position to be head in proper utilization of weblogs for communication purpose. There are few ways in which libraries can use blog technology to improve services and communication with each other. Paula J Hane says "Blogs are natural for librarians" she explains what the benefits in reading blogs are;

- **User comments**: Blogs act as tool for getting comments from the library users. For that we need to design a questionnaire in blog and invite user to leave their comments. It helps us to get valuable comments.
- **Support for Library activities:** Blogs promotes library events like book exhibition, library week, special lectures and some recreational activities by posting them in a blog. A library blog requires three ingredients inspiration, motivation, and dedication. Motivation is the energy to put good ideas into practice and helps launch the new blog.
- **Use as a tool for marketing resources:** In this competitive world increasing demand for information and budgets for libraries are decreasing it is a challengeable issue for many library and information centers to survive. This kind of critical situation we should promote our users by creating awareness about existing sources and services.

- **News letter:** It can serve as a substitute newsletter to circulate the news regards extra activities and new updates. It does not have to be tied to a single writer or editor.
- **New arrival alert:** Libraries can use the blogs as toll for inform new acquisitions to the library collection. There are number of blogs and medias one blog can used for the entire collection and each post could be routed to specific categories and the user could choose which ones to read.

6. Disadvantages of Blog

- Blogs generally have no assessment or polling features.
- Although they often have a comment feature, blogs are not message or discussion boards.
- In general, blogs have limited community features such as those found in Blackboard.
- Most people don't have very much to say that's interesting, and/or are unable to write down their ideas in a compelling and clear manner.

7. Conclusion

The Blogs are great tool for dissemination of information as the system of dated entries makes it easy for the users or viewers to identify fresh updated content. A number of libraries have caught the passion as well. The growth of library weblogs has evident for growth since last several years. The most common aim of the libraries are that satisfied users by providing the information, to fulfill library goal blogs will help to provide news, information and Internet resources for library users. Blogs are facilitating for use to any extent, it can be updated and it facilitate for RSS feed back from viewers. Dynamic role of blogging various institutions, academic bodies, etc. Blogs gives an upper hand to library and information professionals to disseminate, communication of information in faster and innovative way. Web2.0, blogs are an opportunity that should and can be tie together for academic achievement.

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Blog is one of the Emerging Toolkits for Teaching and Learning

Ramesh M R

Abstract

Blogs can have an information sharing application for use in life and socializing and in terms of education application. Many users, teachers and authors use blogs as a knowledge exchange or teaching platform. Nationwide the use of blogs in the classroom is becoming a must. Weblogs are used as educational tools to not only teach students, but also as a means of keeping parents informed of what is going on in the classroom, as well as the entire school. This paper mainly deals with the important and use of weblogs in effective classroom teaching and learning.

Keywords: Blogs, Classroom management, Education, wikis, teaching, Learning, virtual world tools

1. Introduction

The exponential growth and impact of technologies is changing, replacing and supplementing some of the terminologies such as banking into e-banking, money into e-money, commerce into e-commerce, governance into e-governance, formal education with e-learning and further moving towards online and virtual technologies are using so fast i.e., online banking, online learning etc., e-learning tools are wikis, blogs, web browsers, RSS/feed tools, email, virtual world tools, mobile learning authoring tools, podcasting tools, etc. blogs are reshaping our political social and cultural environment, blog technology has developed the fastest, the reason being that it is easy to use, can be combined with multimedia and it is individual centered, making it attractive to people. The use of technology tends to fasten collaboration among students, which in turn will have positive effect on student achievement.

2. Rationale of the study

In classroom we are using so many tools to communicate to the students. Some of the commonly used tools are chalk boards, flipcharts, white boards and overhead projectors. Nowadays different types of technologies can be used to improve student learning. Different technologies provide different kind of content and serve different purpose in the classroom. If new technology is introduced in classroom then teachers also should get updated to it. Due to technology, teachers often find themselves acting more as coaches and less as lecturers. Rather than teaching to entire class, teachers spend more time individualizing their instruction. As a result, students are given much more individual attention due to the nature of some technologies. Following are some of the technological tools in teaching.

- Using LCD projectors , Smart board (interactive white board)
- Power point , Youtube, Podcast, Teaching with the web, Blogs and wikis

3. Teaching with the web: Blogs and Wikis

Like podcast, wiki and other type of new technology, blogs can be used in classroom environment for diary entry. It can also be a useful tool to link

communication between study groups within class or other class or even schools. If used effectively blogs can create a learning environment that extends beyond the school yard.

There are numerous educational benefits of blogs. Blogs are,

- Highly motivating to students, especially those who otherwise might not become participants in class room
- Excellent opportunity for students to read and write
- Effective forum of collaboration and discussions
- Powerful tool to enable scaffolding learning or mentoring to occur.

Blogs is often used as a personal journal that can be updated frequently and is intended for general public consumption. Blogs can be easily maintained and updated through a standard web browser without the need of additional technologies. They are often free of charge to establish. Blogs provide a communication spruce that teachers can utilize with students whenever there is a curriculum need to develop writing, sharing ideas and reflect on work being undertaken in the classroom.

4. Discussions

4.1 Blogs

A blog is a frequently updated online personal dairy. It is a place to express you to the world. A place to share your thoughts and your passions, really its anything you want it to be, for our purposes well say that a blog is your own web site that you are going to update on an ongoing basis. Blog is a short form the world weblog and the two words are used interchangeably.

4.2 Blogs can serve at least four basic functions

Classroom management

Class blogs can serve as a portal to foster a community of learners. As they are easy to create and update efficiently, they can be used to inform students of class requirements, post handouts, notices, and homework assignments or act as a question and answer board.

Collaboration

Blogs provide a space where teachers and students can work to further develop writing or other skills with the advantage of an instant audience. Teachers can offer instructional tips, and students can practice and benefit form peer review. They also make online mentoring possible. For example, a class of older students can help a class of younger students develop more confidence in their writing skills. Students can also participate in cooperative learning activities that require them to relay research findings, ideas, or suggestions.

Discussions

A class blog opens the opportunity for students to discuss topics outside of the classroom. With a blog, every person has an equal opportunity to share their thoughts and opinions. Students have time to react to ideas and reflect on learning. Teachers can also bring together a group of knowledgeable individuals for a given unit of study for students to network and conference with on a blog.

Student portfolios

Blogs present, organize, and protect student work as digital portfolios. As older entries are achieved, developing skills and progress may be analyzed more conveniently. Additionally, as students realize their efforts will be published, they are typically more motivated to produce better writing. Teachers and peers may conference with a student individually on a developing work, and expert or peer mentoring advice can be easily kept for future reference.

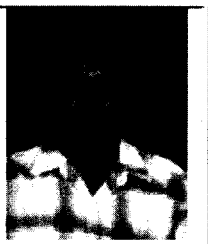
5. Conclusion

Education is a human right and is a key tool for national development. The economic growth of a country largely depends on technological improvements. Learning thought technology is best supported by changes in the structure of school day including longer class periods and more allowance for team teaching and interdisciplinary work. The teacher is the yardstick that measures the achievements and aspirations of the nation. The worth and potentialities of a country get evaluated in and through the work of the teacher. The people of a country are the enlarged replica of their teacher. The importance of technology in today's world challenges teacher educators to create, technology proficient teachers, practitioners who can utilize existing technology, learn to work with emerging technology and adapt as needed when confronted with technological issues.

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Changing Role of Academic Libraries in Knowledge Society

Radhakrishna, B R **Jayarama Naik, KG**

Abstract

Libraries are still far from the day when students, researchers, and teachers can access entire research collections from their desktops. Nonetheless, a wealth of high quality materials is now accessible electronically and accessible anytime and anywhere in the world. This revolutionary changes drastically changing the access, management and dissemination of all types of information sources to the end users. This paper is intended to stimulate thinking about the changing role of the academic libraries in the digital age, about the potential and the imperative for libraries to meet new challenges, and about how these challenges and issues will influence the design of new products and services.

Keywords: Academic libraries, knowledge society, issues and challenges, ICTs.

1. Introduction

Since the rise of colleges and universities across the world during the age of enlightenment, the academic library has always held a central position as the heart of an institution, both symbolically and in terms of its physical placement. Preeminently sited and often heroic in scale and character, the library has served as a visual anchor for the surrounding buildings on campus. These early academic libraries were very different from those of the monastic tradition from which they emerged. Unlike the medieval cloistered buildings that were frequented only by monks, libraries at such venerable institutions as Cambridge University and Trinity College at the University of Dublin were both centers of learning and important gather places for scholars throughout the Western world. The University Grants Commission (UGC) has appropriately stated that a whole range of skills will be demanded from the graduates of humanities, social sciences, natural sciences and commerce, as well as from the various professional disciplines such as agriculture, law, management, medicine, engineering etc.

2. Higher education and academic libraries

Higher education plays a decisive role in the present century. In the present competitive circumstances, all competitions of economy, science and technology, and comprehensive national power are competitions of persons in the final analysis. To train the persons of high ability, there is a need for first rate universities. The first rate university necessarily needs a first rate university library. The plethora of library literature reflects it is no surprise that the traditional library we inherit today is not the library of the future. To meet today's academic needs as well as those in the future, the library must reflect the values, mission, and goals of the institution of which it is a part, while also accommodating myriad new ICTs and the way we access and use them. As an extension of the classroom, library space needs to embody new pedagogies, including collaborative and interactive learning modalities. Significantly, the library must serve as the principal building on campus where one can truly experience and benefit from the centrality of an institution's intellectual community.

3. Libraries as learning laboratories

As new technologies are created that increasingly inform the learning experience, any institution seriously considering the future of the libraries must reach a consensus on the role that its current academic community but also the community it aspires to create in the future. Several years ago, we designed a number of facilities in academic libraries that were expressly aimed at helping faculty members advance their own understanding and use of changing information technologies. As faculty members have become increasingly sophisticated in their use of technology, we now provide special kind of teaching spaces for the application of these skills. At the same time, traditional and often-arbitrary boundaries among disciplines are breaking down. In response to these changes, interactive presentation spaces and virtual reality labs are becoming the norm. Faculty members can now make connections with interrelated disciplines or disciplines other than their own and access resources, regardless of their locations. The library is regarded as the laboratory for the humanist and social scientist.

4. Re-engineering the academic libraries: ICT as catalyst

With the emergence and integration of ICT, many predicated that the library would become obsolete. Once students had the option of using their computers anywhere on campus (in their residence halls, at the local cyber cafe, or under a shady tree in the quad) what would they need to go to the library? At the same time many asserted that the virtual library would replace the physical library. The library as a place would no longer be a critical component of an academic institution. While ICT has not replaced print media, and is not expected to do so in the foreseeable future, it has nonetheless had an astonishing and quite unanticipated impact on the role of the library. The Gulbarga University, Gulbarga is an excellent example of a facility where a newly renovated and expanded library space, combined with computing and interactive media functions, was planned with how users learn and communicate in this new information age.

5. Future of Academic Libraries

With change dramatically impacting higher education, change that focuses on an enabling array of technologies and networks to advance teaching, learning, and research. This vision encompasses a new library that blends the best traditions of the past-those of structure, service, and subsidy-with an electronic or "virtual library", one which transcends time and place. The values and services supported by libraries for centuries will continue. These include ownership of some collections, access to others, the organization of resources, and assistance to users, including responses to specific information needs and questions, information guidance, and formal instruction. These services call for the capabilities of an array of professionals, specialists, and other staff in a library which may have a physical location or exist "without walls."

6. The changing role of academic librarians and library staff in digital age

New ICTs offer academic librarians opportunities to redefine how information and associated instruction are communicated to students and faculty. As academic libraries increase in complexity and new resources continue to spring up. Librarians

are becoming indispensable counselors in the digital environment. They are called upon to assist faculty and students in identifying and evaluating many sources, and to serve as true advisors and teachers rather than as custodians of collections. An important adjunct to the enhanced role of the librarian is the changing role of other library staff; professional, technical, and support personnel. As librarians concentrate their efforts on designing and implanting services, paraprofessionals and staff specializing in particular functions will assume the responsibility for the delivery of these services. These staff can take on greater accountability for the day-to-day housekeeping operations of the library.

7. Conclusion

Higher education supports libraries as essential components of the academic infrastructure, but its view of them is often rather narrow and technocratic. Successful library planning will involve collaboration among faculty, academic administrators, librarians and architects. It will be rooted in how students learn, how faculty members teach, and how teaching and learning patterns will change over time. Planning will be based on what students are actually doing in the library, on what they really need in a learning environment, and on changes in scholarly communication. Finally, it will engage the community in thinking imaginatively about how the library can best contribute to the cultural life of the campus.

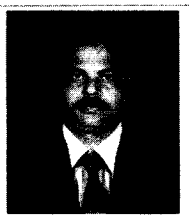
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Citation Analysis of Malaysian Journal of Library and Information Science: A Bibliometric Study

Gurjeet Kaur Rattan **Saroj Bala**

Abstract

The paper deals with citation analysis of Malaysian Journal of Library and Information Science on the topic "Bibliometrics" covering the period 1996-2011. 77 articles on Bibliometrics out of the total 245 articles are examined. The maximum number of articles was in the year 2009 and 2011. A total of 2051 references were used in 77 articles. The most preferred form of references is periodicals (76.11%) followed by 12.53% books, 3.8% conference proceedings etc. The maximum references were for the year 2000. It was found that the most cited periodical by authors was Scientometrics. Along with this the ranked list of most cited periodicals was also provided. Details of self-citations were given on an annual basis. In the end distribution of references in chronological order had also been provided.

Keywords: Citation analysis, Bibliometrics, Malaysian Journal of LIS

1. Introduction

The methods of bibliometrics (and the closely related specialism of informetrics, scientometrics and webometrics (Hood and Wilson 2001) are used to investigate on increasing range of topics, including: the frequency distribution that characterize the use of words and phrases in that text databases, the extent to which websites are linked; longitudinal studies of the development of academic disciplines, and the extent to which individuals, research group or institutions are published or cited in the literature.(Bar-Ilan 2008; Borgman and Furner 2002; Cronin 1984; Garfield 1979; Thelwal, Vaughan and Bjoneborn 2005; Wilson 1999). The last application is of particular current importance as publication and citation measures are increasingly being relating to the quality of the research of an individual or of an institution.

A review of literature reveals that many parallel bibliometric studies on electronic journals have been carried out. Singh, Sharma and Kaur (2011) carried citation analysis of all the journal articles published in the Journal of Documentation from 1996-2010. 487 articles are published in the journal during 15 years. Highest numbers (44) articles are published in the year 2005. The journal contained 15587 citations from 1996-2010. Average number of citation per article is maximum in the year 2009. This study also covers the analyses of authorship patterns in citing article. In authorship pattern, single author citations are dominant than others and it is 201 (49%). This study also reveals that Journal of Documentation is the most preferred journal used by authors in their citation. The paper concludes that only 10 core periodicals can cover more than 2951 (16 %) references. Jan (2009) in her work done Citation Analysis of *Library Trends* from 1994-2007 comprises 593 articles and each articles published during that period were examined and highest number (52) of articles were published in 2004. The journal contained 15662 references 13783 were p-

citations and 1879 were e-citations. Jan (2009) examined 44.51% print books were consulted by the authors and 0% e-books were accessed. Findings indicated that authors consulted 44.04% p-journals and 11.82% e-journals. It was found that female contribution (52.34%) accounted more than male contribution (47.66%). Tiew, Abdullah and Kaur (2002) have carried out bibliometric study on Malaysian Journal of Library and Information Science (MJLIS) covering the period 1996-2000. Aryati, B and Peter, W (2008) also carried bibliometric study on MJLIS covering the period 2000-2006. The present study is a citation analysis of articles on the topic "Bibliometrics" covering the period 1996-2011 as no such study on this journal has been carried out till date.

2. Objective of the study

- To know the number of articles on the topic Bibliometrics in MJLIS.
- To identify distribution of references by volume.
- To calculate average number of citations per article.
- To examine format of citations.
- To know number of format of citations on an annual basis.
- To prepare a ranked list of most cited periodicals.
- To determine chronological distribution of citations.
- To investigate number of self cited articles as well as self citations.

3. Limitations of the study

This citation analyses covered articles only on the topic "Bibliometrics" covering all issues of all the volumes .e.i 1996-2011. Out of the total 245 articles, only articles on Bibliometrics for 16 years from MJLIS were examined. There were 77 articles on the topic.

4. Data collection and Methodology

The data for the study was downloaded from the webpage of the journal. Each reference of the article was inspected to ascertain number of references, form, year, and most cited form of reference as well as self-citation of authors. The data was analyzed using 2007 Microsoft Excel spread sheets.

5. Results and Discussion

The results of the study were represented in the tabular form. Out of the total articles, 31.42%age of articles was on the topic Bibliometrics. The maximum articles on this topic were published in the year 2009 and 2011 and minimum articles in the year 2003 and 2004. The overall trend was increasing number of articles. These 77 articles had 2051 references. The average reference per article was 26.63. Also 128.19 average references per year were used by authors. The distribution of references by Volume/Year was represented by Table 1.

Table 1: Year-wise Citation

Year	No of articles	No of citations
1996	5	83
1997	5	182
1998	5	36
1999	4	267
2000	5	273
2001	4	104
2002	6	79
2003	1	31
2004	1	08
2005	4	88
2006	4	59
2007	2	69
2008	6	114
2009	9	242
2010	7	195
2011	9	221
Total	77	2051

Average References per article =26.63 references, Average References per volume=128.19 references

To examine format of citations, citations were divided into Periodicals, Books, Conference Proceedings, Reports, Theses and others. Almost 3/4th of citations were of periodical form. The least used form of references was Reports. This format of citations was depicted by Table 2.

Table 2: Format of citation

Format	No of times cited	Percentage
Periodicals	1561	76.11
Books	257	12.53
Conference Proceedings	78	3.8
Reports	22	1.07
Theses	42	2.05
Others	91	4.44
Total	2051	100

The maximum i.e. 204 periodical references were used in the year 2000. Sixty nine i.e., maximum references from books were used in the year 1999. No reference of conference proceeding was used in the year 1998, 2003-04 and 2006-08. No reference of theses was used in the year 1996, 2003 and 2005-06. The least used references were reports. The format of citation on an annual basis was shown by Table 3 below.

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Gurjeet Kaur Rattan **Saroj Bala**

Abstract

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1. Introduction

The methods of bibliometrics (and the closely related specialism of informetrics, scientometrics and webometrics (Hood and Wilson 2001) are used to investigate on increasing range of topics, including: the frequency distribution that characterize the use of words and phrases in that text databases, the extent to which websites are linked; longitudinal studies of the development of academic disciplines, and the extent to which individuals, research group or institutions are published or cited in the literature.(Bar-Ilan 2008; Borgman and Furner 2002; Cronin 1984; Garfield 1979; Thelwal, Vaughan and Bjoneborn 2005; Wilson 1999). The last application is of particular current importance as publication and citation measures are increasingly being relating to the quality of the research of an individual or of an institution.

A review of literature reveals that many parallel bibliometric studies on electronic journals have been carried out. Singh, Sharma and Kaur (2011) carried citation analysis of all the journal articles published in the Journal of Documentation from 1996-2010. 487 articles are published in the journal during 15 years. Highest numbers (44) articles are published in the year 2005. The journal contained 15587 citations from 1996-2010. Average number of citation per article is maximum in the year 2009. This study also covers the analyses of authorship patterns in citing article. In authorship pattern, single author citations are dominant than others and it is 201 (49%). This study also reveals that Journal of Documentation is the most preferred journal used by authors in their citation. The paper concludes that only 10 core periodicals can cover more than 2951 (16 %) references. Jan (2009) in her work done Citation Analysis of *Library Trends* from 1994-2007 comprises 593 articles and each articles published during that period were examined and highest number (52) of articles were published in 2004. The journal contained 15662 references 13783 were p-

citations and 1879 were e-citations. Jan (2009) examined 44.51% print books were consulted by the authors and 0% e-books were accessed. Findings indicated that authors consulted 44.04% p-journals and 11.82% e-journals. It was found that female contribution (52.34%) accounted more than male contribution (47.66%). Tiew, Abdullah and Kaur (2002) have carried out bibliometric study on Malaysian Journal of Library and Information Science (MJLIS) covering the period 1996-2000. Aryati, B and Peter, W (2008) also carried bibliometric study on MJLIS covering the period 2000-2006. The present study is a citation analysis of articles on the topic "Bibliometrics" covering the period 1996-2011 as no such study on this journal has been carried out till date.

2. Objective of the study

- To know the number of articles on the topic Bibliometrics in MJLIS.
- To identify distribution of references by volume.
- To calculate average number of citations per article.
- To examine format of citations.
- To know number of format of citations on an annual basis.
- To prepare a ranked list of most cited periodicals.
- To determine chronological distribution of citations.
- To investigate number of self cited articles as well as self citations.

3. Limitations of the study

This citation analyses covered articles only on the topic "Bibliometrics" covering all issues of all the volumes .e.i 1996-2011. Out of the total 245 articles, only articles on Bibliometrics for 16 years from MJLIS were examined. There were 77 articles on the topic.

4. Data collection and Methodology

The data for the study was downloaded from the webpage of the journal. Each reference of the article was inspected to ascertain number of references, form, year, and most cited form of reference as well as self-citation of authors. The data was analyzed using 2007 Microsoft Excel spread sheets.

5. Results and Discussion

The results of the study were represented in the tabular form. Out of the total articles, 31.42%age of articles was on the topic Bibliometrics. The maximum articles on this topic were published in the year 2009 and 2011 and minimum articles in the year 2003 and 2004. The overall trend was increasing number of articles. These 77 articles had 2051 references. The average reference per article was 26.63. Also 128.19 average references per year were used by authors. The distribution of references by Volume/Year was represented by Table 1.

Table 1: Year-wise Citation

Year	No of articles	No of citations
1996	5	83
1997	5	182
1998	5	36
1999	4	267
2000	5	273
2001	4	104
2002	6	79
2003	1	31
2004	1	08
2005	4	88
2006	4	59
2007	2	69
2008	6	114
2009	9	242
2010	7	195
2011	9	221
Total	77	2051

Average References per article =26.63 references, Average References per volume=128.19 references

To examine format of citations, citations were divided into Periodicals, Books, Conference Proceedings, Reports, Theses and others. Almost 3/4th of citations were of periodical form. The least used form of references was Reports. This format of citations was depicted by Table 2.

Table 2: Format of citation

Format	No of times cited	Percentage
Periodicals	1561	76.11
Books	257	12.53
Conference Proceedings	78	3.8
Reports	22	1.07
Theses	42	2.05
Others	91	4.44
Total	2051	100

The maximum i.e. 204 periodical references were used in the year 2000. Sixty nine i.e., maximum references from books were used in the year 1999. No reference of conference proceeding was used in the year 1998, 2003-04 and 2006-08. No reference of theses was used in the year 1996, 2003 and 2005-06. The least used references were reports. The format of citation on an annual basis was shown by Table 3 below.

Table 3: Distribution of format of citation on an annual basis from 1996-2011

Year	Periodical articles	Books	Conference proceedings	Reports	theses	others	Total
1996	60	8	13			2	83
1997	164	9	2	1	2	4	182
1998	27	5			3	1	36
1999	169	69	7	6	8	8	267
2000	204	40	8	8	9	4	273
2001	73	9	15		2	5	104
2002	39	20	2	3	3	12	79
2003	15	12				4	31
2004	6	1			1		8
2005	67	17	1			3	88
2006	49	3				7	59
2007	66	2			1		69
2008	91	15			3	5	114
2009	196	16	10	3	3	14	242
2010	161	16	8		5	5	195
2011	174	15	12	1	2	17	221
Total	1561	257	78	22	42	91	2051

Only one article in the year 1998 was having nil reference. The Maximum number of articles e.i. 24 articles was having references between 10-19 references. The number of references on an annual basis was represented by Table 4.

Table 4: Number of citations on annual basis

Year	Nil citations	1-9 citations	10-19 citations	20-29 citations	30-39 citations	40-49 Citations	50 and above 50 Citations	Total
1996		3	1				1	5
1997		2			2		1	5
1998	1	3	1					5
1999		1		1		1	1	4
2000			2	2			1	5
2001		1	1	1			1	4
2002		1	4	1				6
2003					1			1
2004		1						1
2005			2	1		1		4
2006			3	1				4
2007				1		1		2
2008		1	2	3				6
2009		3	2	1	2		1	9
2010			4		1	2		7
2011			2	4	3			9
Total	**1**	**16**	**24**	**16**	**9**	**5**	**6**	**77**

Ranking of Journals showed that out of total 1561 journal references, Scientometrics had been cited 244 times i.e. maximum number of times. The first 4 ranked periodicals constituted 34.27% of the total periodicals references. Only 15 most cited Journals were taken into consideration for ranking purpose in Table 5.

Table 5: Top most cited Journals

Sr No.	Name of Journal	Number of times cited	Rank
1	Scientometric	244	1
2	Malaysian Journal of Library & Information Science	124	2
3	Journal of the American Society for Information Science and Technology	84	4
4	Annals of Library Science & Documentation	83	3
5	Journal of Information Science	43	5
6	Journal of Documentation	33	6
7	College & Research Libraries	32	7
8	IASLIC Bulletin	26	8
9	American Sociological Review	20	10
10	Library Quarterly	20	10
11	Science	20	10
12	Information Processing & Management	19	12.5
13	Library Science with a Slant to Documentation and Information Studies	19	12.5
14	Higher Education	17	14
15	Reseach Policy	15	15

Out of Total 77 articles on bibliometrics, 47 articles were having self citations and 30 articles had no-self citations. The maximum self-citations i.e. 68.67% were in the year 1996. The maximum self-cited articles were in the year 2011. Self-citation of authors indicates that some of the contributors of the journal under study are quite productive and are continuously working towards contributing more articles to LIS journals of their choice. The year-wise frequency of these self- citations was depicted in Table 6.

Table 6: Number of Self-Citation

Year	Total Citations	Self-Citations	No of Self-cited articles
1996	83	57	4
1997	182	4	3
1998	36	3	3
1999	267	4	3
2000	273	6	4
2001	104	51	3
2002	79	8	2
2003	31	2	1
2004	8	1	1
2005	88	8	2
2006	59	7	3
2007	69	2	2
2008	114	5	4
2009	242	4	4
2010	195	25	3
2011	221	26	5
Total	**2051**	**213**	**47**

The chronological distribution of citations showed whole period of citations. It was clear from the Table 7 that Trend of using references of the Period after 1981-1990

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2000	204	40	8	8	9	4	273
2001	73	9	15		2	5	104
2002	39	20	2	3	3	12	79
2003	15	12				4	31
2004	6	1			1		8
2005	67	17	1			3	88
2006	49	3				7	59
2007	66	2			1		69
2008	91	15			3	5	114
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2000			2	2			1	5
2001		1	1	1			1	4
2002		1	4	1				6
2003					1			1
2004		1						1
2005			2	1		1		4
2006			3	1				4
2007				1		1		2
2008		1	2	3				6
2009		3	2	1	2		1	9
2010			4		1	2		7
2011			2	4	3			9
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2009	242	4	4
2010	195	25	3
2011	221	26	5
Total	**2051**	**213**	**47**

The chronological distribution of citations showed whole period of citations. It was clear from the Table 7 that Trend of using references of the Period after 1981-1990

was the most. The references of the period 1911-1920 were least used. While writing articles, authors were using maximum references of the period 1991-2000 as well as 2001-2010 periods. This use of different period references by authors was obvious from the Table given below.

Table 7: Chronological Distribution of Citations

Year	No of citation	Percentage
NA	3	0.15
Before 1911	7	0.34
1911-1920	3	0.15
1921-1930	7	0.34
1931-1940	6	0.29
1971-1950	15	0.73
1951-1960	31	1.51
1961-1970	102	4.97
1971-1980	218	10.63
1981-1990	355	17.31
1991-2000	689	33.6
2001-2010	611	29.79
After 2010	4	0.19
Total	**2051**	**100**

6. Conclusion

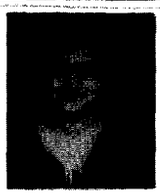
This research was able to find answers to the questions imposed in the objective of the study. There were 77 articles on the topic Bibliometrics out of the total 245 articles in MJLIS covering the period 1996-2011 i.e. 31.42% articles on the topic. The average distribution of references by volume was 128.19 and by article were 26.63 references. The maximum i.e. 204 periodical references were used in the year 2000. Sixty nine i.e., maximum references from books were used in the year 1999. No reference of conference proceeding was used in the year 1998, 2003-04 and 2006-08. No reference of theses was used in the year 1996, 2003 and 2005-06. The least used references were reports. Only one article in the year 1998 was having nil reference. The Maximum number of articles e.i. 24 articles was having references between 10-19 references. Out of total 1561 journal references, Scientometrics Journal had been cited 244 times.ie. Maximum number of times 47 articles were having self citations and 30 articles had no-self citations. The maximum self-citations of authors were in the year 1996. Trend of using references of the period after 1981-1990 was the most. While writing articles, authors were using maximum references of the period 1991-2000 as well as 2001-2010 periods. It was observed that authors were using more references of last two decades for their research.

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College Library Websites: An Analytical Study of NAAC Accredited 'A' Grade Colleges in Kerala

Khaisar M Khan **Beenamole T**

Abstract

This paper discusses the standards and guidelines prescribed by various international agencies and the best practices proposed by National Assessment and Accreditation Council (NAAC) for quality library services through library websites. The paper gives the present scenario of the top ranked NAAC accredited college library websites in Kerala. The analysis of the study show that the NAAC's top ranked college library websites failed to project the true picture and so as to failed to justify the grade accorded by the NAAC. Finally it is concluded that the library should take care of introducing some standards and the best practices proposed by NAAC for designing and implementing services through college library website.

Keywords: Library websites, Academic libraries, College libraries, Kerala

1. Introduction

The World Wide Web has revolutionized the process of scholarly communication. Due to the quantitative explosion of online publications, the physical existence of the library is gradually disappearing. The role of the librarian has been changed from the custodian of books to knowledge facilitator for both print and non-print materials. The role of librarian is essential in designing and creation of library websites. The library website is expected to act as an indicator for the physical existence of the library. Quality web based library services could not be restricted to a limited number of users. The Library's website should be developed so as to allow students, faculty, staff, alumni and the public to use the information they need most often. A library website of the NAAC accredited colleges need to be studied so as to get an overall view of the quality standard and usability of the website.

The nature and quality of a college library website is expected to reflect the quality of its parental institution, the supervisors, inputs from the secondary sources and the feedback from the users etc. Even though there are quality standards and guide lines for library websites, the quality and the standards of the websites vary from institution to institution. The user's needs and expectations for the e-resources are also varying. The ACRL, IFLA & UC Beckley Library of California University, Elsevier Company and several other major other libraries prepared standards and guides for the library websites and digital reference services.

2. Indian scenario

Digitalization activities in India are growing very fast across the country. There are several digital library projects successfully completed all over India. The University Grants Commission (UGC), Ministry of Human Resource Development (MHRD) and various other funding agencies are involved in this task. The National Assessment & Accreditation Council (NAAC) has given special importance to ICT applications in libraries. The open access movement has also helped for free access of authentic

sources. The college libraries in India play a significant role in building quality in the higher education sector. There are more than 30000 colleges allover India. Several colleges have research centers with better infrastructure. However, the college libraries are not in the way of exhibiting and utilizing the web opportunities to market their products and services.

2.1 NAAC accredited A grade colleges in Kerala: Overview

There are 138 NAAC accredited colleges in Kerala. Out which 25 are accredited with A grade in the Cumulative Grade Point Average (CGPA) scheme (new methodology, 2007), excluding teachers training colleges. Most of the NAAC accredited colleges have web sites. However, libraries show a passive attitude towards developing library websites as prescribed by reputed agencies. NAAC in its revised criteria directs colleges to create websites so as to introduce their services, infrastructure and function on the websites. It is doubted, whether the top ranked NAAC accredited colleges possess qualitative and standard websites capable of utilizing the potentials and opportunities it has and justify the rank accorded.

3. Objectives of the Study

1. To analyse the present scenario of library websites in NAAC accredited A grade colleges in Kerala
2. To analyse the information marketing of colleges.
3. To analyze the problems involved in developing and maintaining a standard library website
4. Introducing a model proposal for NAAC accredited affiliated colleges in Kerala.

4. Related Research

Review of literature shows a few studies on library websites of academic libraries were published in India and other countries. (Sunil R Birje;et.al, 2010) observed that web pages of libraries serve as a gateway for quenching the thrist of knowledge.University library webpage must be designed and must be planned in such a way so as to satisfy the different types of information seekers. He has underlined the importance of standardization in web based services. (Kim, 2011) studied the University library websites in users perception.It is found that the University library websites are some what difficult to use.(Bussert, 2011) studied selected academic and public libraries in North America, Europe, and Asia and the study reveals that the type of library is not associated with its quality Web 2.0 application in library websites, enhances the users' interest and service quality of websites.

5. Methodology

The study is limited to the A grade NAAC accredited colleges in Kerala, under new methodology (2007), till December 2011 (excluding teachers training colleges) NAAC accredited `A` grade colleges are taken as the unit for study with the assumption that such top ranked colleges possess top quality services and infrastructure and market strategies. Naturally, the library website also justifies the rank accorded to its parental institution. Again, NAAC is the only popular agency for assessing the academic activities of colleges.

For data, the Websites of the concerned college/library websites were observed up to 15/12/2011, Email/Phone in interview methods were also used to get the needed information. For analysis, twenty five `A' grade colleges in Kerala are grouped into three categories according to the Cumulate Grade Point, CGP, of the colleges given by the NAAC. NAAC's Best Practices for library websites in Universities and College libraries are considered as standard / benchmark for the analysis. For better understanding, Elsevier`s guidelines are also considered.

6. Analysis & Discussion

The `A' grade colleges are grouped into three categories, according to the Cumulative Grade Point Average (CGPA) of the college {(3.5 - 4), (3.20.-3.49) and (3.- 3.19) } The maximum point is 4.

6.1 Background Information of the Sample Colleges

Table1

NAAC point CGPA	Number of colleges
3.5-4 (category1)	4
3.20-3.49 (category2)	7
3-3.19(category3)	14
Total	**25**

Table1 shows that there are 4 number of colleges with NAAC`s highest grade points of 3.5 and above, 7 colleges have grade points between 3.20-3.49 and 14 have grade points between 3-3.19.

6.2 Dynamic library website

To allow the users to have remote access to the library and feel satisfied with the services of the library and to get satisfactory answers to their queries from the remote access e.g. Link to Web-OPAC, N-List and various other resources.

Table2

Link to	Category1 (4.3.5)				Category2 (3.20-3.49)				Category3 (3 -3.19)			
	Total=4				Total=7				Total=14			
	Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
Web-OPAC	1	25	3	75	2	28.57	5	71.43	1	7.14	13	92.86
N-list	0	0	4	100	2	28.57	5	71.43	0	0	13	92.86
Delnet	0	0	4	100	1	14.28	6	85.72	0	0	13	92.86
Others	0	0	0	100	1	14.28	6	85.72	0	0	13	92.86

Table2 shows that there are four colleges in category1, out of which only one provides the WEB-OPAC (25%), and it has a separate site and has no link to the college`s main site. The other services like the N-List,` Delnet' or other e-resources are not provided through the website (0%). The librarians claimed that they have such facilities, but it is observed that, the information is not included in the website or the

users have no access through the libraries' websites. In category 2 28.57% of colleges provides Web-OPAC, N-List and 14.58% provides Delnet and other consortiums. In category 3, only 7.14% provides access to Web-OPAC through library websites, and other services are not included in the site.

6.3 Library homepage for information dissemination

Home page can be use to disseminate current information on various subjects to all the users in both online and physical. It can be used for the regular display of latest addition, news related to job opportunities, fellowships, training, students' placement, academic and scientific news etc.

Information about	Categor1 (3.50-4) Total=4				Category2 (3.49-3.20) Total= 7				Categor3 (3-3.19) Total =14		%	
	Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
New arrival	0	0	4	100	2	28.57	5	71.43	0	0	0	0
Jobs/career	0	0	4	100	1	14.28	6	85.72	0	0	0	0
Training	0	0	4	100	1	14.28	6	85.72	0	0	0	0
Placement	0	0	4	100	1	14.28	6	85.72	0	0	0	0
Outside news	0	0	4	100	1	14.28	6	85.72	0	0	0	0
Others	0	0	4	100	1	14.28	6	85.72	0	0	0	0

Table 3

Table3 shows that none of the colleges in catogory1 and 3 provides the information services like new arrival, job/career, training, placement related news, academic news like conference, seminars, project invitation etc, and other relevant news. In category 2, 28.57% of college libraries provides facilities like new arrival and 14.28% college libraries provides news related to academic, placement, jobs/career and training related news and other news such as research tools, faculty publication etc. In category3, none of the colleges have these facility to their sites.

6.4 User feedback through the library home page

For positive modification and review of services and facilities, feedback provision is included in the home page. To disseminate library resources to the users` desktop and to receive user feedback on e-based services. To create a new environment and use innovative means to maximize use on the investment in technology and to deliver online services with remote access facility are required e.g. FAQ and What is new? Facility.

Table4

	Category1 (3.5-4) Total=4				Category2 (3.20-3.49) Total= 7				Category3 (3-3.2) Total =14			
	Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
FAQ	0	0	4	100	2	28.57	5	71.43	0	0	14	100
Contact Librarian	0	0	4	100	2	28.57	5	71.43	1	14.28	13	92.86

In table 4, none of the colleges in category 1 provides user feedback based services like FAQ, and Contact Librarian. In category 2, 28.57% of colleges provide these services through site. No one in category 3 has FAQ facility in the library site and 14.28% has facility of contact/ask librarian.

6.5 Access to digital repository through library website

Modern libraries are expected to develop sufficient collection of digital repository of their own and to provide access to other open and paid repositories through its home page. The faculty publications, research outputs and other publications can be included in the digital repository. To locate the same on the Websites is suggested by all the reputed agencies.

Table5

	Category1 (3.50-4) Total=4				**Category2** (3.20-3.49) Total= 7				**Category3** (3-3.19) Total =14			
	Yes	**%**	**No**	**%**	**Yes**	**%**	**No**	**%**	**Yes**	**%**	**No**	**%**
Own repository	0	0	4	100	1	14.28	6	85.72	0	0	14	100
ETD`s/other open sources	0	0	4	100	0	0	7	100	1	7.14	13	92.86

The Table 5 shows that none of the colleges in category1 provides facility of access to the digital repository of their own institution and digital repositories/ETD`s /other open source materials of reputed institutions through the library website. Certain college librarians claimed that they have digital repository using D-space and Green stone. In category 2, 14.28% provides the access of their own repository through the site and neglect to provide access to open source materials available on the web. In category 3, 14.28% of college libraries provide access to open source materials and no one provides access to their own repository to through the college library website. 20% college librarians in all category claimed that they have institutional repository through the intranet, but this information is not included in their websites.

6.6 Number pages in the library website

A website for college is mandatory for applying accreditation of NAAC. Therefore such websites should display their infrastructure, services and other relevant items. Naturally, adequate information about the library should also be included in the websites with sufficient pages.

Table 6

Number of pages	**Catogory1** (3.50-4) Total=4		**Catogory2** (3.20-3.49) Total= 7		**Catogory3** (3-3.19) Total =14	
	Number of colleges	**%**	**Number of colleges**	**%**	**Number of colleges**	**%**
Single page	3	75	5	71.42	14	100
2-4 pages	1	25	0	0	**0**	**0**
5-7pages	0	0	0	0	**0**	**0**
More than 7	0	0	2	28.57	1	7.14

Table 6 shows that, 75% of the colleges in category1 have single pages in the website. 25% have displayed their facility in 2-4pages. None of the colleges in category1 has more than five pages. In category two 28.57% colleges have more than seven pages. In category 3, there are 7.14% of colleges have more than seven pages websites.

6.7 Information about the library

A standardized college library website is expected to display all the information about the library collection, services, working hours etc, in its web site.

Table7

	Category1 (3.50-4) Total=4				**Category2** (3.20-3.49) Total=7				**Category3**(3-3.19) Total =14			
Details of	**Yes**	**%**	**No**	**%**	**Yes**	**%**	**No**	**%**	**Yes**	**%**	**No**	**%**
Collection	4	100	0	0	7	100	0	0	14	100	0	0
Services	4	100	0	0	7	100	0	0	14	100	0	0
Library Staff	4	100	0	0	7	100	0	0	10	71.42	4	28.58
Rules & regulations	3	75	1	25	7	100	0	0	9	64.28	5	35.72
Working hours	3	75		25	7	100	0	0	12	85.71	2	14.28
Librarian profile	0 0	0		0	0	0	0	0	0	0	14	100
Photo Gallery	0	0		0	2	28.57	5	71.42	0	0	14	100
Others	0	0		0	2	28.27	5	71.42	0	0	14	100

The Table7 shows that the information such as collection, services, rules & regulations working hours etc are included in all college website. However, they have no there own web page. In 100% colleges in category 1, 2, & 3 included the information such as collection, services. The rules and regulations, working hours etc. included 75% libraries. No website provides librarian profile, photo gallery, and other relevant information. In category 2, 28.57% colleges provide photo gallery and other relevant information. In category 3, 71.42% of colleges provide staff details. 64.28% sites provide details of library rules & regulations. 85.71% have details of working hours. No one provide the profile of the librarian.

6.8 Problems faced by the librarians for quality website

There are several problems faced by the librarians for providing website based services. Inadequate knowledge in handle information and communication technology, lack of proper awareness among the librarians as well as the authorities on the application of web in academic situation, lack of interest among the authorities/librarian in developing library website. Difficulties involved in the periodical up gradation, hesitation to accept the technical knowledge of the librarian in the field of IT.

Table8

Problems	No. of respondents	% of responses
Inadequate knowledge in handle IT by the librarian	20	80
Lack of proper awareness among the librarians.	20	80
lack of interest among the authorities/librarian in developing library website	18	72
Difficulties in the periodical up gradation	15	60
Hesitation to accept the technical knowledge in IT	22	88
Website based services are not necessary for NAAC assessment	21	84
Any other	14.	56

Tables 8 shows, the librarians of the studied colleges identified several difficulties in developing standard websites for libraries. In80% of cases, authorities hesitate to accept the technical knowledge of the librarian. In 72% of cases authorities are unwilling to allow academic status to librarian. 84% of librarians opined that that library websites are not seriously considered while evaluating the library. In several cases (60%) periodical up gradation is a problem for managing the library website.

7. Major findings

- The study reveals that only 8% of the NAAC A grade point colleges have websites.
- It is observed that no website has web2.0 application such as RSS feed etc. 8% of libraries have social networking sites.
- Majority of the libraries have not separate website/pages. Library website has not sufficient number of pages.
- It is observed that library web sites are used to state the infrastructure details of the library. Web based services are limited.
- Open –source information is totally neglected.
- National Assessment & Accreditation Council (NAAC) is not serious in assessing the library websites. It is observed that, no proper benchmarking is introduced, while assessing the college libraries.
- The library services of NAAC accredited `A` grade colleges are restricted to the campus and the libraries are not utilizing their potential for accessing and disseminating the information through the World Wide Web.
- Web sites could not attract wide range of users.

8. Suggestions

For better library website based services, college libraries should considered the following areas.

- Better design for user interface, suitable to the specific situation.
- Should include academic programs and research news of the parental institution and other institutions.
- Provide facility to collect the user feedback.

- Include web2.0 technology functions like RSS feed, blogs, wikis, social tagging etc.
- Provide on and off campus facility.
- Use simple terminology and easy navigation.
- Link to various information sources available on the web.
- Include information relates to staff, collection, services, staff profile.
- Include access to on-line service facilities to users and access for 24*7 days.

9. Conclusion

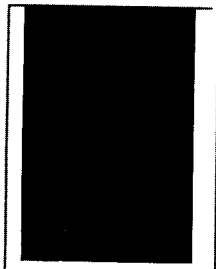
The college libraries are not serious in developing websites. The top ranked NAAC Accredited colleges maintain websites. However, the websites failed to keep pace with the global standard and guidelines. Even NAAC accredited A grade colleges are not following the best practices proposed by NAAC for library websites. The quality and standards of the library websites of A grade NAAC accredited colleges could not justify to the top grade accorded to them by the NAAC. Since NAAC is the only official agency for assessing and accrediting the studied category of colleges in India, it has to review its methodology. The college libraries and their websites are expected to reflect the true picture of the college. Hence, library and its websites must be designed to fulfill multidimensional requirements of the library and must be assessed seriously, giving more weightage in the accreditation process. Library experts must be included in the NAAC peer team.

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Content Management Software: Drupal

Sundar B **Geetha V**

Abstract

Content management supports the life cycle of digital information. A number of content management software has been evolved in recent years like wordpress, joomla and drupal this paper tries to identify the advantages of adopting drupal as content management software. It also highlights important modules useful for LIS professionals.

Keywords: Content Management software, Drupal, E-journals, E-publishing

1. Introduction

Content management synonymously called as information management. Content is most essential component in building and management of information system. Content is king in content management system. The context should be matched with context. For example if the person want to browse the content related Tsunami all the content related to Tsunami should be made available in the CMS, then only the user can access the context for the particular context. Content management, or CM, is a set of processes and technologies that support the evolutionary life cycle of digital information. This digital information is often referred to as content or, to be precise, digital content. Digital content may take the form of text, such as documents, multimedia files, such as audio or video files, or any other file type which follows a content lifecycle which requires management.

Content management is an inherently collaborative process. It often consists of the following basic roles and responsibilities:

- **Creator** – responsible for creating and editing content.
- **Editor** – responsible for tuning the content message and the style of delivery, including translation and localization.
- **Publisher** – responsible for releasing the content for use.
- **Administrator** – responsible for managing access permissions to folders and files, usually accomplished by assigning access rights to user groups or roles. Admins may also assist and support users in various ways.
- Consumer, viewer or guest-the person who reads or otherwise takes in content after it is published or shared.

2. Drupal – An Open Source Web Content Management System

Drupal is a open source software package that allows an individual or a community of users to easily publish, manage and organize a wide variety of content on a website. Tens of thousands of people and organizations are using Drupal to power scores of different web sites, including Community web portals, Discussion sites, corporate web sites, intranet applications, Personal web sites or blogs, E-commerce applications, Resource directories, Social Networking sites and much more. Drupal is distributed under the GPL ("GNU General Public License") and is maintained and developed by a community of thousands of users and developers.

2.1 List of software required for installation

Installation of Drupal requires some additional software. All the software required for running Drupal are open source and can be downloaded and installed on windows. The lists of required software are given below.

Web Server : Apache – 1.3 or 2.x (Linux/Windmows) **or**
IIS- IIS5 or IIS6 (windows only)

Database : MySQL – 4.1 or higher **or**
Postgre SQL – 7.4 or higher

PHP : PHP 5.2 or higher (recommended)

Since, these software are used in a number of applications, there is a easy way to implement them using XAMPP or EasyPHP, which bundles all the required software and are very easy to install. In our totorial we have taken XAMPP as our server base.

Apache2Triad (Bundled package of Apache 2.2 + PHP5 + MySQL5 + PERL, etc.,)

Or

XAMPP (Bundled package of Apache 2.2.9 + PHP5 + PERL, etc.,)

3. Important Modules Useful for LIS Professionals

1. Bibliography Module

a. Manage & display lists of scholarly publications
b. Bib Tex and Endnote Import/Export
c. http://drupal.org/project/biblio

2. Marc Record

a. Creates a library catalog by importing Marc records
b. http://drupal.org/project/marc

3. Book Review

a. Publish book reviews
b. Fields for unlimited authors, booktitle, cover image, publisher, copyright, isbn, # of pages, price, synopsis, table of contents and the review text.
c. http://drupal.org/project/bookreview

4. Millennium

a. Searches Innovative Interfaces' Millennium WebOpac for MARC records
b. Creates a Drupal-based library catalog
c. http://durpal.org/project/millennium

5. Z39.50 Search

a. Searches the world's libraries and presents results
b. http://drupal.org/project/z3950

Other Important Modules

a. Biblio Facets and Webforms
b. Faceted Search and OAI-PMH Module
c. Books and E-Journals
d. E-Publish, Book Review
e. Polls, News Aggregator

f. Blogs, Calendar, Audio
g. Bookmarks, MARC
h. Chat Rooms, Conference, Fast gallery, Docs

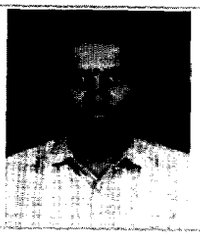
4. Conclusion

DRUPAL has a number of modules, themes to add to its core functionality, so a careful review of the options needed for the Library portal should be studied and implemented with DRUPAL. It provides wide variety of nodes and flexibility to create mange and archive content in a networked environment. Hope this workshop will help the participants in design and development of their own portals in the Libraries.

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Authors Profile



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DESIDOC Journal of Library and Information Technology-(DJLIT): A Bibliometric Study

Asra Sultana M

Abstract

Bibliometrics is a type of research method used in Library and Information Science. It utilizes quantitative analysis and statistics to describe pattern of publication within a given field of knowledge. Periodicals are primary source of information and play an important medium for communication. DJLIT endeavors to bring recent developments in Information Technology, as applicable to Library and Information Science to the notice of the librarians, documentation and information professionals, students and others interested in the field. Bibliometric study on DJLIT is done regarding LIS output in it, authorship pattern, documents cited, etc.

Keywords – Bibliometrics, DESIDOC J. of Library and Information Technology

Author Profile



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Effective Uses of Web 2.0 by the Under Graduate Students of S.M.R.K.-B.K.-A. K. Mahila Mahavidyalaya, Nashik

Kulkarni, S A

Abstract

Application of Web 2.0 in library context is creating new way for librarian to reach user community. To assess the user interest and usage of Web 2.0 is main aim of this study. Out come of this study shows that many of undergraduate students away from this modern communication media- Social Media. This immerges to make possible solutions to combat the gap of this digital divide which makes platform for the application of Library 2.0.

Keywords: Undergraduate students, Web 2.0, Social media, Digital divide, Library 2.0

1. Introduction

The term Web 2.0 is associated with web applications that facilitate participatory information sharing, interoperability user-centered design and collaboration on the World Wide Web. Web 2.0 allows user interactivity and the creation and uploading of user-generated content. It emphasizes communication and connectivity through the web. It is a matrix of dialogues, not a collection of monologues. According to the Report of OCLC (2005) 89% students use search engines to begin an information search. They use the library but less and read less since they began using the Internet. Since it is a need of time that library should move and connect with their student users in the Internet language. 'Library 2.0' is nothing than the application of Web 2.0 in library context. In practice this usually means the library's use and or participation in social media platforms (blogs, wikis, video sharing sites etc.). This technology has already been embraced by every part of our society. Through Web 2.0 librarian can create an additional channel for their users.

2. College Profile

S.M.R.K.-B.K.-A. K. Mahila Mahavidyalaya situated in Nashik city in Maharashtra state. This college is established in 1985 and permanently affiliated to SNDT Women's University Mumbai. The college offers Arts, Commerce, Fine Arts, Home Science, Minimum Competency Vocational Courses, Extension programmes under Distance Education, Post Graduate, Certificate and Diploma Courses all under one roof. The college is re-accredited with B Grade and achieved ISO 9001-2008 certification. Near about 1600 students are learning in this institution at various levels. There are 16 departments which have computer facility without Internet connectivity. Internet facility is available on seven workstations in college library on charge. College has updated website.

3. Purpose of Study

Since 2009, library has been providing Internet facility to its users. Mere providing computers or Internet facility to an institution is not enough. With use of evolving Web tools and services to publicise and increase awareness of library and library services as well as in academic purpose is also a need of time. For practicing librarian it is aim to understand and ultimately decide for what is the best approach in

using social media/Web 2.0 as a part of college library service or develop healthy practice within library and their users. It becomes rather obligatory to know to what extent the services of Internet particularly Web 2.0 tools are being utilized by the students. Here an attempt has been made to know the usage of internet and social media and assess the interest of students in using library conventionally or technical based. This study may give proper direction for library to move for Lib 2.0

4. Objectives

The major objectives are;

- To know the uses of Internet.
- To identify the uses of Web 2.0 tools.
- To ascertain the students interest in using college library by manually or technically.
- Make suggestions on how to use Web 2.0 in the context of library services.

5. Methodology

Keeping in view the objectives of the study a structured questionnaire was designed to fulfill the above objectives. The questionnaires were distributed at random to sixty final year degree course students i.e. third year Arts, Commerce and Home Science class and collected with 100% response.

6. Results and Discussion

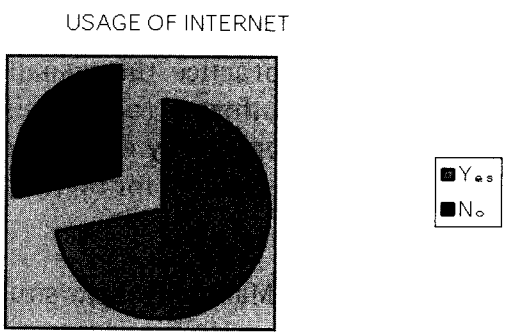


Figure 1

Above figure shows that there are 43 (71.66%) students using Internet and 17 (28.33%) students are not using Internet. In this computer age young adult students are aware to the world of Internet from the school level. Still many students are not using Internet. Here question arises that why all students are not using Internet? To find out the reason of this gets importance when we think about the use of Web 2.0 and in future application of Lib 2.0.

Table 1: Use of Web 2.0 Tools

Tools	No of students
Search engines	
Google	32
Bing	01
Yahoo	10

Social Network	
Facebook	28
Orkut	04
Wikipeadia	11
Web logs(blogs)	04
Youtube	05

Table 1 portrays the utilization of various tools of Web 2.0 by the respondents. It is evident from above table that maximum students prefer Google search engine than other search engines like Bing and Yahoo. In Social Network media Facebook is popular one than others. Very few students utilize Wikipedia, Web logs (blogs) and Youtube. The reason may be that students do not have any knowledge about the utility of these tools. Furthermore, the respondents were asked to state whether they are using various options provided by Google search. Their responses to this question are displayed in Table 2.

Table 2: Usage of google options

Options	Map	Translation	Books	Documents	News	Mail
No. of Students	12	10	11	13	17	20

It is clear from Table 2 that 17 students find using News and 13 students using Document. Very few students utilize other options on Google such as Map, Book, and Translation. May be the students do not know how to browse these options accurately and use pin pointedly. They may not know about the recent and advance facilities provided by Google search engine which are very helpful and useful to them.

There are 20(3.33%) students have their mail account which is very minimum. Many of the social networking and mailing sites requires to login by user with their user account and password. Many of student may be unknown about the login process therefore they are away form mailing facility.

Total 57 (95%) students expressed that they would like to use various tools and services of Internet for academic purpose. It shows that maximum students are willing to adopt advance Web techniques which can be use of academic purpose.

The respondents were asked whether they are preferring library activities manually or technically. Total 38 (63.33%) students preferred library activities technically and 21(35%) students preferred manually. This evident implies to think over this point for future.

When we stepping in Digital library environment it is very essential for practicing college librarian to understand and decide for themselves what is the best approach in using Web 2.0 as a part of our service. No doubt with use of Web 2.0 or Social Media Librarian can play a proactive role in promoting Digital Literacy.

Going through the responses obtained in present study the fact is focuses on digital divide in respondent group; which is major obstacle in developing digital environment in library. This can be overcome through developing user-friendly environment in the library, cordial relationship between student users and library. This helps to make bridge over the gap and make student free to participate in the social networks, as well

as make them communicative. However, to make use of Web 2.0 in Library 2.0 more efficiently college must facilitate with all infrastructure and training at the very seminal level so that most of the students aspiring for use of it. The lack of skill in using computer and web techniques also prevent student from accessing digital information.

7. Conclusion

Knowledge is power. Knowledge stems from communication. Those without the communication technology tools have limited access to this power and influence. It has been established that Internet service as an important tool in the world of Information. However, to utilize the resources of Internet as well as Web 2.0 to its maximum, it is necessary to make student users well-versed in the surfing and browsing on various Web tools. Access to resources; make optimum use of advance facilities provided by various search engines cannot be achieved unless and until they get infrastructural facility and proper training for the use of academic and library purpose. Free Internet facility keep near to those students who are away from technology. Training programmes make them skillful and technology which support them to use Web 2.0. It provides platform for Library 2.0.

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Theme – I

Technology Enabled Knowledge Society



Emerging and Innovative Technologies in Bridging Knowledge Gap

Ramesh Pandita **Shokeen NS** **Ramesha**

Abstract

It has always been human endeavour to extend the frontiers of information and or knowledge in one or the other form and the tool, which has come most handy to a human being in conquering many odds in this course, is technology. Technology in its every form has helped human being to gain control over various such things which otherwise was previously very difficult. Technology has enabled human being to apply and exploit knowledge to its optimum. In this paper, authors have tried to look into the areas where technology has helped humans to grow leaps and bounds especially with the applications of tools like IT and ICT. It is always impetrative to look into facts as how far technology has changed the course of knowledge creation to knowledge exploitation, thereby helped to bridge the knowledge gap at different levels of social strata. It is also equally important to see as how far human being has been able to make significant changes in its dwelling process by embracing technology, its knowhow and applications. Further, the paper tried to examine the significant role of technology, the way it has been truly instrumental in converting traditional society into information society and information society into knowledge society by playing its part in bridging knowledge gap, where humans have started pulling as well as pushing beyond the limits.

Keywords: Information haves, Information have-nots, Digital divide, Knowledge gap

1. Introduction

Every discipline has its own way of defining things in and around society and every science of what so ever nature is aimed to work for the welfare and betterment of society in its own way. Historians will start rating society in historical manner through which it passed during different periods of time. Similarly, political thinkers will discuss about the political systems, which were prevalent during different eras. Economists define society from economic point of view/perspective and so do sociologists, biologists, anthropologists, and many more. In the same vain information professionals do have seen and closely assed the change in dwelling of human being which they rated as only because of change in, creating, collecting, consolidating and repacking, communicating, disseminating and exploiting knowledge in much better and broader way. The more the human mind gains knowledge the more s/he applies it for his/her betterment. If we look at human society during different periods through information professionals microscope then society has moved from uncivilized to civilized, illiterate to literate, papyrus to parchment, parchment to paper, manuscripts to print, print to electronics, and the society at large of the late has moved form information society to knowledge society.

2. Information Society V/s. Knowledge Society

Information society is a society in which information is a good that one can exchange, buy, sell, store, transport, process. The society of the digital divide. On the other hand knowledge society is a human society, in which knowledge should bring

justice, solidarity, democracy, peace etc. A society in which knowledge could be a force for changing society. A society which should provide universal and equitable access to information (UNESCO).

The information or knowledge gap between the developed, developing and under developing countries is huge and this gets better reflected in the form of growth and development of the country. Technology in its every form mostly electronic has created wonders in handling of information, especially when taken the case of application of Information Technology (IT) or Information and Communication Technology (ICT). "Handling of Information with the help of technology" [1] is perhaps the most nearest definition of IT. The information or knowledge gap between different economies of the world is years old and is still in no mood to be bridged immediately. Tools like IT and ICT have really come handy in this direction and have already showcased their potential of handling the huge amounts of information and its propagation beyond the borders. Bridging the knowledge gap between information haves and information have-nots is very vital for sustainable development of world in general and humans in particular. Even at local level the scenario is no way different, we can see a huge gulf of information gap among people when we move from urban to rural areas. The information and knowledge gap keeps on widening as we move from national level to state level, state level to district level and there on to block and village level. Information acquiring, Information handling and Information exploitation by people living at each level of social strata keeps on receding as we move from urban to rural areas.

Keeping in view above facts and the technological blessings, the technology has to play a very crucial role in bridging the information and knowledge gap not only at local level but also at national and international level. Of that late it is being observed that various countries are particularizing creation, collection and exploitation of information in specific fields, mostly depending upon the expertise of countries human resources just to determine their supremacy at global front in a particular area. This trend is not being rated as good among various groups of social scientists perhaps for the justified reasons, keeping in view the economic gains they make out of it. Besides, need is emphasis should always be laid on overall growth and development of country from all sides.

3. Review of Literature

In recent past information society used to be defined in context to economic activity only but of the late the notion has changed significantly and is now being related to other activities as well. Fritz Machlup is believed to be the first person who in 1962 gave the concept of information society with the completion of his research work entitled "The production and distribution of knowledge in the United States" [2]. The concept Machlup gave, was basically about knowledge industry, mostly involved in Education, Research and Development, Mass Media, Information Technology and Information Services. Machlup in 1959 computed that 29% of the GNP in USA came from knowledge industries. Now-a-days information society is defined as a society which in involved in the creation, collection, distribution, communication, dissemination and exploitation of information for economic, socio-cultural, political, industrial, commercial, educational, research, business activities etc[3]. According to Antonio Negri, information society is one in which people do immaterial labour by

indulging into production of knowledge or cultural artifacts [4]. From the above definitions/explanations we can say information society is that society where most of the activity revolves round in the production of non-tangible goods and services.

Peter Drucker in his argument about the information society maintained that it is a transitory phase of economy where economy based on material goods is replaced by knowledge based [5]. Sociologists are of the view that information society refers to society, which moved from industrial to post-modern especially since 1970's onwards [6]. The other related terms used for information and knowledge society are, Information economy, Information Literacy, Post industrial and Post Modern society, Knowledge economy, Information Marketing and many more. Although these terms may apparently seem different in both meaning and content but fact is all the different kind of economies or the social setups mentioned above are driven by sharing and use of information and knowledge as such one or the other way they fulfill the criteria for being referred as information and knowledge societies.

4. Knowledge Gap

Knowledge gap gets reflected at numerous instances at different stages and different places among different people at one point of time. One can easily see the growth and development of some developed countries is way ahead and way far from those of developing and under-developing countries and this is not just because of resources they own and possess but also because of knowledge gap.

Keeping in view the potential offered by IT and ICT in knowledge sharing among knowledge societies, good number of global business houses have entered into knowledge sharing on mutual basis. World Bank do recognized the critical role of knowledge in growth and development or social progress of a country [7]. In its report entitled world development Report 1998 "knowledge and information for development', in which it clearly made a mention of existing 'knowledge gap' and to entail successful development there is need to close the gap in knowledge[8]. The initiative was simply to help bridge or close the gap by way of creating knowledge by extensive research.

Another major step in the direction of knowledge societies is an informal global knowledge partnership of public, private and non-profit making institutions and organizations. The recently concluded global conference-II at Malaysia stressed on the need to have access, effective use of knowledge and information for sustaining economic and social development [9].

3.1 Reasons of Knowledge Gap

In our day-to-day activities, the gap exists between rural-urban cousins, state and central governments, among ministries and their executing agencies, between regions and nations at global level. There are numerous reasons for this knowledge gap. People working in Government, Public or Private sector sometimes deliberately tend to conceal information, mostly because they apprehend that sharing information or losing secret of one's success story may considerably benefit others, which in turn may lower down his/her importance in an organization.

There are so many other reasons for knowledge gap like Tichenor, Donohue and Olien in 1970 presented five main reasons for knowledge gap mostly on the basis of their socioeconomic status, because these people [10]

1. Have better communication skills, education, reading, comprehending and remembering information.
2. Have ability to store information more easily or remember for having the background information about the topic.
3. Have more relevant social context.
4. Have better selective exposure, acceptance and retention.
5. Have attention of mass media towards them

3.2 Other Reasons for Knowledge Gap

- Lack of basic facilities for transfer of necessary information
- Lack of avenues to groom information and knowledge proficient people
- Lack of awareness among people about the need and importance of information
- Lack of awareness about existing knowledge gap
- Lack of Interest and confidence to adapt in alien environment of science & technology
- Lack of compatibility in having effective communication between information haves and Information have-nots
- Lack of background knowledge

4. Technological role in Bridging Knowledge Gap

So far, we discussed about the knowledge gap and the reasons thereof, which contribute to this gap. We have also discussed about the technology as one of the reasons, which is contributing towards enhancing the knowledge gap. People mostly in rural areas suffer due to lack of proper infrastructure and technological knowhow and as a result remain deprived of the technological blessing in dissemination knowledge and information. Technology if on one hand is acting as a barrier on the other hand it is playing a key role in bridging the knowledge gap. Information Technology (IT) is acting as a catalyst in connecting people, helping them to share knowledge and thereby help them to bridge the knowledge gap. A human being has more or less grown dependent on technology.

- With the help of technological robotic arm, medical professionals are capable to perform surgeries from distant places, thereby bridging the gap of space and knowledge (e.g., robotic technology). With the advances in medical science, humans have prolonged their life. Preventive and curative measures are there which have grown control over various fatal diseases. Diagnosis, Prognosis, Pathology and Radiology has moved beyond human imagination with technological advances.
- Technology has enabled human quest to look beyond planet earth. Man has become capable to explore space for its benefit. Placing satellites in the orbit has helped man to predict the events of future. Man has become able to conquer unforeseen odds by way of working on the precautionary measures in anticipation. Weather forecasting in the field of farming has revolutionized agriculture sector. Contribution of space technology for the welfare and

betterment of society is a noteworthy feet, which has significantly bridged the knowledge gap between unexplored to explored.

- Exploration of ocean and earths crest is some of the technological marvels achieved by humans to look for life and energy underneath, helping to bridge the gap of becoming energy proficient.
- The IT and ICT industry has revolutionized to unexpected levels. Internet is one such offing, which has reduced the both physical and mental work of humans. We are able to conduct online lectures, interactive classroom teachings, knowledge management, internet and mobile banking, online ticketing, online shopping; online journals, magazines, e-books, newspapers etc are some of the common benefits, which a layman is able to reap easily. ICT is the greatest technological tool, which has revolutionized the human life in every sphere of its activity. It has indeed helped to bridge the knowledge gap between information haves and information have-nots.
- Entertainment industry has flourished to leaps and bounds; high definition television in every household has become a common thing. Television industry has moved from black and white era to colour, which further moved from LCD's to LED's and who knows what tomorrow it is going to offer. Television apart from being one of the cheap and best sources of entertainment has gone a step ahead of being one of the most informative sources. People are able to keep themselves updated about the latest developments in entire world, which as a result has helped a great deal in bridging the knowledge gap between information haves and information have-nots.

4.1 Other Technological Roles

Technology plays a very vital role in bridging the knowledge gap by seeking the relevant information which otherwise is responsible for information and knowledge gap. Some common trends applied in acquiring information and knowledge and the technological role thereof in it is under.

- **Knowledge Mapping:** These days mapping of knowledge has become the essential component of knowledge management. Knowledge management as we know is an activity, which revolves round the knowledge capturing based on the institutional goals and objectives. Knowledge mapping is somewhat a broader activity, which encompasses activities like planning about knowledge capturing keeping in view the essential ingredients, which a particular piece of information should possess and thereby arrange the same in most convenient and useful manner so that same could be located & put to use in shortest possible time. The activity of knowledge mapping is more projects or activity based, where information is mostly sought or procured keeping in view the purpose for which information is required. Knowledge mapping is more of an objective method of tapping information whereby it is identified, collected and exploited in which technology plays a decisive role

- **Knowledge Harvesting: - K**nowledge Harvesting [11] (KH) is an activity, which involves gathering of related information from various sources for use by institution or organization keeping in view its information requirements. Knowledge Harvesting is a cognitive, scientific, objective, result oriented activity

about knowledge capturing and its implementation in the fields like Research, Business, Management, Engineering etc. to enhance the corporate performance, competitiveness and valuation [12]. KH is about capturing tried and tested knowledge, to convert one's expertise into knowledge asset to improve organizational performance [13].

- **Knowledge Capturing: -** The concept of knowledge capturing is more related to knowledge collection. By capturing we mean to say that existing knowledge is required to be tapped for use by all means which include by purchasing it, by sharing mutually among partners, by creating in-house knowledge repositories, by undertaking research activities etc. Technology plays its part in knowledge capturing as well. Technology has enabled us to create all type of databases for both print and electronic sources of information, thereby helping us to bridge the knowledge gap among its haves and have-nots.

- **Knowledge Networks: - By** Knowledge Networks, we mean those networks which exist in both physical and virtual form. Most of the knowledge networks present in physical form are professional association. These associations play their part in bridging knowledge gap by way of conducting and organizing conferences, seminars, workshops, lecture etc. from time to time. People sharing the same professional colloquium become the members of such associations. In the same manner, there are some associations, which exist, in virtual or electronic form. These groups or associations do play their part in bridging the knowledge gap, mostly by way of sharing or creating knowledge databases in electronic form. Groups on social networking sites have become a common trend these days to share information.
- Technology has enabled us to create knowledge repositories in the form of archives of journals, magazines, newspapers, books etc created and maintained by professionals of field concerned only with the aim to share it among seekers of information by overcoming space and time constraint. A good amount of information repositories' created are available free of cost to users. Knowledge networks of both physical and virtual form are playing a very substantial role in bridging the knowledge gap mostly by making use of technology.
- **Knowledge Sharing: -**Identification, Creation, & Collection of information and knowledge is not an end in itself, but it is always the application of information mostly by way of sharing it among the seekers to attain the desired result recognizes the value of information. Technology of the late has been playing key role in sharing knowledge and information. Even though the trend has grown, where knowledge is being shared among partners on mutual agreements mostly by using technological tools like IT and ICT.
- **Knowledge Exploitation:** There is a notion in LIS circles that by the time a piece of information is published it becomes obsolete, this way we can assess the importance of timely use of information. Timely exploitation of information justifies its judicious use. Technology can equally prevent the underuse, misuse or abuse of information. Falling of vital information in the hands of anti-national elements leads to its abusive use. Judicious Exploitation of knowledge in a sense is made towards the use of welfare and betterment of society. Most of the data

these days is handled with computers and tools like IT and ICT only to help overcome the conventional means of knowledge exploitation. People these days have grown more time conscious as such never want time and space become hurdle in handling and processing the information required for a particular purpose. Technological tools are proving handy in processing the data into information, information into knowledge and ultimately knowledge into wisdom vis-à-vis its application.

5. Barriers of Knowledge Gap

To bridge the knowledge gap between information haves and information have-nots is not so easy what it may seem by far. There are N-number of barriers which in fact act as a barrier in bridging this knowledge gap. A few of them are discussed as under.

- **Technological Skill:** Technology if on one hand has become one of the greatest tools to bridge the knowledge gap on the other hand it has also become one of the barriers in bridging this gap. Skillful Human Resource is always an advantage and lack of it is equally disadvantageous to a country. To overcome the skill difference among people various agencies both at national and international level are working towards skill development of handling IT and ICT tools among unskilled people. At global level UN under UNDP has started NetAid programme and Sustainable Development Networking Programme through its intermediary organizations [14], its main goal is to develop ICT capacity among developing countries.
- **Language:** Language has always been one of the most effective mediums to share knowledge, thereby to bridge the knowledge gap if any. Taking the case of vernacular or regional language, huge amount of information is printed or published in it, but the people who are not able to read or write such language are deprived of its use value. One can take the case of scientific literature published in various foreign languages and to have access to it translation services are required. It is believed that more than 60% literature on scientific investigations is produced in non-English languages; as such, the people familiar only with English language are deprived of it. Similarly nearly two million pages are added to internet each day but only a small portion of vernacular languages is added to it [15]. Statistics show that over 85% content on the net is in English language but the sorry state is fewer than one in 10 speaking English language [16]. This way we can see how language is acting as a barrier in bridging the knowledge gap. The situation becomes more adverse as we move deep inside at regional, national or state level.
- **Bureaucracy:** Bureaucratic setup at national, regional and international level if on one hand has been created with the view to facilitate smooth functioning of govt and its executing agencies at the same time this facilitation setup is also seen as hurdle in timely execution of things with the already laid down rules and regulations. These bureaucratic hurdles in smooth exchange of information contribute equally at national level as well. To avoid public wrath, bureaucracy remains silent by not apprising public about the facts or even misleads at times only to adapt deceptive or delaying tactics, this kind of pathetic attitude of bureaucracy to conceal facts adds to knowledge gap.

6. Conclusion

In the concluding remarks, we can emphatically say that society at large has changed a great deal in its ways and means of handling the day to day activities of life and the prominent force or the factor which played a significant role in its transformation is technology. Technology in the form of IT or ICT not just revolutionized human life but has also thrown open the new vistas of life. With the introduction of technology in handling and processing information, life has started moving almost double the speed with which it used to move earlier. Technology apart from helping humans to overcome the space and time constrains, has also taught him to maximizing the value of time. The growth and development we are able to see these days at global level is only due to the offerings of technology. The way technology has been playing its role in handling the data and information and thereby its timely dissemination among end users for implementation corroborates the fact of technological role in bridging the knowledge gap.

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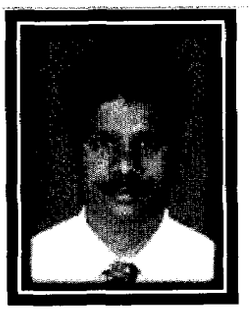
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Google Webmaster - An Innovative and Emerging Tool for Publicize LIS Activities: A case study of 57th ILA Annual Conference 2012

Vishala B K

"Sometimes innovation is about not being afraid to fail" Pamela Jones

Abstract

The current digital revolution especially Internet technology integrated with treasure of information, have been widely recognized and used by the citizens throughout the world. As the availability of information online is increasing the access to online information is also growing tremendously. The escalation cost of the print version is also made it mandatory to the libraries to depend on the e -version to provide traditional as well as modern services to its end users. In this present article the author highlights the basic information regarding providing information to the library professionals about the major initiatives undertaken by the library in a better and faster way. It also provides an insight into how the visibility of the content can be enhanced by submitting and optimizing the website for Google search, and distributing the content across the web. The paper also presents the impact of creating website for the particular event in a particular college.

Keywords: Innovations, Library website, Information technology, Webmaster tool, Google

1. Introduction

Information Technology is the boon for mankind. It has become absolutely necessary for all the libraries to apply Information technology to meet the needs of their clients. IT has revolutionized existing library services, and made it possible to introduce innovative new services. A technological innovation in academic libraries has changed the ways in which library provide services to its users. Rapid advances in IT in the past two decades and application of Information Technology in libraries have brought revolutionary changes in the concept, organization, functioning and management of library and information systems throughout the world.

Application of Information Technology in all the areas has made it possible to access the information through online. As the availability of information online is increasing the access to online information is also growing tremendously. Therefore the internet is being used by many library professionals to create and spread awareness on professional activities. St Agnes Centre for Post Graduate Studies and Research Centre, Mangalore Karnataka, in collaboration with Karnataka State College Librarians' Association (R) Bangalore, Karnataka has shouldered the responsibility of hosting **57th All India Library Conference of Indian Library Association** , Delhi on **February 23-25, 2012** on the theme **"Knowledge Society: Innovations in Librarianship (ILAKSIL 2012)"**. To provide the necessary information regarding the conference to all the professionals throughout the world the librarian developed a website using the most powerful, easiest, professional, and very simple but attractive and freely available website Weebly.com. Several WebPages with content elements like text and photos are added to

the website by simply dragging and dropping them into place. The Website allows editing contents –text and video's in a word processor. Google Chrome web browser was used to develop the Website.

Developing a website without knowing any technical skills or programming itself is a challenging task. The author developed the website http://ilaconference2012.weebly.com especially for the ILA Conference and hosted on the web. Several pages like home page, wherein a welcome note by the secretary , about the conference, about the organizers, call for papers, authors guidelines, registration with form, important dates, committees, important dates of the conference, site seeing, location map and contact address were created and also given necessary links to the contents. Several photos were also included in the website.

2. Objectives

The very purpose of developing website for the conference was

- To provide an information regarding the ILA Conference to the entire professionals in a easier and faster way.
- To track and manage the website by adding into Google webmaster tool to get to know how many of them accessed and used the website more effectively.
- To enhance the number of articles publication by the professionals in a short span of period.
- To determine the impact of developing website.
- To promote ILA conference.

3. Methodology

To investigate the impact of developing website for a particular activity of the library and to track and manage the website the researcher adopted experimental method to analyze the data gathered through the Google webmaster tool.

4. Experiment undertaken for the study

4.1Adding a site to Google

Google webmaster central: After developing a Website the author signed into Webmaster tool to increase traffic to the website. The site was added to at http://www.google.com/addurl.html on 12th of November, 2011.Google adds the sites to its index, and updates existing ones, every time when the user crawls the web. The webmaster gets data about crawling, indexing and search traffic. It also allows receiving notifications about problems on the site. If the website is created by using Google Account, the Webmaster Tools can identify those sites and automatically add them to the Webmaster Tools account. The option is given to the designer to delete any automatically added site. The Google don't add all submitted URLs to its index, and it can't make predictions or guarantees about when or if submitted URLs will appear in its index.

4.2 Steps followed to add and verify a site

- The author Signed into the Google Webmaster Tools with Google Account.
- Clicked the Add a site button, and typed the URL of the website http://ilaconference2012.weebly.com the author wanted to add.

- Clicked Continue. The Site verification page opens.
- (Optional) In the Name box, typed a name for the site.
- Selected the verification method the author wanted, and followed the instructions.

5. Data Analysis

The data gathered from the Google webmaster tool is analyzed and presented below in the form of Tables and Graph. The data was collected using the calendar dropdowns which is available above the graph. The data can be collected for a specified period. By default the Google provides data for the last 30 days. For the present study the data was gathered for a given period of time i.e., 12th November, 2011 to December 25th, 2011 (33 days).

5.1 Queries

The Table 1 provides information about Google web search queries that have returned pages from the http://ilaconference 2012.weebly.com website. The total number- 53 of search queries that have returned from the site results over the given period of time.

Table No.1

Queries 53	Impressions	Clicks
	2,000 ↑ 900%	250 ↑ 400%
	Displaying 500	Displaying 90

5.2 Top Queries

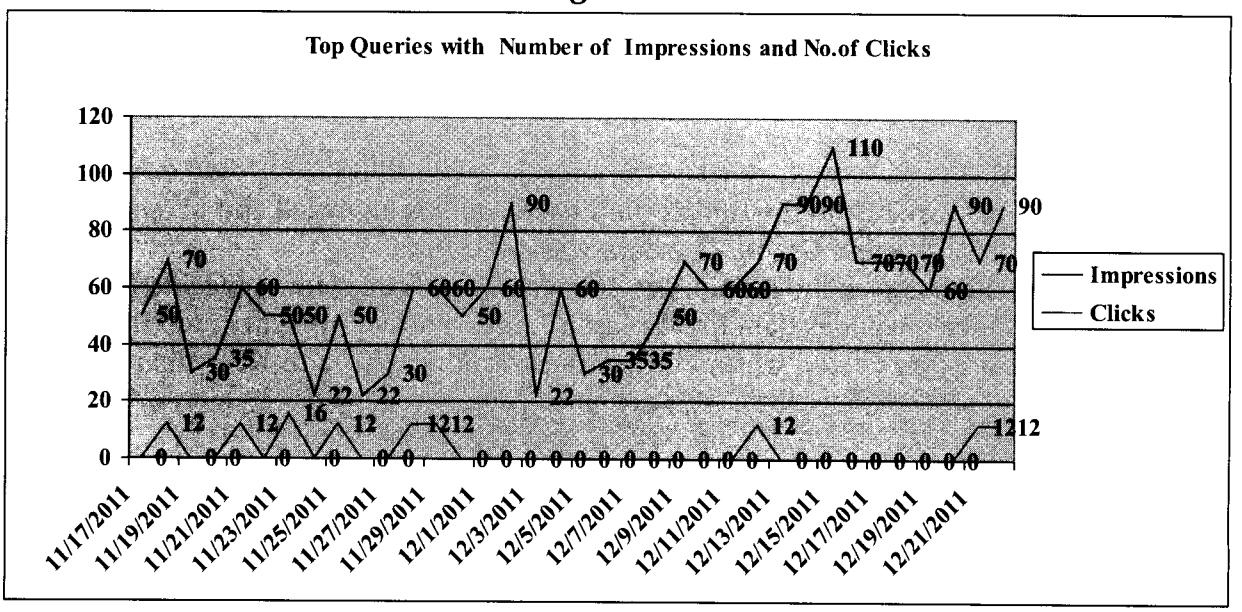
Table 2 and Fig.1 depicts the list of top search queries that returned pages from the site. The web analysis revealed that the majority of the query was based on the page ilaconference2012 over the given period. The table reveals that for a given period time, the number of percentage points increase in daily average and click through rate (CTR) shows a change of +3.0

Table No.2

Query	Impressions	Change	Clicks	CTR	Change	Avg. position	Change
ILA Conference 2012	250	↑ 1036%	70	28%	30	5	↑ 3
St. Agnes College Mangalore	60	âˆž	<10	-		100	
ILA Conference	35	âˆž	<10	-		9	
Indian Library Association Conference 2012	35	âˆž	<10	-		5.6	
Bajpe airport	30	âˆž	<10	-		63	
ilaconference2012.weebly.com	16	âˆž	<10	-		1.9	

(Source:https://www.google.com/webmasters/tools/top-search-queries?hl=en&siteUrl=http://ilaconference2012.weebly.com/)

Fig.No.1



Source: https://www.google.com/webmasters/tools/top-search-queries?hl=en&siteUrl=http://ilaconference2012.weebly.com/

5.3 Top pages

Table 3 and 4 provides information about the number of times; (i.e 16) pages from the site were viewed in search results, and the percentage increase and decrease in the daily average impressions compared to the previous period. The result revealed that both –impressions and clicks have increased % in the daily average position. The sites average position is improving.

Table 3

• Pages**16**	• Impressions • 2,000↑ 900% • Displaying 500	• Clicks • 250 ↑400% • Displaying 90

Source: https://www.google.com/webmasters/tools/top-search-queries?hl=en&siteUrl=http://ilaconference2012.weebly.com/&type=urls

Table 4

Page	Impr-essions	Change	Clicks	Change	CTR	Change	Avg. position	Cha nge
http://ilaconference2012.weebly.com/	700	↑1067%	200	↑567%	27%	-20	18	-10
http://ilaconference2012.weebly.com/ commiittee.html	400	↑700%	22	âˆž	6%	↑6	5.9	↑0.6
http://ilaconference2012.weebly.com/ location.html	320	âˆž	<10	âˆž	-		100	
http://ilaconference2012.weebly.com /about-conference.html	200	↑300%	<10	âˆž	-		31	-30
http://ilaconference2012.weebly.com /call-for-papers.html	150	↑1150%	22	âˆž	15%	↑20	1	↑0.8
http://ilaconference2012.weebly.com/ contact.html	60	↑173%	<10	âˆž	-		1.1	↑1

Source: https://www.google.com/webmasters/tools/top-search-queries?hl=en&siteUrl=http://ilaconference2012.weebly.com/&type=urls

5.4 Links

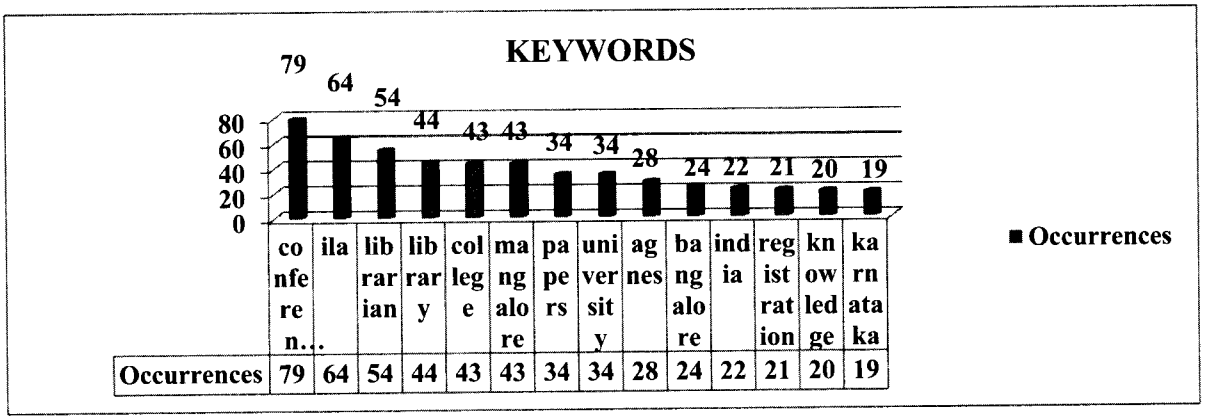
The following Table No.5 depicts the top 14 domains that have links (total links 60) to pages on the website from 12-11-2011 to 27-12-2011.

Table No.5

Domains	Links	Linked pages
rfppl.com	32	1
blogspot.com	13	1
fao.org	3	1
google.com	2	1
conferencealerts.com	1	1
yalwa.in	1	1
grouply.com	1	1
stagnescollege.org	1	1
yahoo.com	1	1
eventsfeeder.com	1	1
prorch.com	1	1
followscience.com	1	1
infolibrarian.com	1	1
ilaindia.net	1	1

5.5 Keywords

The following figure No.2 highlights the keywords through which the site was accessed by the users for the period from 12-11-2011 to 27-12-2011.



Source:https://www.google.com/webmasters/tools/keywords?hl=en&siteUrl=http://ilaconference2012.weebly.com/

6. Major Impact

- The website enable d the library professionals get an information about the ILA Conference on their desktop
- The conference has the pride in getting Keynote address speaker from the University of Tennessee, Knoxville, USA.
- More number of articles was received for the conference proceeding in a short span of period.
- Relevant information was updated to the website which enabled the participants to update themselves and download necessary documents.

7. Conclusion

The present era is known as information era and the main responsibility of the librarians is to act as a facilitator and mediator between the information and end users. Several studies have been proved that the library professionals are more enthusiastic towards embracing new technology to provide service in a better and faster way. Since it is almost impossible to reach the entire users with the printed resources the librarians should look for a way to share their ideas and knowledge using the resources available freely on the internet. From the present experiment of developing website using freely available websites, the author experienced trying out something innovative way for sharing information to the professionals and which had a great impact on the ILA –the 57th Annual conference 2012. Through this experiment it is revealed that "Encouraging innovation does not mean that violating tradition, but rather embracing the future."

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3. Top pages, (2011, December 27) Webmaster tools, from https://www.google.com/webmasters/tools/top-searchqueries?hl=en&siteUrl=http://ilaconference2012.weebly.com/&type=urls
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Implications of the Web 2.0 Technology for Libraries and Information Centers

Jadhav Sunil L **Gurav Amit A**

Abstract

Libraries and information centers are embracing on the ICT which could encourage constant and purposeful change and application of Web 2.0 technologies in libraries leads to meaningful and substantive change in libraries, its collection, services and mode of delivery of services. This article explains the how Web 2.0 tools could be applied in libraries to convert them as Library 2.0.

Keywords: Library 2.0, Web 2.0, Social networking, Blogs, RSS, Tagging

1. Introduction

In the last few decades the advancement of I.C.T. have influenced the libraries and information centers. The library & information centers are operation the era of continuously changing technological environment. Also social changes are presenting new opportunities, challenges & issues for libraries and information centers. The I.C.T. have changed the nature of libraries and also changed the perception and expectations of the user community. Due to the advances in I.C.T. tools and the internet the users of the libraries who were simply readers of books are now transferred to information seekers. Library 2.0 has changed the traditional way of thinking about the profession where library only engage in creating the content and services for user shifted to the side of user where librarian will enable user to create them for themselves.

2. Features of Web 2.0

- The web 2.0 can be summarized as the reciprocal link between the user & provider.
- Web 2.0 permits the building of Virtual applications & functionality from the no. of sources as appropriate.
- An entity that leverages, contributes or describes the transmission of web into a platform for services
- Web 2.0 is participative.
- A platform enabling the utilization of distributed services.

3. Tools of web 2.0

- RSS (Realy Simply Syndication), Web blogs, Podcasts
- Starpages, Social book marking, Personal search agent
- Wiki's, Instant messaging, Flicker, Social networking tools
- Resource discovery tools, Mapping services, Web annotation

4. Library 2.0 and its features

Maness defines Library 2.0 as "The application of interactive, collaborative and multi media web based technologies to web based library services and collection" (Maness, 2006). He mostly focuses on web based services which library can use in this

Web 2.0 environment. The concept library 2.0 is borrowed from the Web 2.0 & Business 2.0 as follows some of the underlying philosophies. Library 2.0 encompasses a range of new and contemporary technological tools & technologies that are used for evolving collaborative environment required for library 2.0. The implications of web 2.0 has promise to bring revolutionary changes in libraries that are bound to bring out conceptual, cultural & physical changes in libraries. This will also results in a meaningful & substantive changes in libraries, its collections, services etc.

5. Features of Library 2.0

- ❖ It is more users centered.
- ❖ It is Socially rich ways for users to communicate with one another & library
- ❖ It is communally innovative.
- ❖ Conversation: The Library shares plans & produces for feedback & then responds
- ❖ Facilitate user participation focus on user & user needs.
- ❖ Make services available at the point of need rather than making the users come to the services.

6. Implication of Web 2.0 Tools in library & Information Centers

6.1 Blogs

In libraries blogs can be used for library announcement, for the collection development, new initiatives, and for users to raise their concerns, queries and suggestions regarding the services and activities of the library.

Utility of Blog in Libraries Information Centers:

- ❖ Blog can be used for marketing of library & information centres.
- ❖ To provide reference service in the form of FAQ & Expert Advice.
- ❖ To provide information about new arrival & also about the web resources
- ❖ The e Mail can also be integrated with blogs, so the features of e mail are the features of blog.

6.2 Social Networking

It is most promising and embracing technology. Social networking could enable librarians and users not only to interact, but to share and change resources dynamically in an electronic environment. Users can create accounts with the library network, see what other users have in common to their information needs, recommend resources to one another and the network recommends resources to users, based on similar profiles, previously accessed resources and a host of data that users provide. Library Thing is one of the library oriented social network, which allows user to catalogue their books and view what other users share those books.

Utility of Social Networking in Library and Information Centers

- ❖ It allow user to create accounts with the library network to interact and to share the resources dynamically in an electronic medium.
- ❖ To see what other users have in common to their information needs, recommended resources to one another and the network recommended resources to users, based on similar profiles.

- ❖ Social networking enables user to catalogue their books and view what other users share those books.

6.3 Instant Messaging (IM)

I.M. is a form of real time communication between two or more peoples based on a typed communication (Chatting). I.M. provides inexpensive virtual reference using systems that users may already have on their computers. Libraries are using IM for real time chat reference service which enhances the image of libraries in a virtual web environment. An excellent example for the enormous opportunity of service in libraries is INFLIBNET SOUL support service. A no. of new & upcoming library systems incorporate this useful utility many integrated library systems use this service in their OPAC interfere.

6.4 Rich Site Summaries /Relatively Simple Syndication (RSS)

Libraries are already creating R.S.S. feeds for user to subscribe to including updates on new items in a collection, new services & new content contents in subscription databases & also providing various articles from different databases. The emerging library services seem to have captured this novel idea in to the development of library services & have embedded in the library services.

In libraries RSS can be used for announcement of the availability of new books and other resources, announcement of workshops/seminars/conferences, to intimate events organized in the library etc. Now this technology is slowly taking the place of Selective Dissemination of Information (SDI).

Utility of RSS in Library and Information Centers:

- Incorporating Content into our Site
- Keeping people up to date with our doing: allow user to see when the library is open or closed, when particular events are taking place and so on. Here user can subscribe to the RSS feed that accompanies it, so they are always up to date what is going on.
- Providing feeds for other people: Social bookmarking services such as del.icio.us or furl can create RSS feeds. Social book marking services are in a nutshell the opportunity to share our bookmarks or favorites with other people.

6.5 Wikis

Like Blogs the Wikis are also relatively quick solutions for moving library collections and services into "Web 2.0". In addition a library wiki as a service which enable social interaction among librarians & users. The lack of peer review and editorship is a challenge to librarians. Wikis as items in a collection, and the associated instruction of users in the evaluation of them, are almost certainly part of the future of libraries.

6.6 Streaming media

Streaming media presentation with interactive facilities provides users a platform to interact with library. Library instruction and orientation programs can be run online with the help of streaming media, where a librarian's physical presence is

not required. It allows millions of peoples to participate in the sharing of these forms of media by producing their own podcast, videos and photos.

6.7 Tagging

In library 2.0, users could tag the library's collection and thereby participate in the cataloguing process. This tagged catalogue is an open catalogue, a customized and user centered catalogue. Tagging simply makes lateral searching easier tagging of library catalogue makes the library user community to become closer to library and its operations. In libraries tagging can be used for adding the keywords from users point of view and their by enhancing the indexing and relevancy of the searches, making the collection more dynamic.

7. Conclusion

The web 2.0 technology has played a significant role in our ability to cope up with changing needs of library users. Library 2.0 is a major paradigmatic shift for librarianship which demonstrates a significant shift from the web & information on the web is being used. The library 2.0 demands libraries focus less on secured inventory systems & more on collaborative discovery systems. Clearly each one of the technologies listed above blogs, RSS, Social Networking, IM, Streaming Media, Wikis, Tagging etc. could be useful in community environment and could be introduces by libraries. Library 2.0 provides new tools to make the library space more interactive, collaborative and driven by community needs. But library 2.0 requires user participation and feedback in the development and maintenance of library services.

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Internet Search Engines and Web Resources

Kannappanavar B U **Biradar S B**

Abstract

The study is focuses on Web resources, its evaluation. Further it discusses the Important web Resources such as Online Journals, Online Database, Bibliographic databases, Full Text Databases, Statistical Database, Abstracting and Indexing Databases, On-line Books, E-mail and List Severs, different Internet Search Engines, Web Search Engines, Advantages and disadvantages of Search Engines etc are discussed in detail.

Keywords: Internet, Search engines, Web resources

1. Introduction

The concept of resource is primitive in the web architecture, and is used in the definition of its fundamental elements. The term was first introduced to refer to targets of Uniform Resource Locators (URLs), as the World Wide Web continues to grow and expand the amount of information redundancy or duplication within similar genres of sites will become increasingly evident. This fact serves to highlight the increasing difficulty of finding information on the Internet, like knowing the address or URL of a web site. Often this information is not readily available. At this point, search engines such as Google, Northern Light, Webcrawler and Rediff must be used.

2. Concepts of web resources

The concept of resource has evolved during the Web history, from the early notion of static addressable documents or files, to a more generic and abstract definition, now encompassing everything or entity that can be identified, named, addressed or handled, in any way whatsoever, in the Web at large, or in any networked information system. The declarative aspects of a resource (identification and naming) and its functional aspects (addressing and technical handling) were not clearly distinct in the early specifications of the Web, and the very definition of the concept has been the subject of long and still open debate involving difficult, and often arcane, technical, social, linguistic and philosophical issues.

3. About web resources

The World Wide Web has a lot to offer, but not all sources are equally valuable or reliable. Here are some points to consider. For specific points regarding social networking and other sites that offer user-initiated options.

4. Web Resource Evaluation Factors

- Who is the author or sponsor?
- What is the authority or expertise of the individual or group that created this site?
- How knowledgeable is the individual or group on the subject matter of the site?

- Is the site sponsored or co-sponsored by an individual or group that has created other Web sites?
- Is the site officially or unofficially sponsored or supported by particular groups, organizations, institutions, corporations or governmental bodies?
- Can the researchers, scholars, groups, organizations, institutions, corporations or governmental bodies listed as authors, sponsors or supporters, be verified as such, and what are their qualifications?
    - Is any sort of bias evident?
    - When was the Web item produced?
    - When was the Web item mounted?
    - When was the web item last revised?
    - How up to date are the links?
    - How reliable are the links; are there blind links, or references tosites which have moved?
    - Is contact information for the author or sponsor provided?

5. Important web Resources

Some of the popular and well known resources in the web are as follows

5.1 Online Journals

The advent of electronic full text journals affords the opportunity to take a fresh approach, recognizing that any risk to publishers in new electronic age is likely to full on small and medium size libraries, which are operating on restricted budget. Many online journals are now available online. Some publishers provide free online access to journals published by them against print subscription of library. Publisher provide access to these On-line Journals either through homepage, for example Cambridge University Press, Chicago university press etc. or through aggregator such as Analytic press, Blackwell, Sage publication, Springer etc. On-line Journals access can be made through

- Individual subscription- In this type, the libraries act as a source of information on what is available? It requires the users to have access to internet but there are no storage problems.
- Local storage at Institutional level – In this type, the journals are stored once and the searching mechanisms are used to access them which are controlled by the institutions.
- Commercial e- journals providers – There are many commercial providers or aggregators which ensures high standards in delivery and presentation. To use this service, it may require special equipments and /or software.
- Cooperative projects at a national or international level- In this type, a group of institutions/ organizations together negotiates with current contents to allow access for all Australian Universities to this service. Examples of some On-line Journals providers are EBSCO, EMERALD, INGENTA, JSTOR, Blackwell, Informatics

5.2 Online Database

More and more e- database in bibliographic as well as full text sources are

available and also added up frequently with the growing demand of users. Some databases are web enabled and some are networked solutions. Web enabled databases are easily accessible from user desktops through the web browser while the networked solutions may require special installation at client side.

The Online databases of following four types,

i) Bibliographic databases

- Asiatic Society journals index
- INDMED: Index to Indian Biomedical journal develops and design by Indian MEDLARS center.
- ISID Index to Indian Social Science Journal
- Ageline
- Agricultural Online Access (Agricola) is an index to all aspects of agricultural sciences
- AGRIS (International Information system for Agricultural science and Technology)
- ERIC database on education
- Ingenta.com- offers access to article of more than 6000 titles.

ii) Full Text Databases

- Economic History Encyclopedia Index
- Scientific Electronics Library Online
- Searchable Ornithology Research Archives

iii) Statistical Database

- Census Information
- Database On Indian Economy

iv) Abstracting and Indexing Databases

The collection and acquisition of abstracting and indexing databases depends on the need of users. Also a library has to choose the required data from large number of such databases available in the market. Some of the examples of abstracting and indexing database providers are as follows.

- Dialog
- CAS-Cambridge Scientific Abstracts
- OCLC First Search
- Ovid

5.3 On-line Books: Since 1970s, the development of electronic versions of printed books (Online books) has as a part of the whole online publishing phenomenon.

5.4 E-mail and List Severs: It provides a means for formal and informal communication. Many list servers are discussion lists that allow discussions to take place on a variety of topics and other provide access to electronics titles such as news letters or serial pricing issues or edupage

5.5 Online Report: Online Reports are now a day considers as an important e-resources of library, which contains reports, published by scientist, research scholars, etc.

5.6 Online Content Pages: The idea behind it is to provide desktop access to the dizitized content of books, conference proceedings, journals etc. It helps the users to browse the content pages to library documents due to excessive physical browsing.

5.7 Online Clipping: The main objectives of Online clippings are retrospective analysis of new items.

6. Internet Search Engines

In browsing of information, the size of the internet makes it impossible to find information by searching one computer at a time. In fact, the continual growth makes stuff searches futile new web pages appear on the internet faster than a human can browse thought the information in them. To keep up with growth, automated searching is needed. Most people find what they are looking for on the World Wide Web by using search engines like Yahoo!, Alta Vista, or Google. Internet searches are conducted in the same manner you would use for an online catalogue at the library. In order to begin your search for relevant resources, it is important to identify the keywords in your topic. Keywords or phrases identify the main ideas or concepts in your topic.

6.2. Web Search Engines

Search engines are an extremely powerful way of promoting your website online. Consider them your silent Public Relations firm, quietly working in the background. According to Search Engine Watch (http://www.searchenginewatch.com) 625 million searches are performed every day. The great thing about search engines is brought targeted traffic to your website. The search engines can always deliver your site to your audiences.

- Search engines, based on databases with machine made indexes, mainly for word based searching; and
- Meta-search' or 'multi-threaded' search systems that rely mainly on the databases made available by the previous systems, for word-based searching. During the last few years, an investigation of the performance of several well known international word- based Internet search engines.
- The coverage of documents present on the WWW (and most of the well known investigations have already focused on this aspect.
- The elements of a document that are indexed to make them usable for retrieval; and Most Popular Search Engines are Google, AltaVista, Yahoo, Bing, Excite, HotBol, Lycos, MSN, NorthernLight,

7. Types of Search Engines

First-Tier Search Engines

All the popular search engines we know of like Google, Yahoo and Bing etc fall in to this category as they take on the majority of search market share. These search engines as we know works by indexing or mapping the entire web in a way so that they can be easily accessed by its users. You should also know that majority of the users for these search engines are people living and US and Europe although its widely becoming popular on other parts of the world as well.

Second-Tier Search Engines

Search engines which are less known or less common among the people fall in to the category, I can say search engine like ask.com fall in to this category. Although ask.com is a very good search engine to use and works almost the same way as the search engines which belong to the first category they just cannot compete with the big players in the industry. Why not try ask.com for few days? you may well like it who knows! You should know that you don't want to be spending much for optimizing your sites for these type of search engines as they don't really convert well for the simple reason "They don't have enough user base like big players".

7.1 Regional Search Engines

It should be really interesting for you to know the fact that Google is not really the most popular search engine across the globe, there are some exceptions. There are places where people prefer to use their regional search engines to find what they look for around their place. Here are few examples of regional search engines.

http://www.philb.com/countryse.htm
http://www.searchenginecolossus.com

Topical Search Engines

There are many search engines which really focuses on certain distinct topic like sports, music, fashion etc. and these search engines does have a decent amount of user base who are really interested on the topic. Here are few search engines of that kind.

http://www.yellow.com, http://www.brittannica.com,
http://www.artnet.com, http://www.worldexecutive.com,
http://kids.yahoo.com

Web-Spider Based Search Engines

This type of search engines use specially designed spiders and bots which crawls the web to find and index pages. These bots are totally automated and don't have any human interruption. Google, Yahoo and Bing from Microsoft use the exact same method.

Hybrid Search Engines

Hybrid search engines are something which includes variety of search results on their webpage. Google is a very good example for this kind of search engine. As you can see that there is variety of results for the search term, you do have organic results, also results on the video and then on the right end you have sponsored listing which belongs to add words program from Google. Hybrid search engines do a very good job of mixing various search results and provide it to their users.

Meta Search Engines

If you are an user of multiple search engines then you might have probably noticed that different search engines produce different results for the same search term, this mainly due to the difference in their algorithms and difference in the metric systems they use in order to rank pages. So what are meta search engines. Meta search engines take the search results of many popular search engine, put them together and generate a new set of results that is based on the results of all these search engines thus

really improving the quality of search results, they are also very good in getting you the page which you are really looking for.

8. How web search engines work

A search engine operates, in the following order

- **Web crawling**
- **Indexing**
- **Searching**

Web Crawling

Web search engines work by storing information about many web pages, which they retrieve from the html itself. These pages are retrieved by a Web crawler (sometimes also known as a spider) an automated Web browser which follows every link on the site. Exclusions can be made by the use of robots text.

Indexing

The contents of each page are then analyzed to determine how it should be indexed (for example, words are extracted from the titles, headings, or special fields called meta tags) data about web pages are stored in an index database for use in later queries, a query can be a single word.

Searching

When a user enters a query into a search engine (typically by using keywords), the engine examines its index and provides a listing of best-matching web pages according to its criteria, usually with a short summary containing the document's title and sometimes parts of the text.

9. Role of Search Engines

- Search engines are especially helpful when a user first begin s to explore a new topic.
- To understand why, consider how a browser operates and how the web is organized.
- Before the browser can display information, the user must enter URL.
- However, information on the internet is not organized by topic; a user cannot easily guess where to begin.
- Automated search tools help users by finding a set of pages that contain information related to the topic.

10. Search Strategy

All search engines have default method. Boolean logic, the basic Boolean operator are AND, OR, NOT. Variations on this operator are called proximity operators that are supported by some search engines include if you are looking for information on the inventor Thomas Alva Edison, "Thomas Alva Edison" OR "Thomas A. Edison" OR "Thomas Edison".

11. Advantages of Search Engines:

- Best suited for complex keyword/ concept searches.
- Control over search: search terms can be combined as required.
- Searches can be limited to period of time, fields, source type,etc.
- Currency of information, made possible by regular addition by web spiders.
- Exhaustive information can be retrieved.

12. Disadvantages

- Although initially both directories and search engines seemed to suffer from different types of problems, most of those difficulties were the result of ambitions that are likely to prove untenable in the long term.
- The web is simply getting too big for any single organization or service to catalogue or index, irrespective of whether they use people or computers to generate their indices.
- Most of the search engines suffer from a number of serious problems, which affect both their ability to provide a comprehensive current index and the likelihood that users will find what they are looking for even if it has been indexed.
- The use of Meta tags improves the precision of our searches to the descriptor, identifier, author, title, or source fields; that means it can provide the field search.
- Barring some innovative searching methods, the searching today is mostly a process of matching the query terms to the words in a document. If this matching is not perfect, then the relevant information will not be retrieved.
- An empirical investigation of the consistency of retrieval through Internet search engines is reported. The focus is on a characteristic related to size: the degree of consistency to which an engine retrieves documents.

13. Conclusion

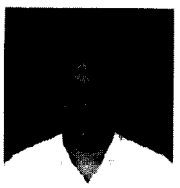
Conclusion of this study can be summed up as follows: The electronic documents collections service offer to library users is not a comprehensive one and we are aware that there are a number of relevant web resources available. web users should be aware that limiting searches to single SEs results in missing substantial pieces of information ranked highly by other SEs and directories. Instead, use MSEs to access efficiently a wide array of highly ranked results in one place. Why search only one Internet search tool when you can search them all In general, it is recommended to be familiar with various MSEs, their search capabilities and underlying SEs and to use them in your searches. It is also suggested that in particular cases when insufficient relevant documents are retrieved, in addition to browsing the as one of the most significant findings of the present study has been particularly successful.

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K-Librarians of the Knowledge Society

Babita

Abstract

The nature, scope and role of libraries and librarianship have experienced many transformations along with time. The advent of ICT has impacted the scenario more than any other change. This paper describes in detail the reshaped, expanded and new age roles of the librarians in knowledge society.

Keywords: Knowledge society, Librarianship, K-librarians

1. Introduction

Contemporary society is called knowledge society where information and knowledge has become vital resources for overall societal development. International Encyclopedia of the Social Sciences defines it as a "Society in which the creation, dissemination and utilization of information and knowledge has become the most important factor of production. In such a society, knowledge assets (also called intellectual capital) are the most powerful producer of wealth, sidelining the importance of land, the volume of labour, and physical or financial capital". The librarians being traditional information providers have a big role to play in this new age. "Some critics feel that with the development of IT tools and their widespread use, information professionals are out of business. On the contrary, the professionals are in for a bigger role now" (Aparajita Suman, 2006, P.3). Besides providing traditional services with traditional tools they also have to equip themselves with modern IT tools in order to survive in this competitive age. They have to resort to new services, tools, techniques and develop new attitude and vision. For a very long period they were just the custodians of knowledge. Later, human being's inherent propensity to communicate the gathered knowledge compelled the librarians to act as agents of dissemination. So from custodians of knowledge they become communicators of knowledge and mediators between sources of knowledge and their users. It was a basic and paradigmatic shift in their professional responsibilities.

2. Nature and Scope of Librarianship

In the 21st century the scope of librarianship also expanded. Besides librarians at every level and in every institution it also includes educators, library technicians, information specialists, knowledge managers, teacher librarians, library consultants and professionals who directly or even indirectly work in/for libraries. It is important to acknowledge that "Librarians have always had two overriding imperatives: knowledge of the users they serve (ranging from the general public in public libraries to highly specialized groups in research and special libraries) and knowledge of recorded knowledge domains". (Griffiths, J.M., 1999, P.16). "The fun of library work is in knowing books and people", as it is said (Satija, MP,2008). These two primary foci of the librarian's role will not change. In fact they are reinforced in the current environment. ICT has helped to do it more effectively.

2.1 Reshaped roles

In view of the above developments, librarians of the knowledge society have to undertake new roles besides effectively performing their traditional duties. With the coming of new technologies and various IT tools and the changing nature of some traditional knowledge resources, some of the roles of librarians will be reshaped in various ways. Some of the examples of these role shifts include:

- From collection builder to knowledge prospector as knowledge management requires knowledge recovery and discovery.
- From classifiers catalogers, indexers to metadata developers and publishers.
- From information retrieval specialists to knowledge navigators and "expedition guides and link managers".
- From reference librarians to information analysts and knowledge interpreters as they provide knowledge based solutions than mere information only (Griffiths, J.M., 1999, P.16-17).

Besides these reshaped roles, some of the roles have expanded to a larger extent. These are:

2.2 Expanded Roles

2.21. Managers

The world's first libraries were essentially archives. Libraries as we now recognize them as collection of written or printed literature did not occur until the development of arts and sciences. Librarians always had the responsibility as the identifiers and custodians of documentary records of civilization from printed to digital. Most librarians are managers in many ways, whether in supervising their junior staff, being responsible for a department or collection or heading a large library or information system within a corporation. In the context of decision making information is treated as the basis of management. So management skills are required by information professionals at various stages of the information cycle (Gill and Dabas, 2003, P.725-726). Information management requires the knowledge of principles of management and use of technology to manage and serve information to the clients as in any corporate organization.

2.22. Teachers

Library professionals need to continue to develop their traditional role as teachers, especially in assisting others to learn the skills needed to find and evaluate appropriate information sources. The teacher librarian embodies an outreach mindset, one in which librarians define a range of information needs of their varied users community (faculty, researchers, undergraduate and graduate students) and design and present instructions in a variety of formats (lecture, self paced learning, group and individual learning) and at different venues (in a library, in a class room, dormitory, over the Internet, computer assisted tutorial) to meet their needs (Ashraf, Tariq., 2003, P.11).

2.23. Multi modal literacy tutors

In fact it enables people to handle information critically and productively in any given situation by arming them with an integrated set of skills (research strategy, evaluation and knowledge of tools and resources). "The term multimodal literacy

(developed from Kress & van Leeuwen 2001) is gaining currency as a term that points to the rather complex semiotic competences that citizens need to develop in order to gain a formative influence on the knowledge society" (Drotner, Kirsten, 2005, p:4).

2.24. Cultural custodians

Librarians have always had the critical role of preserving culture. In our expanded role, working with partners in archives, historical societies, art galleries, museums, government, academia, businesses and others, we have become the keepers of information resources in all formats. In addition to preserving the printed material for research and archival purposes, the main challenge now a days is of preserving web material for the same purpose. The average life of a web object is 45 days (http://alexandria.sdc.ucsb.edu/NFS/index.html).

2.25. New age roles

Besides the above reshaped and extended roles, there are some roles which were either performed by subject specialists in the past or are wholly the creation of this new age and changing information scenario. These are

2.26. Technical Experts

In the new age, everyone should have some knowledge of networking and web technology and also IT literacy, to say so. The library professionals especially are supposed to arm themselves with state of the art information technology to manage information. Among these technologies computer and telecommunication constitute core of IT and combination of both (ICTs) has revolutionized the whole information scenario globally (Prakash Chand, 1998, P.68).

2.27. Guides to the Gateways of Knowledge

Instead of their traditional role as gatekeepers of the houses of knowledge, present day librarians are expected to function as mediators between users and knowledge. Librarians excel at identifying, acquiring, organizing, shelving, preserving, archiving knowledge and assisting in its use. They have extensive knowledge and experience working with community groups in providing essential local information and promoting public's right to know.

2.28. Educators and Guides

Public librarians can teach the public how to identify and evaluate information that is essential in making decisions that affect the way they live, work, learn and manage themselves. Effective citizenship is possible when citizens develop the skills to gain access to information of all kinds and put such information to effective use (Kranich, Nancy C, 2001, P.84). The help of trained librarians is needed, whose job is to be familiar with multiple system of access to information. They can help them with URLs of different government websites and the working of these services.

2.29. Information Analysts and Researchers

Librarians assist people doing research, but they also do research themselves and apply it in their libraries. Library professionals will have to assume the role of information analysts, synthesizers and interpreters of knowledge rather than be content with mere acquiring, organizing and providing information when asked for.

Further the role of traditional librarianship is changing into cybrarianship to include the task of discovering, mining, filtering, selecting, organizing and packaging the information (Gulati, A. and Raina, R.L, 2000, P.12).

2.30. Resource Procurer

In some institutions or countries librarians are called upon to get financial support, whether public funding, or outside grants for their institutions. This has been done in the past also; however what have changed is the expectations. In view of the expanded role of library professionals, many people see opportunities for them to raise funds from the information industry and to get research support from foundations and corporations.

2.31. Resource Managers

The librarians need to broaden their length and breadth of cataloguing to include electronic resources both generated and stored on local networks along with source on the Internet (Ashraf, Tariq, 2003, P.12).

2.32. Digital Bridges, Creators and Producers

Alan Bundy (2001) has rightly said that the "so called 'Information divide' in society is not synonymous with 'digital divide'. People can be digitally rich but information poor. There is a difference between having access to information and being information savvy. The librarians can help to bridge the digital divide by providing special services to the general public (Kranich, Nancy C., 2001, P.152). Librarians can do data mining from the web, in this process information relevant to their users is extracted, collected and customized for use by their local users. A library may have its own website, or a database can be created of the information thus collected.

2.33. Expert and Advisor

In the developed countries information professionals are rightly recognized as experts and advisors. "Increasingly they are called upon for expertise, whether to help organize collections on the web, to educate and train for the information highway, to develop and evaluate information policies at universities or within government, to help build new information resources or countless such other things" (Carbo, Toni., 1999, P.27). In India and such other developing countries the role of library professionals in policy making is near nothing. Now it is the time and opportunity for the library profession in this age to seize leadership roles and help shape their future.

3. Conclusion

The new society is presenting lots of challenges before the librarians. Pacing up with the latest technology and continued professional development are the only answer to these challenges. It is high time to rebuild and redefine the objectives of libraries and the functions of the information professionals. They will have to act as a facilitator, advisor, consultant, instructor, navigator, metadata manager, searcher, researcher, evaluator, organizer, preserver, promoter, communicator, technical expert as well as a manager, entrepreneur, advocate and visionary leader.

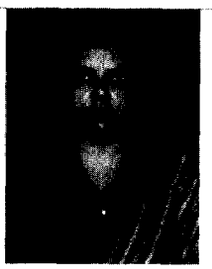
"The success of a mission or project requires the librarian to be both leader and follower consistently providing guidance from either role"(Griffiths, J.M., 1999, P.17). As

change is inevitable so librarians like any other professional should also welcome this. They should prepare themselves for it, facilitate it and rather become front runners in shaping and giving direction to it. Only then they will truly become the knowledge librarians of the knowledge society.

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Knowledge and Knowledge Society: It's Impact

Abhilash YG

Abstract

Every country has its own knowledge assets. It is therefore essential to plan and work towards capturing and connecting the forms of knowledge that individual and societies already posses and the new forms of development, acquisition as disseminate of knowledge most valued by the knowledge economy through knowledge based economy models. The idea of the information and knowledge society is based on the technological breakthroughs. In this study the author made an attempt to review as what exactly is knowledge and society, what it is and what not, further the article justify that the knowledge is individual or personal. The paper concludes with features of knowledge society its impact on various fields.

Keywords: Knowledge, Knowledge society, Knowledge support system, Impact

1. Introduction

A knowledge society is a society that is nurtured by its diversity and its capacities. The concept of knowledge societies encompasses much broader social, ethical and political dimensions. There is a multitude of such dimensions which rules out the idea of any single, ready-made model, for such a model would not take sufficient account of cultural and linguistic diversity, vital if individuals are to feel at home in a changing world. Various forms of knowledge and culture always enter into the building of any society, including those strongly influenced by scientific progress and modern technology.

2. Knowledge: The conceptual thoughts

Knowledge is nothing but Inference. Inference means having a familiarity of a subject through experience or education which gives rise to knowledge, for example where there is smoke there is fire. If we understand Inference properly, we get a clear picture of knowledge. Suppose a man traveling in a car sees a smoke in the air, he automatically understands there is fire below and even if he has not seen fire. This Knowledge occurs because he has seen fire and smoke in kitchen before. Hence through inference he connects between the two incidents. This inference is known as knowledge. Knowledge can be in the form of book review, annotation, assessment, interpretation, ideas, skill to access information etc., In order to break the rules.....one must to know the rules!. In order to know KNOWLEDGE one has to be familiar with what is not. For example define a cow. Here the definition should explain qualities present in cow only but not present in any other animal. That is soft portion in the neck of Cow. Knowing the special quality of a subject is known as Knowledge.

3. Accelerated growth of recorded knowledge

Beginning with the 18th Century, research has been a major pursuit for the creation of new knowledge. However, the creation of new knowledge, innovations, and inventions has been largely due to the efforts of individuals with a flair for research, intense passion and total dedication. They created the necessary research environment

themselves. Therefore growth of knowledge was sporadic and slow. The time lag between the creation and application of this newly generated knowledge to various productive activities was quite long. But with the beginning of the twentieth century, more particularly in the latter half of this century, research has been a corporate activity by specialized research institutions, supported by governments, industries, UN Specialized agencies and other international organizations. Most western countries have built up excellent infrastructure facilities for conducting research. A class of professional researchers, with career opportunities has evolved, with liberal funding facilities from governmental and non-governmental bodies for taking up research projects. This phenomenal growth of new knowledge, its accessibility, organized through very well structured Information and knowledge industry, in almost every micro-discipline, has been one of the most important causes for the change towards a Knowledge Society. Besides these, ICT has also enabled a number of other facilities such as e-mail, teleconferencing, chat sessions, speeding up the process of creating new knowledge.

4. Embedded knowledge

Knowledge and know-how are also embedded in things natural and man-made. For instance, the study of natural resources, their occurrences, compositions, how they may be extracted, manipulated, converted, applied and preserved, applied (e.g biodiversity studies) for human benefit, is an exercise in knowledge generation and application. By gaining such knowledge, it may become possible to synthesize or recreate or simulate some of nature's offerings. Knowledge is also embedded in machines, tools and devices by those who design, develop and innovate them. In all these cases, there is considerable investment in knowledge and therefore, those who make the investments would want to obtain returns on them and prevent unauthorized use of the knowledge. Thus arise issues relating to intellectual property rights, patenting, piracy, etc. This type of knowledge is hidden and not always available in the public domain (Neelameghan).

From the foregoing account of the nature of knowledge and its comprehensive scope, one can glean the value that knowledge acquired in all production and distribution activities of material advances for enriched human living. These developments, research communications in the form research papers gained momentum with the arrival of research periodicals and research reports and similar other products. With the advent of computer and communication technology, dissemination and research results have acquired tremendous speed in diffusion and accessibility, triggering new ideas for further work in any discipline. Today this pool of accumulated knowledge is available through Internet and web pages almost instantaneously throughout the world, irrespective of geographical location, economically rich or poor region, to almost all. Every subject or discipline in all its dimensions is represented in Internet, which has been a boon for the creation of new knowledge, by research specialists.

5. Knowledge of Individuals

In today's fierce competition in business, knowledge of individuals is considered a vital resource, which is obtained by careful nourishing of experts in companies who

employ them. This is considered as the intellectual capital of the organization. Knowledge engineering and Knowledge management, backed by artificial intelligence, expert systems, decision support systems, are new disciplines emerging in this context. The knowledge engineering process involves the capture, representation, encoding and testing/evaluation of expert knowledge. As such, a knowledge base is built containing the set of facts and heuristics (rules of thumb) relating the experts' well-defined task of knowledge. Knowledge management involves identifying or locating and capturing knowledge. Once the knowledge is captured, including tacit knowledge, which deals with what is in the heads of individuals, and explicit knowledge, which can be easily codified, the knowledge, can be shared with others. The individuals will apply this shared knowledge and internalize it using their own perspectives. This may produce new knowledge, which then needs to be captured, and the cycle starts over gain. Intelligence systems, which are software programs, a product of human brains, have given a cutting edge to companies to combat the fierce competition in business. This type of knowledge is the exclusive property of an organization and hence will not be available in the public domain.

6. Features of a Knowledge Society

In a knowledge Society, knowledge comprehends a wide range of human skills. Knowledge arising out of research in science and technology, social sciences, humanities, individuals who are endowed with special skills, experience, and expertise, that may be tacit or explicit, embedded knowledge in nature and artifacts of various kinds and similar others constitute knowledge in this study. But in all case knowledge is personal/individual.

7. Impact of knowledge society on various sectors

While every sector of an economy is affected by the fast changing dimensions of the emerging knowledge society, some of them as follow:

- the education and training sector, as this sector is primarily going to be the basic feeder to the class of knowledge workers and
- the information support infrastructure that makes information and knowledge provide the means for further development of knowledge. Only these two sectors are taken up here to assess the impact of knowledge society mainly because these are the most vital sectors in developing the knowledge sector, which contributes wholesomely to the growth of new knowledge.

8. Education and Training

A society's socio-economic growth and development are entirely dependent on the quality of the educated class whose knowledge forms the intellectual capital. Education is the process of acquiring general and specialized knowledge by means of study and learning that develop intellectual power and judgment. It also includes acquisition of skills for executing various professional and vocational functions, development of culture, which is an expression of the mode of thought and feelings. All these are accomplished by the educational system at different stages and levels of study and learning. In the knowledge society, it is envisaged that this process of education should get the highest priority in terms of investment. The proper channeling of it is

sure to create the necessary conditions for further developing knowledge skills at all levels of society.

An Educational System can no longer be a monopoly of the conventional education institutions. Education in a knowledge society has to permeate the entire society. Employing organizations of all kinds --- business houses, government agencies, and non-profit organizations--- must become institutions of learning and teaching as well. Schools, increasingly, must work in partnership with employers and employing organizations. "As knowledge becomes the primary source, the social position of an educational system as producer and distributive channel of knowledge and its monopoly are bound to be challenged. And some of the competitors are bound to succeed.

9. Information and Knowledge Support Systems

With the cumulative advances of the technological revolutions, the western society has built up a strong and powerful system of information and knowledge Support System. The information Chain from the point of generation to the point of use, that provides an effective link to every point in the chain, has been established. Institutional mechanisms, tools and techniques have been developed to disseminate, distribute, provide accessibility, document delivery, etc. The newly created knowledge, dovetailing it with already existing knowledge has also pooled up to create a reservoir of knowledge. "Impelled by the phenomenal proliferation of computers and information devices, closely linked to an explosion of processing and access speeds, convergence of images, sounds, and writing on one digital medium, and propagated by a worldwide network to satellites and broad band fiber, optic cables, the Information and knowledge Age is already a reality to millions in countries all over the world." Thus everything has been set to the emergence of a knowledge society to advance the people of the western society to move further in their material advancement.

10. Conclusion

After the above study knowledge and its impact are clearly known. To sum up the main idea is to give a panoramic view of Knowledge combining not only Librarian point of view but also a Logician point of view. Second part has done justice to Impact of Knowledge on Education and Information/Knowledge support system. The LIS professionals guide the client to the required information through his expertise of knowledge obtained. This knowledge can be doing a survey methods and by annotations.

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Knowledge Model for PUDULIBNET using National Knowledge Network and NME-ICT Networks

Nagalingam U **Palanivel K** **Nageswara Rao P**

Abstract

Research movement in various fields is increasingly being carried out through inter institution in collaborative approach. This has become necessary due to the increased activity in computationally intensive and data intensive research problems and greater emphasis on numerical techniques for analysis. To achieve these objectives, the approach adopted worldwide has been the extensive use of ICT through dedicated networks created for Research and Education. For this purpose library is become knowledge resource centres they can share the by way of resource sharing. Networking is essential for libraries in Puducherry for coordinating with the Institutions. Resource sharing models of networks in which libraries enter at one point and then more along a continuum, ideally ending in an advanced, integrated knowledge library network model for libraries in Puducherry for sharing the resource by way of cooperative management. The Pudulibnet model is proposed to implement for the betterment of the end users and a Knowledge model for PUDILIBNET using NKN and NME-ICT network proposed.

Keywords: PUDULIBNET, NME-ICT networks, Knowledge network, Knowledge

1. Introduction

Research and Development activity world-over in various fields is increasingly being carried out through inter institution and trans-country collaborative approach. This has become necessary owing to the increased activity in computationally intensive and data intensive research problems and greater emphasis on numerical techniques for analysis. Besides, the infrastructure needed for the front-end, cutting-edge research and experimental simulation, requires investment which is beyond the means of several research institutions and its duplication, in any case, is economically unviable. The key ingredients in this approach are *consultations Data sharing,* and *Resource sharing.* To achieve these objectives, the approach adopted worldwide has been the extensive use of ICT through dedicated networks created for Research and Education. In most countries, the onus of such front-end research and propagation of education is a state responsibility and such networking efforts are invariably supported by the state with funds being provided either directly or through the institutions involved.

2. Networking for Pondicherry Region

The unique Union Territory of Puducherry comprises of four scattered regions namely Puducherry (formerly Pondicherry), Karaikal in Tamil Nadu, Yanam in Andhra Pradesh and Mahe in Kerala on the West coast. The Union Territory of Puducherry offers quality education with excellent physical infrastructure and almost cent present literacy level. The Puducherry (formerly Pondicherry) is giving more importance for developing higher education. Many academic and research institutions have been established in Puducherry to promote better education in Puducherry. Several courses are being offered by these institutions.

3. Creation of Library Network for Pondicherry Region

In view of the emergence of number of networks at local, regional and national level such as MALIBNET, DELNET, INFLIBNET, CALIBNET etc., and in view of the possible benefits that emerge from the successful functioning of those networks which benefit the participant, libraries and in view of the librarians willingness to join the library network as revealed in the survey, it is suggested that the libraries in Pondicherry region shall form a group on network basis.

3.1. Objectives

The major objectives of the proposed PUDULIBNET are;

- To promote sharing of resources among the libraries in Pondicherry region through networking for maximum use of resources and better facilities for users.
- To avoid duplication in acquisition of reading materials especially in case of subscribing e- journals.
- To encourage all the members of PUDULIBNET to share their library resources.
- To co-ordinate efforts for suitable collection development policy and reduce unnecessary duplication wherever is possible.
- To develop a wide range of information services and to enhance the quality of services using latest available technologies.
- To evolve international standards and uniform guidelines in techniques, methods, procedures, hardware, software and services and to promote their adoption.

4. Pondicherry library network

It has been proposed to connect all libraries in Pondicherry region a network viz., PUDULIBNET. The PUDULIBNET will also act as gateway to all these libraries exists in Pondicherry. Each library in Pondicherry is connected to the PUDULIBNET, for which the nodal centre is Pondicherry University. By providing a separate user login ID, users can login in to Pondicherry University Library Server and can view all the information resources available in the proposed network. Each library in Pondicherry region can share the resources through nodal centre or between among themselves. The benefits of the proposed network (PUDULIBNET) are as follows:

- Maximum access to information at least cost to all the participating libraries.
- Speedy access to information to the users.
- Possibility of providing of the additional services such as content page, select bibliographies, trend reports and article indexing to the users.
- Facilities for easy inter-library loan and document delivery service (DDS)
- Avoids duplication of technical work thereby reducing the manpower requirement or enabling the libraries to provide more user services with the minimum library staff.
- Explore the possibility of weeding out the out-dated sources by maintaining a centralized storage system for texts, documents that would be required in a near future.
- Create healthy environment by motivating the staff to be competitive with the other participating libraries to provide services to the users.

- Explore the possibility of training the manpower to meet the future requirement in information handling and dissemination.
- Preparation of web based Co-operative Online Public Access Catalogue (COOPAC).

This prototype model would facilitate easy and direct access to information from the centralized bibliographical databases housed at the nodal center. The regional centre libraries also interact mutually for exchanging of the required information. Participating libraries can establish link with the regional centre to access resources of nodal centre.

The PUDULIBNET shall consist of the centrally located computer configuration with bibliographic databases of all the participating libraries collection of various types also supported by technical supervision and user services unit. Linkage can be established with other already existing library and information networks of the country like ERNET, NICNET, INDEST, DELNET, INFLIBNET, (UGC-INFONET) and others Networks.

4.1. Services

The services are envisaged by the PUDULIBNET can be start and executed from basic services such as exchange of bibliographic data, Inter library loan, Document Delivery service and Uniform serials and acquisition system to achieve uniformly and compatibility for greater and easy of access to all kinds of resources and services.

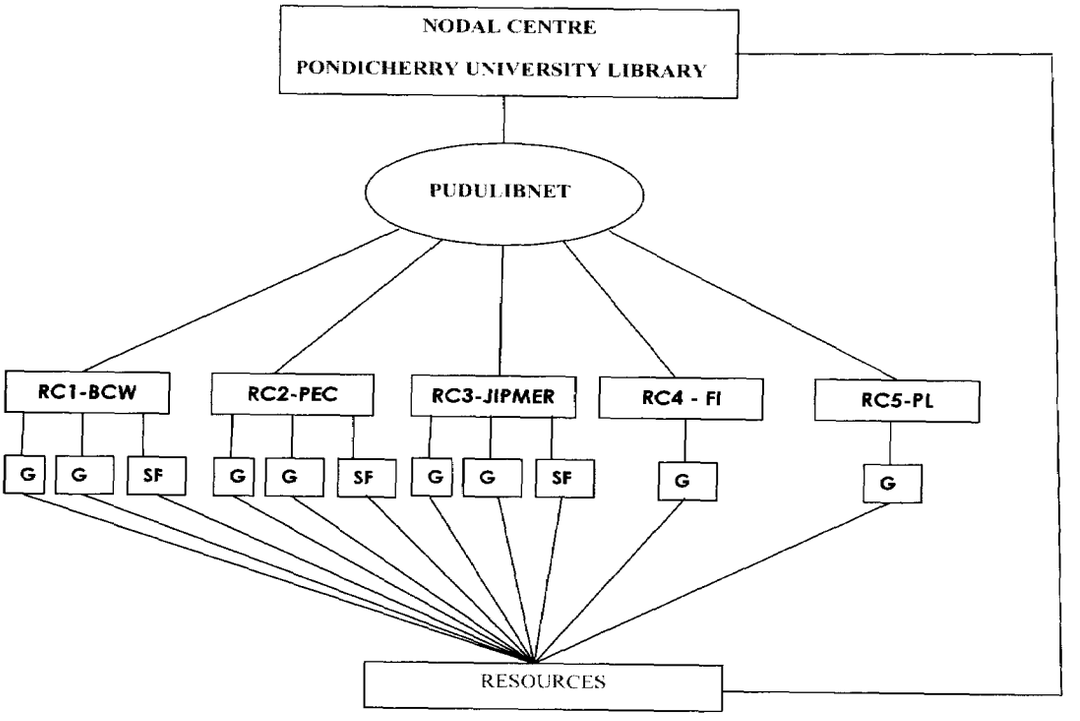
4.2. Processes logic

The process logic of PUDULIBNET is given below:

- Considered and studied the existing networking systems such as DELNET and INFLIBNET.
- Identified the requirements for all types educational institutions located in Puducherry region
- A prototype model was designed and proposed for Puducherry region.
- This model attempts to provide network connectivity to all Libraries established by educational institutions and Government of Puducherry.
- Implemented the prototype model with Web server along with domain name

4.3 Work flow of PUDULIBNET

The Figure 1 shows the proposed network model for libraries in Puducherry. The model would acilitate easy and direct access to information from the central bibliographical databases housed at the nodal centre. The regional centre libraries shall also interact mutually for exchanging of the required information. Participating libraries can establish link with the regional centres to access resources of nodal centre.



RC – REGIONAL CENTRE G – GOVERNMENT GA – GOVERNMENT AIDED SF – SELF FINANCING

Figure-1: Work flow of Networked Library Model

RC – Regional Centre, **G** – Government, **GA** – Government Aided, **SF** – Self Financing, **BCW** – Bharathidasan College for Women, **PEC** – Pondicherry Engineering College, JIPMER – Jawaharlal Institute of Post Graduate Medical Education and Research, **FI** – French Institute, **PL** – Public Library

RC1 – Arts and Science **RC2** – Engineering and Technology
RC3 – Medical and Paramedical **RC4** – Research Institution RC5 –Public Library

4.4 Knowledge network model using NKN/NME-ICT

Figure 2 shows the knowledge network model for PUDULIBNET using NME-ICT. In this model all users are connected to either NKN or NME-ICT network. The users can share their resources through the core network. In this model, the main role or service is of central server. The central portal server provides single window access to the user. User interface is based on the keywords related to meta-data. The work flow of the model is given below:

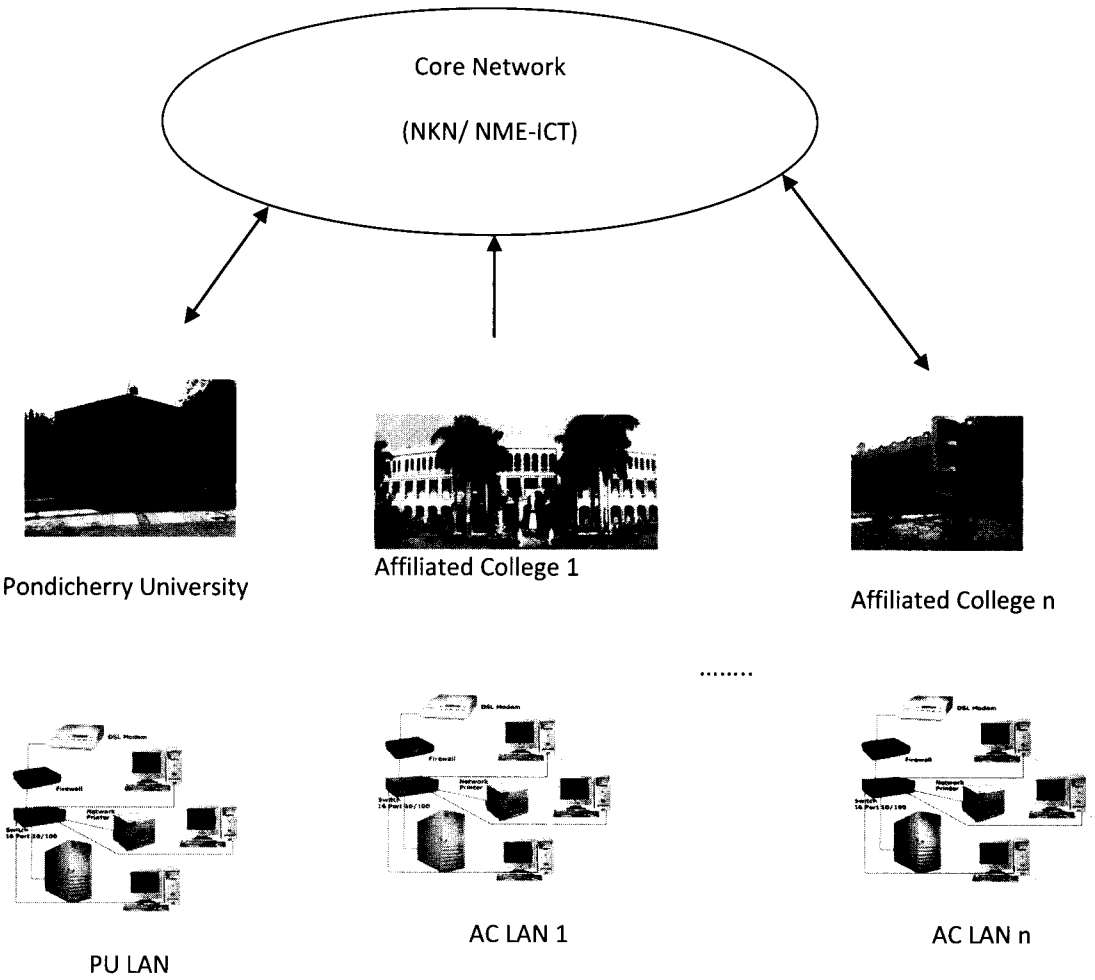
- User id and password will be given to all the participating institutions.
- The user can login into the central portal server.
- The security checks the user whether authorized or not. The authorized user sends a query in any language to the central server.

ACLAN1-Affiliated college local area network

- The central Portal server translates the query to the requested languages. Portal server passes query to the searching service.
- The Searching checked with indexing services. The Searching do the ranking on the outcome of the indexing service. Searching services passes the response to the central server.
- The Portal server reformulates the ranked response according to the format expected by primary servers.
- Various application servers execute query provided by the central server and return results.

- The central Portal server returned results to user after translation, summarization, filtering etc. of the content as required or the link to the content.

Figure -2: Network model for PUDULIBNET using NKN/NME-ICT



PULAN-

Pondicherry University Local Area Network

5. Implementation of the proposed PUDULIBNET

The PUDULIBNET will be developed in the following stages:

i. ***At the first stage***, the model of Networking includes the followings:
   - ❖ Interlinking between the participating libraries in Puducherry region.
   - ❖ Five libraries will take initiative to act as Regional centres for coordinating all networking activities in the specific subject areas.
   - ❖ One of the Universities i.e. Pondicherry University Library will act as Nodal centre for coordinating the all participating libraries.

i. ***At the second stage***, the Nodal centre accumulates the information from all participating libraries under PUDULIBNET.

ii. ***At the third stage***, after the networking among libraries in Puducherry region will disseminate information to all libraries which also includes Self financing organisations.
It is suggested that, before the actual implementation of the proposed

6. Tools used for PUDULIBNET

The PUDULIBNET was designed and implemented using the following tools.

- HTML/PHP: Macromedia Dream weaver
- Web Client: Client with most popular operating systems like MS Windows XP/Vista with Web browser facility. Web Server: MS Windows 2003/2008, Linux with Apache Web Server

PUDULIBNET, a detailed system analysis has to be conducted.

The success of this Network depends upon the following factors:

- Having adequate computer facilities.
- Appointment and training of the right personnel for the development and maintenance of the system.
- Design and development of bibliographical databases.
- Existence of an efficient and reliable communication system.

Considering the existing infrastructure facilities, financial resources, manpower and technological aspects, the implementation of PUDULIBNET is considered in a phase manner.

7. Security challenges in PUDULIBNET

The security issues related to any library network viz.Puducherry Library Network, they are Information security, data security, Intrusion Detection System, Authorization, Authentication and Access Control Rights, RFID, Firewalls.

Security privacy and confidentiality are issues of major concern then this type of networking is envisaged. Methods will have to be evolved both at the time of commissioning of the network as well as during operations, to ensure security of data along with privacy and confidentiality. Access to the data from the data centre of a given entity should be under the control of the entity being addressed. An agreement for authentication and authorization with the participation of the connected entries will be required to be firmed up and put in place.

8. Conclusion

In this paper we have given some of the proposed knowledge network model for Puducherry libraries to share the information by way of resource sharing and networking through PUDULIBNET using NKN/NME-ICT. It is evident that a National Knowledge Network interconnecting all universities, all technical institutions, all medical institutions, all agricultural institutions, R&D institutions, all libraries and all Universities with an access network providing up to 100 Mbps connectivity for optimal utilization of resources to give a major push to research and spread of quality education, is required and is entirely feasible.

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Library 2.0: The Social Library

Ragini Sagar

Abstract

The concept of Library 2.0 is borrowed from that of Web 2.0 and Business 2.0 and follows some of the same underlying philosophies. The paper presents an overview of library 2.0 and the range of new and contemporary technological tools and techniques that are used for evolving collaborative environment required for Library 2.0. Further the article highlights the various tools and techniques web 2.0 and its applications in libraries i.e., i) Synchronous Communication: Instant messaging; ii) Content Delivery: RSS Feed, HTML Feed, Streaming Media, Podcasting and SMS Enquiry Services. They represent a significant opportunity to preserve knowledge assets and to enhance the value of information resulting in improved productivity and organizational effectiveness.

Keywords: Web 2.0, Library 2.0, Social networking

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Lokta's Law Revisited: A Critical Study based on Articles on Vinca Rosea Indexed in Pubmed

Mini Devi B

Abstract

The article examines the validity of Lokta's Law on Vinca rosea related articles indexed in PubMed database. Among 4258 authors where the law is applied the expected values are not close to the observed values. Lokta's Law does not fit for the study.

Keywords: Lotka's Law, PubMed, Scientific productivity, Vinca Rosea

1. Introduction

Vinca rosea is an ornamental plant popular in subtropical gardens where temperatures never fall below 5°c to 7°c. It is also cultivated as a warm-season bedding plant in temperate gardens. This species is greatly appreciated for its hardness in dry and nutritionally deficient conditions. It is an endangered plant because of decline in habitat destruction by slash and burn agriculture. Now-a-days it is widely cultivated and is naturalized in subtropical and tropical areas of the world. The herb mostly grows in waste lands and sandly places.

Vinca rosea is an evergreen subshrub or herbaceous plant growing to 1m tall. The leaves are oval to oblong, 2.5-9 cm. Vinca rosea belongs to the family Apocynaceae. The common neames are Periwinkle, Sadabahar, Madagaskar Periwinkle, Rosy Periwinkle, Cape Periwinkle and "Old-maid".

The medical uses of vinca rosea have been discovered in recent times. Root and leaves are used in medicine. Its alkaloids are hypotensive, sedative and have transquilising properties and are anticancerous. The herb has two anti-carcinogenic compounds such as vincristine and vinblastine which have been found to be effective in the cure of various types of cancers especially leukemia. It is very effective in the treatment of diabetes as it has the property to lower the blood sugar. The drug is recommended for high blood pressure patients. The herb has calming properties and also relieves from the depression of central nervous system. Vinca relieves anxiety and helps in relieving muscle pain, wasp stings etc. Herbal remedies made with this herb relieve toothache, memory loss and blood circulation. In traditional Chinese medicine, extracts from the herb have been used to treat numerous diseases including diabetes, malaria and hodyken's disease. Hence the alkaloids of vinca rosea can be used as sedative, hypotensive, and tranquilizer and anti-cancerous. Vinca rosea is used in plant pathology as an experimental host for phytoplasmas (1997). This is because it is easy to infect with a large majority of phyotplasmas and also often has very distinctive symptoms such as phyllody and significantly reduced leaf size (1997).

2. Review of Literature

Alfred J. Lotka (1926) studied author productivity patterns and developed one of the main laws in bibliometrics i.e. in a given area of science, there are a lot of authors who publish only one study, while a small group of profilic authors contribute with a

large number of publications. This premise is the basic of Lotka's Law, also known as Inverse Square Law on author productivity. The law takes the number of authors who have published 'x' studies, according to this universe square law, i.e. the number of authors who produce 'x' studies is proportional to $1/x^2$. Hubert, John J (1977) reported that by using an exact interpretation of the law and by applying a valid statistical test, it can be shown that this data does not follow Lotka's Law.

Voos, Henry (1974) found that the relationship for information science seems to be $1/n^{3.5}$ instead of Lotka's $1/n^2$, and instead of Lotka's 60% producing one paper, in information science the figure tends to be 88% writing only one paper.

Subramanyam (1981) found that the pattern did not confirm to Lotka's results and suggested more work to be done.

3. Objectives

The main objective of the study is to examine the application of Lokta's Law.

4. Methodology

Data was collected form PubMed database (available at http://n/m.nih.gov/pubmed/) of National Center for Biological Information (NCBI), USA. For extracting bibliographical information Medical Subject Heading (MeSH) indexing terms were used. For the study data from 1996 to 2010 were collected using the advanced search feature of PubMed. A total of 4758 records were got through the advanced search. After eliminating irrelevant records, 4258 records exclusively related to Vinca rosea were selected for study.

The Lotka's law is applied to author's productivity is presented in the Table1. From the table it is evident that the observed percentage of authors varied from the expected percentage of authors as predicted by applying Lotka's equation. The chi-square test was further applied to compare the observed values with the expected value of author's productivity according to Lotka's law. The calculated chi-square value (643.05) was more than the Table chi-square value i.e. 18.3, at a degree of freedom of 10, level of significance, $\alpha = 0.05$ is shown in the Table 2. Here the chi-square value was highly significant and Lotka's Law was not applicable to this data.

Table 1: Productivity of authors

No. of papers	Observed no. of authors (a_n)	Observed % of authors $\frac{100xa_n}{\alpha_1}$	Expected no. of authors $an - \frac{a_1}{n^2}$	Expected % of author predicted by Lotka ($100/n^2$)	$\frac{(a_2 - p)^2}{p}$ / p
1	3345	78.56	3345	100	0
2	630	14.80	836	25	50.76
3	128	3.01	372	11.11	160.04
4	67	1.57	209	6.25	96.48
5	43	1.01	134	4.00	61.8

6	19	0.45	93	2.77	58.9
7	6	0.14	68	2.04	56.53
8	8	0.19	52	1.56	37.23
9	4	0.09	41	1.23	33.4
10	3	0.07	33	1.00	27.3
11	3	0.07	28	0.83	22.32
12	1	0.02	23	0.69	21.04
13	1	0.02	20	0.59	18.05
	4258	100	5254		$x^2 = 643.05$

Table 2: Chi-square test on productivity of authors in relation to Lotka's Law

No. of citations (n)	Observed no. of authors as with 'n' citations (Fi)	Expected no. of authors with 'n' citation (Pi)	(Fi-Pi)	$(Fi-Pi)^2$	$\frac{(Fi-Pi)^2}{Pi}$
1	3345	3345	0	0	0
2	630	836	-206	42436	50.76
3	128	372	-244	59536	160.04
4	67	209	-142	20164	96.48
5	43	134	-91	8281	61.8
6	19	93	-74	5476	58.9
7	6	68	-62	3844	56.53
8	8	52	-44	1936	37.23
9	4	41	-37	1369	33.4
10	3	33	-30	900	27.3
11	3	28	-25	625	22.32
12	1	23	-22	484	21.04
13	1	20	-91	361	18.05
	4258	5254			$x^2 = 643.05$

$x^2 > x_\alpha^1$

(df = 10)

($\alpha = 0.05$)

($x_\alpha^1 = 18.3$)

Table 3: Author contribution Vs Number of authors

No. of papers	No. of authors	%
1	3345	78.56
2	630	14.80
3	128	3.01
4	67	1.57
5	43	1.01
6	19	0.45
7	6	0.14
8	8	0.19
9	4	0.09
10	3	0.07
11	3	0.07
12	1	0.02
13	1	0.02
	4258	100

The 3345 authors have contributed one paper, 630 authors have two, 128 authors have three, 67 authors have four, 43 authors have five, 19 authors have six, 6 authors have seven, 8 authors have eight, 4 authors have nine, 3 authors have ten, 3 authors have seven, one author have twelve and one author have thirteen papers to their credit. According to Lotka's Law,

$$F(y^n) = \frac{A}{y^n} = \alpha$$

where ($F(y^n)$) stands for the authors productivity, 'y' number of papers, 'A' and 'α' are constants, considering the equation i.e.

$$F(y^n) = \frac{A}{y^n}$$

when y = I

$F(y^2) = 3345$

$3345 = A/I$

$A = 3345 \times 1 = 3345$

Similarly

$y = 2 \rightarrow F(y^2) = \frac{3345}{2^2} = 836$

$y = 3 \rightarrow F(y^2) = \frac{3345}{3^2} = 372$

$y = 4 \rightarrow F(y^2) = \frac{3345}{4^2} = 209$

$y = 5 \rightarrow F(y^2) = \frac{3345}{5^2} = 134$

$y = 6 \rightarrow F(y^2) = \frac{3345}{6^2} = 93$

$y = 7 \rightarrow F(y^2) = \frac{3345}{7^2} = 68$

$y = 8 \rightarrow F(y^2) = \frac{3345}{8^2} = 52$

$y = 9 \rightarrow F(y^2) = \frac{3345}{9^2} = 41$

$y = 10 \rightarrow F(y^2) = \frac{3345}{10^2} = 33$

$y = 11 \rightarrow F(y^2) = \frac{3345}{11^2} = 28$

$y = 12 \rightarrow F(y^2) = \frac{3345}{12^2} = 23$

$y = 13 \rightarrow F(y^2) = \frac{3345}{13^2} = 20$

Table 4: Values of observed and expected number of authors

No. of papers	No. of authors (observed)	Number of authors (expected)
1	3345	3345
2	630	836
3	128	372
4	67	209
5	43	134
6	19	93
7	6	68
8	8	52
9	4	41
10	3	33
11	3	28
12	1	23
13	1	20
	4258	5254

From the above table it is evident that the expected values are not close to the observed values upto the number of papers. Hence Lotka's Law doe not fit for the study.

5. Findings

Lotka's Law does not find fit for this study.

6. Conclusion

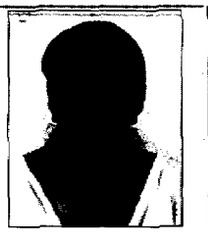
Authors with multiple contributions the observed values deviate considerably from the predictions of the law. This may be due to the differences in pure and applied

science. As an applied field, the contributions came more multipline authors especially from different disciplines.

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Mathematics Research in India: A Scientometric Study

Soumya Rani, G L **Sudhier KG**

Abstract

This study attempts to highlight the Indian research in the field of Mathematics in terms of publication output as per Indian Science Abstract (2004-2008). During the period a total of 123441 records were covered, of which 3473 papers were published by the Indian scientists in Mathematics. Apart from providing an estimate of number of contributions of Indian Mathematics research, the study has identified the contributions of different types of institutions, universities, continent- wise distribution and state-wise, the journals often used etc.

Keywords: Mathematics research, Indian science abstracts, Scientometrics, India

1. Introduction

Mathematics is a science dealing with the logic of quantity, shape and arrangement. It deals with logical reasoning and quantitative calculation. The development of Mathematics up to the 6th – 5th century BC is referred to as the period of the origin of Mathematics. Mathematics is the basis of modern civilization. Today it is virtually impossible to do advanced level work in any branch of science or engineering or some areas of economics and social sciences without the application of mathematics. India has a very long tradition of excellence in mathematics and astronomy, dating back to antiquity. In modern times India has produced much work in both pure and applied mathematics as well as in the related areas of operations research, statistics, computer science and theoretical physics. A study relating to the research in Mathematics is very essential to identify the productivity of institutions, journals, authors, etc. This information regarding the productivity is important in the formulation of library administrative policies. The study also reveals the collaborative trend in Mathematics. Through the study of theses in Mathematics, one can identify the status of Mathematics research in India also.

2. Previous Studies

Many scientomeric studies have appeared focusing the performance in science domains. Nandi and Bandyopadhayay (2011) analysed 73 theses which were submitted in the mathematics department of the University of Burdwan during 1960-2000 and 269 articles were produced based on them for finding the trend of research , article productivity, choice of journals ,authorship pattern, and most prolific authors with their credit and impact. Gupta, Kshitij and Singh (2010) analysed research output of computer science in India during 1999-2008. Bala and Gupta (2010) attempted to analyze the research profile of biochemistry, genetics and molecular biology research in India during 1998-2007. Husain and Mushtak[5] (2010) compiled a paper which focuses on the various publication output patterns of Indian Central Universities, depicting there picture with the different scientometric constructs based on SCI-E via Web of Science.

Kaur and Gupta (2009) examined India's performance based on its publication output in immunology and microbiology during 1999-2008, drawn from *Scopus* international multidisciplinary bibliographical database. Gupta and Dhawan (2008) studied the India's out put of condensed matter physics. Ramakrishnan and Ramesh Babu (2008) in their paper presented a scientometric study of Indian contributions in Hepatitis covered in the bibliographic database MEDLINE for the period 1984-2003. Scientometric analysis of material science research in India during 1993-2001 was carried out by Walke, Dhawan and Gupta (2007). Kademani et. al.[10] (2006) analysed the Thorium research in India. And again they studied the nuclear science and technology based on INIS database (1970-2002). Patra and Chand (2005) studied the Biotechnology research in India. Gupta and Dhawan (2005) conducted a study on Computer science research in India (1994-2001). Sinn[13] (2005) made a citation analysis of Mathematics and Statistics dissertations of 1980-2002 at an Ohio University and compared them with other science disciplines published in the literature. Narang [14] (2004) conducted a bibliometric analysis of 3396 citations appended to 737 articles published in the *Indian journal of pure and applied Mathematics* during the year 1998–2002. The results indicate that the number of contributions is increasing in successive volumes. Cano et al (2003) made a scientometric analysis of theses on Mathematics Education, Spanish University, during the period of 1976-98. Arunachalam (2001) attempted to map India's contribution to the literature of Mathematics and related fields as seen from 11 years (1988-1998) of the *Mathsci* database on CD-ROM. The other studies are: Arunachalam and Umarani (2001), Karki et. al. (2000), Sudhier (1997), Bandyopadhyay (1996), Maheswarappa and Ningoji (1993), Sapp (1989), Verma et. al. (1982).

3. Objectives of the Study

The objectives of the study are separated into two sections and it is given under the following subheadings.

- To identify the year-wise distribution of articles
- To examine the authorship pattern and degree of collaboration of authors
- To identify the various types of institutions engaged in Mathematics research
- To find out the major institutions engaged in Mathematics research
- To identify the continent-wise distribution of Indian mathematicians
- To find out the state-wise distribution of articles
- To identify the distribution of articles in both Indian and foreign journals
- To find out the core Indian and Foreign journals in Mathematics in which Indian mathematicians publish their articles
- To identify the year-wise distribution of theses
- To find out the departments which are engaged in the production of theses in Mathematics
- To study the university-wise distribution of theses based on the supervising teachers.

4. Methodology

An in-depth study of the articles and theses published in the Mathematics section of Indian Science Abstract (ISA) published by NISCAIR (CSIR), New Delhi has

been undertaken for the period of 2004-2008. A total of 4545 articles and 440 theses were identified. The bibliographic details on all papers and theses from India published during the 5 years period were collected from ISA. Each published record was analysed to record the details of the authors, number of authors, contributing institutions, journals, details of theses etc. Scientometric analysis is carried out with the help of statistical techniques.

5. Data Analysis

An attempt has been done to find out the number of Indian contributions in the field of Mathematics compared to the total number of contributions in the ISA and also with the total number of contributions in the field of Mathematics from the year 2004-2008.

Table 1: Share of Indian contributions in the field of Mathematics

Year of publication	Total contributions in ISA	Total contributions in mathematics	Indian contributions in mathematics
2004	23996	923	649
2005	24805	610	398
2006	25542	1125	759
2007	24995	1065	845
2008	24103	1262	822
Total	**1,23,441**	**4985**	**3473**

From the table 1, it is clear that 2007 happened to be the most productive year with 845 Indian contributions (both articles and theses) followed by 2008 with 822 contributions and 2006 with 759 contributions.

5.1 Analysis of Research Papers

5.1.1 Authorship Pattern of Articles

The data given in the table 2 shows the authorship pattern of articles during the period under study.

Table 2: Authorship Pattern of Articles

Number of authors	Number of articles						%
	2004	2005	2006	2007	2008	Total	
Single	133	83	215	187	127	745	24.56
Two	285	168	325	375	398	1551	51.13
Three	98	45	110	175	181	609	20.1
More than three	20	22	28	26	32	128	4.3
Total	**536**	**318**	**678**	**763**	**738**	**3033**	**100**

From the table 2, it is seen that majority of the articles has contributed by two authors that means, they contribute 51.13 % of the total contributions. Articles contributed by single authors are about 24.56 %. The data reveals that multiple authors, that is three or more than three authors' contributions are relatively less.

5.1.2 Degree of Collaboration

Collaborative research has become a well established feature in the field of science and technology. The degree of collaboration was defined as the ratio of number of collaborative research papers to the total number of research papers in the discipline during a certain period of time. It can be expressed in terms of Subramanyam's (1983) formulae.

Degree of Collaboration=Cm/ (Cm+Cs);
Where Cm=Number of multi-authored articles
Cs=Number of single-authored articles published

Table 3: Degree of Collaboration

Sl. No.	Year of publication	Degrees of collaboration
1	2004	0.75
2	2005	0.74
3	2006	0.68
4	2007	0.75
5	2008	0.83
Average		**0.75**

The table 3 shows that the degree of collaboration was high in 2008 and relatively less in the year 2006. It is found that the average degree of collaboration in the period 2004-2008 is 0.75.

5.1.3 Distribution of Articles as per Types of Institutions

The data given in the table .4 shows the distribution of papers as per the types of institutions.

Table 4: Distribution of articles by types of institutions

Type of Institution	2004	2005	2006	2007	2008	Total	%
Academic	427	241	502	650	651	2471	81.47
Private bodies	35	23	58	55	47	218	7.2
Research	28	18	44	43	31	164	5.41
Central Ministry	29	21	38	10	6	104	3.42
State Government	17	15	36	5	3	76	2.5
Total	**536**	**318**	**678**	**763**	**738**	**3033**	**100**

The table 4 provides a breakup of papers by Institutional type. Academic institutions perform the bulk of Mathematics research in India. They contribute 2471 articles during the period 2004 – 2008 followed by Private bodies with 218 articles and Research institutions with 164 articles respectively.

5.1.4 Institution-wise Distribution of Articles

The analysis shows the ten most productive research institutions in the field of Mathematics in India. The table presents the data in the descending order of their research productivity. From the table, it is clear that the University of Rajasthan, Jaipur has the highest productivity with 77 articles followed by University of Delhi and National University, Trichy contributing 58 articles each.

Table 5: Ranked Institutions

Sl. No.	Name of the institution	Number of articles					
		2004	2005	2006	2007	2008	Total
1	University of Rajasthan, Jaipur	9	8	18	24	18	77
2	University of Delhi, New Delhi	12	1	15	13	17	58
3	National University, Trichy	10	4	9	12	23	58
4	JNV University, Jodhpur	11	3	5	15	16	50
5	K G Arts & Science College, Raigarh	10	4	9	20	3	46
6	Annamalai University, Tamil Nadu	5	1	12	13	14	45
7	University of Mysore, Mysore	8	2	10	8	13	41
8	Vikram University, Ujjain	12	0	13	6	8	39
9	Gulbarga University, Gulbarga	3	5	9	10	7	34
10	University of Calcutta, Kolkata	5	4	9	3	9	30

5.1.5 Continent-wise Distribution of research articles

The continent-wise analysis of the data has been made to find out the distribution of research articles that are categorized based on the nationality of origin. The following data enumerates the continent-wise distribution of research articles.

From the table 6, it is clear that research articles from Asian countries contribute more to Mathematics than those from any other country during the period under study. The Asian continent covers 84.99% of the total contributions and the rest of the contributions are shared by other continents.

Table 6: Continent-wise Distribution of research articles

Sl. No.	Continent	Number of articles						
		2004	2005	2006	2007	2008	Total	%
1	Asia	733	452	828	869	981	3863	84.99
2	Europe	32	36	97	58	92	315	6.93
3	North America	32	28	80	40	71	251	5.52
4	Africa	12	13	36	15	32	108	2.38
5	Australia	1	1	1	0	1	4	0.09
6	South America	0	0	2	1	1	4	0.09
Total		**810**	**530**	**1044**	**983**	**1178**	**4545**	**100**

5.1.6 State-wise Distribution of Articles

The data has been collected revealing the State-wise distribution to find out the contributions made by each state. The table .7 shows the state-wise distribution pattern of articles published during the period under consideration.

Table 7: State-wise Distribution of Articles

S. No.	State	Number of articles						
		2004	2005	2006	2007	2008	Total	%
1	Tamil Nadu	70	61	90	130	138	489	16.12
2	Uttar Pradesh	71	61	80	121	112	445	14.67
3	Maharashtra	35	30	36	67	68	236	7.78
4	West Bengal	37	25	70	47	42	221	7.29
5	Madhya Pradesh	65	10	48	49	36	208	6.86
6	Karnataka	32	22	37	53	62	206	6.79
7	Andhra Pradesh	24	22	31	55	72	204	6.73
8	Rajasthan	40	18	29	52	46	185	6.10
9	Gujarat	23	5	68	29	10	135	4.45
10	Delhi	8	6	52	31	35	132	4.35
11	Haryana	25	3	26	18	19	91	3.00
12	Uttarkhand	20	5	12	13	11	61	2.01
13	Assam	8	8	18	13	11	58	1.91
14	Kerala	11	11	11	9	9	51	1.68
15	Bihar	19	4	12	9	4	48	1.58
16	Jharkhand	6	6	5	15	14	46	1.52
17	Orissa	12	4	7	11	11	45	1.48
18	Punjab	12	7	16	4	5	44	1.45
19	Himachal Pradesh	10	7	12	11	0	40	1.32
20	Kashmir	2	1	7	10	14	34	1.12
21	Chattisgarh	2	2	11	6	5	26	0.86
22	Tripura	4	0	0	6	5	15	0.49
23	Sikkim	0	0	0	2	5	7	0.23
24	Meghalaya	0	0	0	2	3	5	0.16
25	Nagaland	0	0	0	0	1	1	0.03
Total		**536**	**318**	**678**	**763**	**738**	**3033**	**100**

The analysis shows that the state Tamil Nadu has made the maximum contribution of 16.12% followed by Uttar Pradesh and Maharashtra with 14.67% and 7.78% respectively. The state Kerala is placed in the 14th position in the table with 1.68%, which is relatively less.

5.1.7 Journal-wise Distribution of Articles

A journal-wise analysis of the articles is carried out for identifying the contributions of journals in the field of Mathematics during the period under study. Ninety five journals were identified which include journals of both Indian and foreign origin. They are ranked on the basis of their contributions.

5.1.8 Distribution of Articles in Indian and Foreign Journals

The articles published in both Indian and foreign journals were identified and analyzed. The figure 2 shows the distribution of articles in Indian and foreign journals.

From the following figure, it is clear that the contribution of Indian journals to Mathematics during the period 2004-2008 exceeds the contribution of foreign journals.

The Indian journals cover more than 86% of articles whereas foreign journals cover only 13.49%.

5.1.9 Distribution of Articles in Indian Journals

Journals of Indian origin have been identified separately. Out of 95 journals identified, 69 are Indian journals. The data given in the table 8 shows the core journals in the field of Mathematics and it is arranged in the decreasing order of productivity. Ten of the most productive Indian journals are being listed in the table 8.

Table 8: Distribution of Articles in Indian Journals

S. No.	Journal titles	Number of articles					
		2004	2005	2006	2007	2008	Total
1	Acta Cienca Indica – Mathematics	131	100	103	250	237	821
2	Far East Journal of Mathematical Sciences	113	84	112	52	233	594
3	Indian Journal of Pure and Applied Mathematics	127	64	46	17	67	321
4	Bulletin of the Calcutta Mathematical Society	59	1	87	51	43	251
5	Indian J. of Mathematics	29	25	28	64	80	226
6	Proceedings of the Indian Academy of Sciences-Mathematical Science	38	19	60	39	42	198
7	Ultra Scientist of Physical Sciences	28	16	56	58	27	185
8	Journal of Indian Acad Math	18	29	22	46	46	161
9	Journal of Indian Math Soc	50	0	32	48	0	130
10	Calcutta Statistical Association Bulletin	9	14	27	9	15	74
11	Others	92	108	103	133	257	693
Total		**694**	**470**	**942**	**767**	**1047**	**3920**

The table 8 indicates that the most productive journal in the field of Mathematics in India is *Acta Ciencia Indica – Mathematics* with a total of 821 contributions followed by *Far East Journal of Mathematical Sciences* with 594 contributions and *Indian Journal of Pure and Applied Mathematics* with 321 contributions.

5.1.10 Distribution of Articles in Foreign Journals

Journals of foreign origin constitute up to 26 journals. The table 9 shows the distribution of articles in foreign journals during the period under study.

Table 9: Distribution of Articles in Foreign Journals

S. No.	Journal Title	Number of articles					
		2004	2005	2006	2007	2008	Total
1	Mathematics Education	75	0	30	32	0	137
2	International J. of Mathematical Sciences	0	0	37	43	18	98
3	Journal of Applied Algebra and Discrete Structures	6	20	10	20	10	66
4	International J. of Agric Statist Sci	19	11	0	6	28	64
5	J Analysis Comput	8	5	0	18	21	52
6	J. of Computational Mathematics and Optimization	6	8	10	18	8	50
7	Int J Appl Math Analysis	0	0	2	18	21	41
8	J Analysis Applic	0	3	2	19	13	37
9	Int Rev Pure Appl Math	0	9	0	23	0	32
10	Others	2	4	11	19	15	51
Total		**116**	**60**	**102**	**216**	**131**	**625**

The table 9 shows the most productive foreign journals in the field of mathematics. The *Journal Mathematics Education* exceeds in contributions than others with 137 articles followed by *International Journal of Mathematical Sciences* and *Journal of Applied Algebra and Discrete Structures* with 98 and 64 articles respectively.

5.2 Analysis of Mathematics Theses

5.2.1 Gender-wise Distribution of Scholars

Table 10: Gender-wise Distribution of Scholars

Sl. No.	Gender	Number of theses						%
		2004	2005	2006	2008	2009	Total	
1	Male	93	63	59	72	65	352	80
2	Female	20	17	22	10	19	88	20
Total		**113**	**80**	**81**	**82**	**84**	**440**	**100**

The data in the table 10 reveals the gender-wise distribution of scholars who have been awarded PhD in Mathematics during the period under study. From the data, it is clear that male scholars share 80% of the total while female scholars share only 20%.

5.2.2 Department-wise distribution of theses

An analysis has been made on the basis of the departments of universities, which contributed theses in the field of mathematics during the period under study. The data given in the table 11 gives the department-wise distribution of theses.

Sl.No.	Department	Number of theses						%
		2004	2005	2006	2007	2008	Total	
1	Mathematics	90	58	66	59	70	343	77.96
2	Statistics	23	22	15	23	14	97	22.04
Total		**113**	**80**	**81**	**82**	**84**	**440**	**100**

The table 11 shows the theses distribution on the basis of contributing departments. From the table, it is evident that the department of Mathematics account for 77.96% of the theses whereas the department of statistics account for only 22.04%.

5.2.3 University-wise Distribution of Theses

A university-wise analysis of theses has been made to find out the percentage of theses contributed by each university. The below table 12 gives the University-wise distribution of theses during the period under study.

Table 12: University-wise Distribution of Theses

Sl. No.	Name of the University	Number of theses						%
		2004	2005	2006	2007	2008	Total	
1	Vikram University, Ujjain	8	4	2	9	4	27	6.13
2	Aligarh Muslim University,	10	2	4	4	6	26	5.9
3	Banaras Hindu University,	5	13	2	3	0	23	5.23
4	Utkal University, Bhuvaneswar	6	2	4	4	4	20	4.54
5	Bhupendra Narayan Mandal University, Mandhipura	8	1	1	8	0	18	4.1
6	Andhra University, AP	4	2	5	1	5	17	3.86
7	Mahatma Jyotibha Phule Rohilkhand University,Bareilly	5	4	1	7	0	17	3.86
8	Maharshi Dayanand University, Rohtak	9	2	2	3	0	16	3.63
9	University of Calcutta, Kolkata	3	0	6	2	5	16	3.63
10	Cochin University of S&T,	5	5	0	4	1	15	3.41
11	Others	50	45	54	37	59	245	55.68
Total		**113**	**80**	**81**	**82**	**84**	**440**	**100**

The table 12 is arranged in the descending order of the contributions made by each university. There are 53 universities which contribute theses in mathematics during the period of 2004-2008. Among them, ten most productive universities are listed in the table. From the table it is clear that Vikram University, Ujjain has the highest productivity with 27 (6.13%) theses followed by Aligarh Muslim University with 26 (5.9%) theses and Banaras Hindu University with 23 (5.23%) theses. More than 55% of the theses were contributed by the 43 other Universities.

6. Conclusion

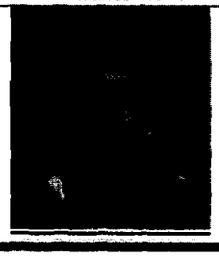
The analysis made on the articles and theses on Mathematics published in Indian Science Abstract exposed the status of Mathematics research in India during the period 2004-2008. It has shown that a total of 4545 articles have been published and 440 PhD

theses were awarded by different Universities in India during the period. But a search for Indian contributions in the field of Mathematics in *Mathsci* database gives 5651 articles in the same period. So the Indian Science Abstract needs to improve its comprehensiveness and scope.

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New Media and Communication Channels for Healthier Knowledge Society: With special reference Andhra Pradesh

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Abstract

This paper addresses the convergence of health communication and new media framed by the historical context of televised health promotion campaigns. In Andhra Pradesh in this new era, health has emerged as one of the most important political, economic, and social issues. A corner stone of these efforts has been the utilization of emerging communication technologies. The wider diffusion of Newspaper and television presented health communicators and organizations like the Ad Council with an opportunity to develop and distribute health promotion campaigns that harnessed the powerful combination of sound and image while reaching extraordinary number of people. The development of the web and news media spawned a chorus of optimism about health communication interventions that echo previous predictions about the role Newspaper and Television as a health communication tool.

Keywords: Newspaper, Television, Communication technologies, Health.

1. Introduction

The model of communication today that it can and should be regarded as a mark of the enduring value of these models in highlighting key elements of that process for information seekers. While field of health communication has changed considerable over the media and the models used in the introducing health education programmers like understanding about the consequences smoking, alcohol consumption, diet and physical activity has been accompanied by increasing efforts to communicate and promote healthy behaviors. Thus healthcare provides, policymakers, the public, and researchers have been confronting the growing importance of individual health decision-making by turning to new media technologies. This has increased the salience of understanding the development of effective health communication practices. A variety of approaches are employed to find health issues, and health information practices, are more likely to discern health information. People who pursue active heath information strategies tend to have healthier outcome than those using passive approaches linked grater levels of health consciousness with active communication channels such as interpersonal communication, print media, and internet sources for health information, whereas passive consumption channels like television and radio were used more frequently by non health-oriented individuals.

2. Source of health communication

Communicating about health occurs in many settings, using different sources. Interpersonal sources such as healthcare providers, family and friends have a long history dating back before technologies facilitated print audio and visual communication. Mass media such as the news media, entertainment, direct to consumer advertising, and public service announcements have a shorter history although they are the focus of much health communication research and practice. New media sources such as Web applications like blogs, wiles, social networking sites and

virtual worlds are more recent sources that have been the focus on attention because of their novelty and potential to transform health communication.

2.1 Mass Media Sources

Mass media channels

- Newspapers and Television
- Radio and Outdoor advertising
- Magazines
- Conference and meeting promotion of health care
- Interactive media
- Direct mail and Bulk mil
- Brochures and Poster and flyers
- Partnership alliances

2.2 Traditional and Media Usage

Traditional and new media use differs among consumers. Therefore, media selection must be based on its ability to provide a culturally relevant environment. Several studies show as increase in media multitasking, or simultaneous media usage.

2.3 Newspaper Articles

The newspaper articles for local and national newspapers, Federal and private-sector agency newsletters, merchant circulars, and consumer magazines can be tailored to the target users. Physical form, again, might be viewed from two different angles: (i) Newspaper vis-a vis other news media and (ii) newspaper and other information products.

2.4 Weekly Magazines

Newspapers provide immediate impact, have high targeted-reach potential, and timely, National and local newspapers can effectively reach each target group in their respective user communities. Consumer magazines offer in-depth product descriptions, pass-along readership, and can be highly targeted.

2.5 Television

Television has audiovisual impact, is the most intrusive, and provides quick reach because its coverage can vary by area, designated market, channel, or network. Television is viewed largely by all target groups. Recently, there have been more opportunities for user-generated ads as some organizations turned to competitions to generate health awareness information. For example, young people were able to submit audio and video-based information about HIV prevention and HIV's impact to MTV's one world and staying live campaigns.

2.6 Radio

Radio is a heavy frequency medium. It provides good localization spot coverage for the city/Metropolitan area. Radio has the ability to reach target audiences effectively in various formats and in different languages.

2.7 Interactive Media

The spotlight focused on interactive media. What different interactive media

from more traditional forms of advertising is that it is more buyer-initiated. The communication process begins when the user requests specific information about a product or service, playing a direct part in communication process and choosing with when the massage is delivered and, to some extent, the actual content of the massage.

2.8 Web - based

Web –based health information have existed for many years. Health communication organizations have begun using new media to distribution outlets. Thus far, the production and distribution comprehensive health web sites has been dominated by a small number of providers including WebMD, Everyday Health AOL Body, and RevolutionHealth .com. You Tube, My Space, Facebook, Flikr and other Web sited offer a new outlets for user generated information will be provided.

3. Sources of Health Communication

Communicating about health occurs in many settings, using different sources, interpersonal sources such as healthcare provides, family, and friends have a long history dating back before technologies facilitated print, audio and visual communication. Mass media such as the news media, entrainment, direct to consumer advertising, and public service announcements have a shorter history although they are the focus of much health communication research and practice. New media sources such as Web applications like blobs, wikis, social networking sites and virtual worlds are more recent sources that have been the focus on attention because of their novelty and potential to transform health communication.

4. Interpersonal Sources

Interpersonal communication is a highly trusted and often effective sources of health information provided by physicians is a strong predictor of behavior changed that doctor-patient communication characterized by greater patient participation was associated with better health outcomes. Communication between family and friends is a mechanism for providing support, information and guidance on health habits and health decisions. Family roles have been associated with both positive and negative self-management practices among people with diabetes. While people often cite family and friends as an important and trusted source, they can serve as source of poor decision-making, especially when cultural or social factors override good health practices. For instance, Hispanics often cite family as their most trusted source of health information.

5. Mass Media Sources

Mass media has frequently focused on health in television because of the large audiences it commands. However, it not necessarily a source of useful heath communication, because only a small proportion is intended to motivate individual behavior changes and has been associated with little to no health behavior change media effects are most prevalent on reinforcing or strengthening existing behaviors or attitudes. The beginning of television, the early research evidence suggested modest effects that were mediated by audience characteristics and environmental factors. Mass media uses health issues to base content in news and entertainment media although the

quality and utility of such information has been questioned because health content does not necessarily correspond to actual health problems and information is often incomplete or inaccurate. News media frequently frame health communication in terms of a treatment based biomedical models. News media reports about medications are sometimes incomplete, misstate journal findings, and researches.

6. New Print Media Sources

The pool health communication sources exploded with the appearance of the web and applications such as email, websites, and chat rooms. There are different definitions of new media but it typically refers to communication material that uses applications such as blogs, social networking sites, social bookmarking, wikis, virtual worlds and other applications that enable sharing and collaboration.

Statement showing the publication particulars regarding health in Telugu News papers

SL	Name of the Newspaper	Day on health special	Name of special feature
1	Andhra Bhumi	Saturday	Youva
2	Andhra Jyothi	Thursday	Open dais
3	Andhra Patrika	Sunday	Life
4	Eenadu	Friday	Arayagam
5	Prajasakthi	Tuesday	Raksha
6	Sakashi	Saturday	Health Dairy
7	Surya	Monday	Ayosh
8	Vartha	Saturday	Nadi
9	Visalandhra	Saturday	Manaswani

New media can make important contributions to collaboration among health professionals, patients, caregivers, health organizations, universities, researchers, and policy makers through linkages that facilitate knowledge management and diffusion especially for disseminating systematic reviews, practice guidelines, best practices, continuing education, policies, or health advice. Some of the underlying issues concerning the feasibility of new media, particularly virtual worlds, as a health communication source include whether individuals are receptive to messages delivered within virtual worlds and whether information is received and processed in the context of our real world identities or in world' avatars.

7. Conclusion

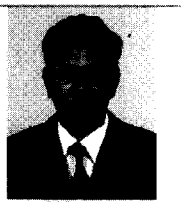
The analogies between television and new media and further described how health communication can leverage new media. The field of communication encompasses a wide range of very different and often uninterested new models. Health contest-based gaps in the field like the one between mass media and interpersonal communication have been equated to those of communication channels. It may be that complex model of the communication process that bridges the theoretical and practical orientations of interpersonal, organization, and mass media perspectives can help to bridge this gap and provide something more. However, as is currently case, the real problem confronting health communication practitioners and policy planners is not the

absence of information is being able to provide exposure to relevant messages that will contribute to desired health behavior changes and outcomes.

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Role of ICT in Building Knowledge Society

Kulwinder Kaur

Abstract

ICT is a powerful tool which can help in building knowledge society. The paper describes about the knowledge society, the role of ICT in different sectors and role towards building knowledge society. This paper also gives information about the basic requirements and problems being faced by ICT to build knowledge society and finally there are some suggestions about the importance of ICT in building knowledge society.

Keywords: ICT, Knowledge society, Globalisation, Education, People participation

1. Introduction

Today the world is shrinking into a global village and we are living in an era of globalisation where there is interchange of attributes among different societies. Globalisation is the growing integration of various countries to the world economy. The pace of process of globalisation is increasing day by day and this is possible with the advancement of ICT which overcomes the geographic barriers between different parts of the world. ICT made it possible for the people to interact and communicate beyond the geographic boundaries. This accelerated the growth and development of knowledge society. Knowledge Society is a society where knowledge is the power that advances the material well-being of a society. Here knowledge assumes the central role in bringing about a radical change in societal progress. In this Society, it has been observed that human knowledge is the source of power that has been instrumental in ushering astounding changes in society. Different authors have named this emerging new society differently. As: the Post-industrial Society, the Third Wave, the Information age, the Electronic Era, Scientific-technological revolution, Information Society and so on. According to Alvin Toffler in the Third Wave (1980) the first wave was driven by physical labour, the second wave by machines and blue-collar workers and the third by information technology and knowledge workers. The pace and explosion of both information and technology has reduced the concept of space and time. ICT is the most powerful tool for change in all the spheres of life. Information and technology is very important but not without communication because it is communication which reduced the distance for the transmission via different modes.

2. Knowledge society: A conceptual framework

The term 'Knowledge Society' generally refers to a society where knowledge is the primary production resource instead of capital and labour. It may also refer to the use certain society gives to information: a knowledge society 'creates shares and uses knowledge for the prosperity and well-being of its people'. The concept of a 'Knowledge Society' is often confused with that of an 'Information Society'. The latter is, however, considered more limited, as the application of knowledge to data creates information, and information has to be activated or generated by knowledge. Information is the codified result of observation, but knowledge entails the capacity to act (Stehr, 2001)

UNESCO argues that progression from Information Societies to Knowledge Societies requires that 'use of ICT must be linked to the recognition that knowledge is the principal force of the social, political, cultural and institutional dimensions of development, founded on human rights.

3. Role of ICT

3.1 Trade and Commerce

In the era of ICT, the concept of globalisation is a common phenomenon where ICT break all the walls and boundaries .therefore of trade and commerce is not an exception. The traditional system e.g. barter system and physical verification become outdated and concept of e- commerce, e-trade and e- marketing becomes common. With the advent of ICT the physical barriers eliminated and time, space and labour does not remain a problem. Beside this e- tendering, e- procurement, online bidding, online marketing, online shopping etc. Are only possible with ICT.

3.2 Education

For development of any country it is important that its education system should be strong. For that we have to reduce illiteracy, digital divide so that people can participate in daily solving problems. For building growing economies like India as knowledge society it is very important to aware people, for that there is a need of education and literacy and for country like India where about 72% of total population of India lives in villages' education can only be provided at the door step of people with the help of ICT. With ICT, knowledge is not constrained by geographic proximity, and offers more possibilities for sharing, archiving, and retrieving knowledge. In addition, the knowledge society and widespread use of ICT generates a need for new digital skills and competences for employment, education and training, self-development, and participation in society. ICT has potential to widen access to educational resources, improve the quality of learning, and improve management efficiencies of the education system. It is important to note that ICT use in education and development to build a knowledge society is not simply about teaching 'ICT literacy' – i.e. learning to operate the technology – but also about building higher-order skills, such as knowing and understanding what it means to live in a digitized and networked society and use digital technology in everyday life.

3.3 Agriculture

We are living in an agrarian society and our economy is agriculture based. There is sufficient land but still we are dependent on traditional practices and methods. So there is immediate need of educating the farmer about latest tools, techniques and practices. Here ICT is playing and can play a vital and very important role by providing extension services, weather forecasting, soil testing services, online information to farmers by expert, improving market access. This will help farmers not only to improve their production but increase their own capacities and reduce social isolation. This paves the way towards their better participation and interaction and hence their active participation in the development of knowledge based society.

3.4 Governance

Since time has been changed, and there is greater participation of people in all types of policies and plan formulation of government. Here politics administration, bureaucracy needs much exposure to interact and share with common citizen. ICT plays an ice breaking role and helps to interact system and citizens with each other by breaking all barriers. The concept of e- governance and good governance are common buzz words where system is going to become hi-tech, low corrupted, high transparent, greater accountable, with speedy work and greater participation of people. Government of India has started several programs and launched its websites to make e-governance as a practical program. This is one of the major steps taken by Govt. of India to build knowledge society where people can come in direct contact with government irrespective of language and geographic barriers and their ideas, suggestions are taken into consideration in policy making.

3. Basic Requirements for ICT to build knowledge society

- First of all there is a need of skill development among learners so that they can think critically, access and evaluate things effectively.
- Development of attributes of knowledge society among learners.
- Outsourcing of skilled and professional people to contribute towards the building of knowledge society.
- There should be encouragement to research and development activities which will provide new ideas and innovations and contribute towards the building of knowledge society.
- Development of sufficient infrastructure so that more and more people should get the benefit and hence participate in decision making process.

4. Problems

- In developing country like India there is poor execution of programs due to which the ICT services could not reach at the grass root level which adversely affect the developmental process.
- Illiteracy is one of the major barrier which rise to fear of technology and unawareness among people and which become the important reason for non-participation of the people in developmental process and hence towards building of knowledge society.
- Non uniformity in the expansion of ICT due to various reasons like geographic and demographic vastness of country like India.
- Due to digital divide there exist a unique type of gap between IT rich and IT poor people due to which people from all strata do not make their presence towards the building of knowledge society.
- Lack of infrastructure and low connectivity and very less bandwidth is also a matter of concern
- Lack of political will to spread the uniform IT education and low investment in this sector
- Financial constraints like lack of infrastructure, material and resource development is also big problem in expansion of ICT and hence in development of knowledge society.

5. Suggestions

- ICT is the present day need of the society which breaks the walls of isolation, geographical, political & physical barriers to become globalised .So our effort should to promote IT awareness among people.
- A country like India where geographic, cultural, religious and other types of diversity exist, here ICT is the most powerful tool to bring all factors in one combined way to meet the goal of the knowledge society.
- Our resources are limited, our demands are increasing, here ICT can play an efficient and effective mode of communication and interaction to fulfil the needs of people and move towards knowledge society.
- ICT is playing a crucial role in exploring and preserving the rarest of our ancient knowledge which is explicit as well as tacit knowledge which in turn will help in dissemination and building of knowledge for coming generations.
- In knowledge society there are different areas like agriculture, industry, education. administration, military, space, medicine etc. which are knowledge based and they can further be modernised by using ICT.
- Today we are experiencing new innovations in the field of ICT e.g our education system has become hi tech with smart classes, e- learning, e- examination etc. ICT can play vital role in the field of education and in developing knowledge society in country like India.
- In our country we have lot of ancient, cultural and other past material which is still lying in the libraries and need publication so that the hidden knowledge become public. ICT can digitise such material and enable easy sharing with researchers and scientists for further research and development.

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Role of Knowledge Managers in the Digital Era

Prabhavathi D

Abstract

Digital technology has dramatically changed the way in which academic and research libraries function. An attempt has been to explore the changes that are apparent in digital libraries due to the impact of information and communication technologies. The article examines the new frontiers of the library profession in the digital era arguing that professional librarians, in their role as knowledge managers, will be even more essential than before. Further stresses the skills of a digital librarian with a note to be more dynamic and technologically sound in character and willingness to accept the change as and when warrants.

Keywords: Digital library, Knowledge management, LIS Professionals.

1. Introduction

Knowledge is not merely to know about new things but also about existing ways of doing things on order to gain new insights to conserve, economize and achieve ever higher efficiency and about all secure the future of mankind. The knowledge can be divided into two types, i.e., tacit knowledge and the explicit knowledge (Polanyi, 1973). Tacit knowledge consists of hands-on skills, best practices, special know-how, heuristic, intuitions, and so on. Tacit knowledge is personal knowledge that is hard to formalize or articulate. Explicit knowledge enables the organization to enjoy a certain level of operational efficiency and control. It also promotes equable, consistent organizational responses. Both, these forms of knowledge can be found in any organization. The organization however, is skilled at continuously expanding, renewing, and refreshing its knowledge in all categories. The organization promotes the learning of tacit knowledge to increase the skill and creative capacity of its employees and takes advantage of explicit knowledge to maximize efficiency. In effect, the organization has acquired a third class of knowledge – meta – knowledge – that is used to create and integrate all its intellectual resources in order to achieve high levels of performance (Kim,2000).

2. Digital Library Environment

Users' need will continue to be what they long have been. Users will want information reliably locatable and easily accessible. In the electronic environment the need for access tools will be more evident. Users will expect information to e available that was placed in the library's care a long time ago; and they will expect that the integrity of the information they get from the library will be assured (Graham, 1995). This clearly indicates that, even the emergence of information and communication technology, Dr. S.R. Ranganathan's fourth law 'Save the Time of User' becomes more relevant and specific. Even the management views the changing virtual environment as an opportunity to reduce costs of libraries and provide cost effective for optimum utilization of information resources in an electronic format. Technology, with its dual edge of promises and threat, has changed forever the way research libraries function. The much – heralded digital library will exists in cyberspace, providing the riches of information repositories to anyone, anywhere, at any time.

Digital libraries are electronic libraries in which large numbers of geographically distributed users can access the contents of large and diverse repositories of electronic objects, networked text, images, maps, sounds, videos, catalogues of merchandise, scientific, business and government data sets they also include hypertext, hypermedia and multimedia compositions (Yerkey and Jorgensin, 1996).

3. Role of Knowledge Managers

With the emergence of digital library, it is important to address the role of the library professional in the transition from traditional to virtual environment. The role of the librarian during this transition would be to : i) Identify, select and collect this pertinent electronic source; ii) Organize and tag information and thereby create metadata; iii) Navigate the "Data Warehouse"; iv) Create information and people locators; v) Provide access to rich information; vi) Utilize Internet technology for managing information overload; vii) Develop search tools and locator concepts; viii) Preserve for posterity; ix) Evaluate the use of electronic resource at regular intervals; and x) Adopt a regular weeding policy. The major roles of knowledge managers in the changing digital environment are summarized below.

3.1 Knowledge Innovation Management

It refers to the management of the production, diffusion and transfer of knowledge as well as the network systems constructed by related institutions and organizations. It includes aspects, namely, theoretical innovation management and organizational innovation management.

3.2 Developing Digital Research Collection:

The challenges of collection development in the digital information, Internet and print materials have to e kept in mind. It is the librarian's duty to know which additional sources can be queried to make a search as complete as possible by identifying the bibliographical tools that helps in locating information as well as technological skills.

3.3 Store and Organization

Knowledge Managers mental models also affect the way in which they react to outside knowledge, small firms are more ready to embrace technology when they have a good group of the importance of information management.

3.4 To organize the Overloaded Information:

It is known fact that, traditionally, librarians have organized and managed information resources through classification schemes. The retrieval of information relevant to a user's enquiry has been facilitated by standardized methods of describing resources, such as MARC and CCF. Information overloaded is not a new phenomenon especially in this Internet world and the potential for it existed ever since information became an important input to any human activity.

3.5 Knowledge Application Management

Libraries should also attach importance to provision of services for people to acquire knowledge and achieve maximum functions and efficiency of knowledge

information. Therefore, knowledge services based on high-speed information networks should be carried out by.

3.6 Digitized Knowledge Services

The service systems such as information dissemination, information search and special supply of information; quickening the creation of digitized libraries; studying the methods, means and techniques of information distribution and search with the internet as the base and web techniques etc. may be created for user-oriented information.

3.7 User Education

User education ad orientation has been long slogan for the library and is integral part of library acting as a teacher to the user community and emergence of virtual environment, still makes this concept more significant. Knowledge Managers need to play pivotal role in imparting how to use tools of the digital library to locate the desired information.

4. Skills of a Knowledge Manager

The traits should be able to pick up new skills as needed to create and manage digital library collections and services. No one likely will have all of the following skills ad experience, nor will most library staff require all of the. Some skills may be taught in library schools, while others must be learned elsewhere or on the job. In general, it is advisable for a digital librarian to possess the following characteristics for effective ad efficient management of a digital library.

4.1 Cataloguing and Metadata

Developing research tools for assisting users to locate desired information digital librarians often build search systems, perhaps to create a database of digitized images, or to support a directory of Internet resources. To do this effectively, they must be familiar with a variety of tools, from simple and easy indexing or search systems to complex relational or object-oriented database systems. However, cataloger's in-depth knowledge is not that required but digital librarians must understand the various ways in which metadata can be aware of pertinent standards such as MARC, AACR2, Dublin Core.

4.2 Imaging Technologies & Markup Languages

Digital librarians typically capture digital surrogates of physical items for example, books, Journal articles, manuscripts, or photographs. Therefore, they must be aware of the various ways in which such surrogates can be captured and the respective benefits and drawbacks of each technique. Digital librarians must be familiar with the typical manipulations required to edit an image and save it in different formats. This may require proficiency with software such as MS-Office, Acrobat Reader, Adobe Photoshop, optical character recognition (OCR) and markup languages like HTML, SGML, XML, etc.

4.3 User Interface Designer

User interfaces like Visual Basic, as a front-end tool for developing user interface design is required. Some digital librarians may have this talent, but proficient ones will know their limits and seek help from an expert information architect or graphic

designer when needed and should be able to write the functional specifications and work with other professionals to achieve the desired goal.

4.4. Programming and Internet Skills

Digital librarians, by and large, do not need to be programmers, but they should know at-least one programming language to understand the logic of programming. This will definitely strengthen their ability as a digital librarian. The knowledge managers are now termed as Internet Librarian or We Librarian. Thus, a digital librarian must e well versed in web technology, which may mean everything from HTML codes to CGI programming or else to have basic knowledge to desire to deliver a digital collection.

5. Challenges to Knowledge Managers

5.1 Overload of Information

Many libraries have accepted the benefits of capturing and sharing their information and knowledge. They have implemented new procedures and new systems, often involving database technology, to assist in this process. However, in many libraries the knowledge warehouse is now full. New knowledge gathering systems are often not accompanied by clear policies as to what to capture and when or how to update it.

5.2 Staff Incentives

Staff within a library must be given extra incentives for knowledge sharing as they work hard for providing knowledge to its users (Dhiman, 2002). A common complaint from employees is that they have no time for knowledge sharing. This seems to be an additional task in an already hectic schedule rather than an inherent part of their business practices. So job descriptions may have to be redesigned to reflect that effective knowledge collection and use are an intrinsic part of the job.

5.3 Lack of Marketing Strategies

Many libraries when implementing a knowledge management program have focused on improving their internal and procedures. To a certain extent, for all services this will improve competitiveness by reducing expenditure, increasing turn around times, and improving productivity. But, many libraries have missed opportunities to marketing the knowledge they are now seeking to manage.

6. Conclusion

Librarians are professionals trained in the collection, organization, maintenance, retrieval and dissemination of information and as such will probably play a significant role in the virtual library that is not too different from the role that is being played in the print-based library. But it does not mean that, they can still manage the show with the traditional skills and knowledge. No.., just not possible, they need to update their skills as and when demands and gain sound knowledge about the technological gadgets involved in processing and dissemination of information. Thus Knowledge Managers should be considered tools to facilitate this transition.

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RSS: It's Application in Libraries and Information Centers

Bapte Vishal D

Abstract

The paper focuses on the basic concept of RSS and how to use it. An attempt is made to classify the different RSS readers available for multiple operating systems. The paper also narrates various advantages and disadvantages of using RSS feeds. Finally appeal is made to make use of RSS in providing library services by pointing out some of the probable areas of application. However, further research is required on the part of Information Professional as how the present technology can be used to the greatest extent to make library services more effective.

Keywords: Web 2.0, RSS, RSS reader, RSS feeds, Academic library

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Scientific Productivity in the Field of Nanotechnology as Reflected Through the Web of Science, 1999 - 2009: A Scientometric Study

Keshava **Kusugal NB** **Preeti Patil**

Abstract

The paper discusses the scientific productivity in the field of nanotechnology for the period 1999-2009, based on* Web of Science. *The study also investigates the growth pattern of nanotechnology literature and collaboration pattern. The results of the study show that the value of an average Relative Growth Rate (RGR) of article ($R_t(P)$) gradually increased from 0.50 to 1.51. Correspondingly the values of Doubling time of the articles $D_t(P)$ gradually decreased from 2000 (1.40 years) to 2009 (0.46 years). The mean relative growth $R_t(P)$ for the first five years (from 1999 to 2004) indicates a growth rate of 0.80, whereas for the last five years (from 2005 to 2009) it was increased to 1.32. The linear and exponential growth trend is fitted to number of articles for the 1999 to 2009. The present study may be of help for the library professionals in developing strategic plan for management of science and technology libraries.

Keywords: Scientometrics, Nanotechnology, Literature growth, Collaboration measures

1. Introduction

Nanotechnology is the engineering of functional systems at the molecular scale. It covers both current work and concepts that are more advanced. In other words it refers to the projected ability to construct items from the bottom up, using techniques and tools being developed today to make complete, high performance products. Nanotechnology is sometimes referred to as a *general-purpose technology* because of its advanced form it will have significant impact on almost all industries and all areas of society. It will offer better built, longer lasting, cleaner, safer, and smarter products for the home, for communications, for medicine, for transportation, for agriculture, and for industry in general. A key understanding of nanotechnology is that it offers not just better products, but a vastly improved manufacturing *process*. A computer can make copies of data files—essentially as many copies as you want at little or no cost. It may be only a matter of time until the building of products becomes as cheap as the copying of files. That's the real meaning of nanotechnology, and why it is sometimes seen as 'the next industrial revolution' (Harper, 2003). Therefore, in the present paper an attempt has been made to know growth pattern of nanotechnology literature and collaboration pattern through Scientometrics.

2. Objectives of the Study

The main objectives of the study are

- To investigate the nature of growth of articles, exponential, linear and logistic;
- To know the Relative Growth Rate (RGR) of articles;
- To observe D_t (Doubling Time) for the articles to become double of the existing amount;
- To study the authorship pattern;

- To investigate the collaborative research trend in terms of Collaborative Index (CI); Degree of Collaboration (DC) and Collaborative Co-efficient.

3. Database and Methodology

The data for the study were retrieved from the *Web of Science, Science Citation Index Expanded* (*SCIE*), published by Thomson Reuters, by using relevant keywords related to Nanotechnology field. Records pertaining to Nanotechnology were collected from 1999-2009.

To investigate the nature of growth of articles, exponential, linear and logistic were tested. The exponential growth is defined as

$$F(t) = a\, e^{bt}$$

Where

a = the initial size of literature i.e. at time t=o and b, the continuous growth rate is related to the percentage by which the size increases each year.

The logistic has a lower limit and an upper limit or a celling beyond which the size cannot grow and can be represented mathematically as

$$U_t = \frac{K}{1+\mu}$$

Where,

U = expected size of literature

K and μ = constants and t= time.

Similarly, the linear growth is represented as

$$U_e = a + bt$$

Relative Growth Rate (RGR) and Doubling Time (Dt) had been applied. RGR means the increase in the number of articles per unit of time. The mean RGR of articles over the specific period of interval is represented as

$$R_t(P) = \frac{1}{t}\left[\log_e p(t) - \log_e p(0)\right]$$

R_t = Relative Growth Rate of articles over the specific period of time.

$\log_e p(0)$ = Logarithm of initial number of articles

$\log_e p(t)$ = Logarithm of final number of articles

Similarly, RGR of subject's articles has increased in number of articles per unit of time. The mean RGR of subject articles $R_t(SA)$ over the period the specific period of time is determined as

$$R_t(SA) = \frac{1}{t}\left[\log_e p(t) - \log_e p(0)\right]$$

R_t (SA) = Relative Growth Rate of articles over the specific period of time.

$\log_e p(0)$ = Logarithm of initial number of articles

$\log_e p(t)$ = Logarithm of final number of articles

D_t (Doubling Time) has been calculated using the following formula:

$$\text{Doubling Time } D_t = 0.693/R$$

D_t (Doubling Time) is directly related to RGR and is defined as the time required for the articles to become double of the existing amount. If the number of articles in subject doubles during a given period, then the difference between logarithms of number at the beginning and at the end of this period must be the logarithm of the

number 2. We used Napier logarithm and the taken value of $\log_e 2$ is 0.693. Hence, as per this (0.693) and an average growth rate we calculated by what time interval does the Napier logarithm of numbers increase by 0.693. So the Doubling time is calculated as

$$D_t(SA) = \frac{\log_e 2}{R_t(SA)} = \frac{0.693}{R_t(SA)}$$

Here, D_t (SA) = average doubling time of subject articles.

4. Analysis and Interpretation

4.1 Growth of Literature

As the table 1 clearly indicates, the value of an average RGR of article (R_t(P)) gradually increased from 0.50 to 1.51. Correspondingly the values of Doubling time of the articles D_t(P) gradually decreased from 2000 (1.40 years) to 2009 (0.46 years). The mean relative growth R_t(P) for the first five years (from 1999 to 2004) indicates a growth rate of 0.80, whereas for the last five years (from 2005 to 2009) it was increased to 1.32. The linear and exponential growth trend is fitted to number of articles for the 1999 to 2009. The table 1 and figure 2 & 3 reveals that the R^2 value for the exponential trend (0.971) is more than linear trend (0.943), this indicates that the exponential trend is more suitably fitted as compare to linear trend. Further, the exponential trend is fitted to cumulative number of article from 1999 to 2009. The R^2 value for this trend is 0.965, shows 96.5% variation observed from the cumulative number of articles. Further, Mean Doubling Time D_t(P) for the first six years was 0.91(years), and it decreased to 0.53 years in the last five years which shows mean relative growth rate of nanotechnology literature shown decreasing trend. It may be due scattering of literature output in several communication channels which may not completely covered by the Web of Science. The scientists in the field of nanotechnology contribute research literature to many national and international science and technology journals which may not included in the international database like web of science etc.

Table -1: Relative Growth Rate (R_t (P)) and Doubling Time (d_t) of articles in Nanotechnology from 1999-2009.

Year	No. of Articles	Cumulative No. Articles	$log_e 1^p$	$log_e 2^p$	$R_t(P)$	Mean $R_t(P)$	$D_t(P)$	Mean $D_t(P)$
1999	43	43		4.20				
2000	67	110	4.20	4.70	0.50		1.40	
2001	89	199	4.49	5.29	0.80		0.86	
2002	170	369	5.14	5.91	0.77	0.80	0.89	0.91
2003	248	617	5.51	6.42	0.91		0.76	
2004	339	956	5.83	6.86	1.04		0.67	
2005	458	1414	6.13	7.25	1.13		0.61	
2006	540	1954	6.29	7.58	1.29		0.54	
2007	704	2658	6.56	7.89	1.33	1.32	0.52	0.53
2008	944	3602	6.85	8.19	1.34		0.52	
2009	1022	4624	6.93	8.44	1.51		0.46	
Total	**4624**							

R^2 (Linear trend for no. of articles) =0.943
R^2 (Exponential trend for no. of articles) =0.971
R^2 (Exponential trend for Cumulative no. of articles) =0.965

4.2 Authorship pattern

The table 2 gives the details about the authorship pattern with the number of articles contributed by authors in the field of "nanotechnology"

Table-2 Authorship pattern

Years	SA	DA	TA	4&>	Anon	Total
1999	15	04	11	13	00	43
2000	19	09	17	21	01	67
2001	30	14	20	24	01	89
2002	35	35	30	70	00	170
2003	51	38	40	117	02	248
2004	75	67	53	142	02	339
2005	73	89	75	214	07	458
2006	72	117	89	256	06	540
2007	81	131	118	373	01	704
2008	98	137	165	544	00	944
2009	80	194	182	566	00	1022
Total	629	835	800	2340	20	4624

SA-Single author, **DA**-Double Authors, **TA**=Three Authors, **4&.>**-More than Four Authors, **Anon**-Anonymous.

Table 2 reveals the over all authorship trend in the field of Nanotechnology. The data shows that out of the total 4624 articles 3975(85.96%) articles are multi-authored followed by 629(13.60%) single authored and the remaining 20(0.43%) articles do not have any authors. It is very clear from the above table that multi authors' research is predominant in "Nanotechnology" field. Solo research is yet picking up in the area.

4.3 Collaborative Measures

a) Collaborative Coefficient (CC)

Suppose, if a paper has a single author, the author receives one credit; if two, each receives ½ credit and in general, if we have 'n' authors each receives 1/n credits. Hence, the average credit awarded to each author of a random paper is E [1/n], a value which lies between 0 and 1. If '0' is to correspond to single authorship, then the Collaborative Coefficient is defined as:

$$CC = 1 - E[1/n]$$

$$= 1 - \sum (1/j)\, p(N=j)$$

And its randam Σ rate is

$$1 - \frac{f1 + (1/2)f2 + (1/2)f3 + \ldots (1/k)\, fk}{N}$$

Where,

Fj = the number of j-authors research papers published in a discipline during a certain period of time.

N = the total number of research papers published in a discipline during a certain period of time: (excluded anonymous authors)

K = the greatest number of authors per paper in a discipline.

Ajiferuke et al (1998) were of the opinion that the Collaborative Co-efficient incorporates the sum of the merits of both collective index and degree of collaboration. It lies between 0 and 1 (0<=cc>1). Tends to zero as single – authored papers dominate and differentiates among levels of multiple authorship.

b) Degree of Collaboration (DC)

The determine the degree of collaboration in biotechnology, the following formula given by Subramanyam (1983) has been used ;

$$DC = \frac{N_m}{N_m + N_s}$$

Where

DC = Degree of collaboration in a discipline

Nm = Number of multi authored research papers in the discipline published during a year.

Ns = Number of single authored research papers in the discipline published during the same year.

c) Collaborative Index

Collaborative Index can be obtained by total number of authors divided by total number of published articles.

$$CI = \frac{\text{Total number of Authors}}{\text{Total number of Articles}}$$

Where,

CI = It is the number of authors per paper.

Table 3 shows that Authorship pattern and collaborative measures. The collaborative Index for the block period 1999-2004 was 2.76 where as it was increased up to 3.13 during the block period 2005-2009 which shows that collaborative research pattern than solo research; the value of Collaborative Co-efficient (CC) have shown higher (CC) value with more than 0.50, which show greater probability of multiple authorship and the degree of collaboration (DC) has shown increasing trend i.e. 0.76 to 0.89.

Table - 3 Authorship pattern and collaborative Measures

Block period	SA	MA	TP	TA	CI	DC	CC
1999-2004	225	725	950	2620	2.76	0.76	0.073
2005-2009	404	3250	3654	11439	3.13	0.89	0.583
Total	629	3975	4604	14059	3.05	0.86	0.589

SA-Single Author, **A**-Multi Authors, **TP**-Total Papers, **TA**-Total Authors, **CI**-Collaborative Index, **DC**-Degree of Collaboration, **CC**-Collaborative Co-efficient.

5 Findings and Conclusion

The study reveals that the value of an average RGR of article ($R_t(P)$) gradually increased and the values of Doubling time of the articles $D_t(P)$ gradually decreased. The

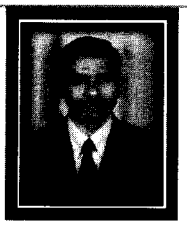
linear and exponential growth trend is fitted to the number of articles for the 1999 to 2009. Mean relative growth rate of nanotechnology literature showed decreasing trend. Collaborative research is predominant in "Nanotechnology" field. The value of Collaborative Co-efficient (CC); the Degree of Collaboration (DC) and Collaborative Index have shown an increasing trend.

Scientometric studies help in the analysis of Research and Development trends; in identifying areas that are most active and those which are gaining importance; identifying the influences and cross fertilizations. The scientific community has recognized nanotechnology as thrust areas for research and human resource development. The study gives a synoptic view of global scientific productivity in the field nanotechnology. The study helps in assessing collaboration pattern in the field of nanotechnology. It also brings out the influence of nanotechnology in all spares of human life.

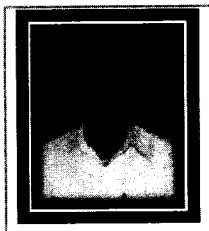
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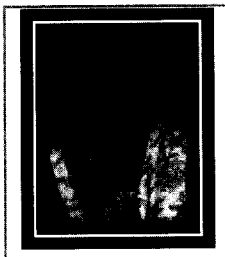
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Scientometric Dimensions of Research Productivity in Universities of Karnataka

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Abstract

In building towards knowledge society, attempt has been made to analyze 3047 research articles published by the research community in the five universities of Karnataka has been reported based on the national consortia portal JCCC@UGC INFONET. The research publications contributed by the academic community between 1969 and May 2011 reveals that University of Mysore has highest research publications with 1100 articles appearing in JCCC@UGC INFONET portal. Authorship trend reveals that single author contribution is diminishing to a great extent with just 3.93% of authors published individually while 43.41% of authors have contributed with four and five authors. The domain wise publications are mainly from science stream with Chemistry, Physics and Mathematics dominated area of research contributions and Library and Information science is at ninth position. Application of Bradford's law reveals that one third of scientific journals published 2409 articles accounting to 79%.

Keywords: Scientometrics, Research productivity, Authorship pattern, Karnataka

1. Introduction

Information is the lifeblood of Research and Developmental activities and the performance in the field of scientific development depends upon the extent of research and development (R & D) work done in the country. The infrastructure required to assist the R & D is generously provided for by three sources - the government, the industry and the university itself. It is stated that India has a very wide base of scientists producing a large number of research projects in the universities are worked on to procure a doctorate or part of research work. The norms of University Grants Commission for recruitment or promotion calls for development of research bent of mind for academic and research community, which has resulted extensive research proposals and publications at national and international level.

The existing literature on scientometric and bibliometric techniques, which have become tools to evaluate the productivity of research institutes, individual researcher and to map the growth of subject have been culled out and studies have been reported over a period of time. Publication and citation counts are being extensively used for evaluation purpose of an institute and some of them are Shubert and Braun (1981); Garg and Rao (1988); Kalyane and Kalyane (1991) Zachos (1991); Gupta, Suresh Kumar and Khanna, (1999); Koganuramath, Angadi and Kademani (2002); Swarna, Kalyane and Vijai Kumar (2002) and Lee (2003). Zainab (2001) compared the perceived adequacy of library resources for research, the formal channels found to be useful in providing information needed for research, the methods used to keep abreast with current research literature, the problems faced when obtaining information required for research with publication productivity of 83 academic engineers and 239 academic scientists from the University of Malaya and National University of Malaysia.

Sudhier and Abhila (2011) analyzed the research productivity of social scientists at the Centre for Development Studies (CDS), Thiruvananthapuram, during 1998-2008 covering 599 research articles published by the CDS researchers, including 38.23% journal articles, 23.54% chapters in books and 15.03% working papers. Kaur and Aggrawal (2010) brought out the results of a bibliometric study of research publications of department of Chemistry, Gurunanak Dev University, Amritsar for the period 2002-2006. Bhatia (2010) studied quantitatively research publications published by the scientists of National Institute of Occupational Health (ICMR) Ahmedabad, India during 2002-2006. Sevukan and Sharma (2010) evaluated the research performance of biotechnology faculties in central universities of India from 1997-2006. The data used for the study were retrieved from two database sources, namely, PubMed, NCBI (National Centre for Biotechnology Information); and ISI Web of Science *database—Science Citation Index Expanded (SCIE). The results indicate that the growth of literature in biotechnology has steadily increased from 15 articles in 1997 to 43 articles in 2006; two-authored publications predominate amongst the pattern of authorship; applicability of Lotka's law is validated from the values n = 2.12, C = 0.669, and D = 0.027 obtained using least square method.*

2. Objectives

The main objectives of the study are to determine

- Research productivity of academic and research community working in universities of Karnataka,
- Authorship patter of research publications,
- Domain-wise publications of scientific productivity,
- Year-wise growth of research publications and
- Preference of research communication channel among research community.

3. Methodology

JCCC@UGC-INFONET is a gateway to comprehensive collection of subscribed journals under UGC INFONET consortia including open source journals, which includes all the e-publications of the academic and research community in and around the world. This portal has been used to identify the research publications of the faculty and scholars covering period from 1969 to May 2011 at five universities in Karnataka namely University of Mysore, Mysore, Karnatak University, Dharwad, Bangalore University, Bangalore, Gulbarga University, Gulbarga and Kuvempu University, Shankarghatta.

Advance search at JCCC@UGC IFONET selecting field - Author Address and University name given within quotes to retrieve the research publications published by the respective research community covering the subject categories built in and is presented in the screen shot.

4. Limitation of the study

Although JCCC@UGC INFONET covers the entire strata of journals published from national international perspective including e-resources but all the journals of Indian origin and few from other publishers might have been left out, is the limitation of

the study. There are chances of duplication of articles appearing more than one time in the same search. Hence the publications of such journals published by the university academic community are not included in the study. Besides, JCCC@UGC INFONET is the only major source based on which the study is undertaken to reveal the scientometric productivity of the universities in Karnataka.

5. Results and Discussion

Table 1: Research Productivity of Universities in Karnataka

University	Year of Establishment	Total Number of Research Articles
University of Mysore, Mysore	1916	1100
Karnatak University, Dharwad	1949	768
Bangalore University, Bangalore	1964	597
Gulbarga University, Gulbarga	1980	367
Kuvempu University, Shankarghatta	1987	215
Total		**3047**

During the span of 42 years i.e. 1969 to May 2011, the research publications of the academic community serving or served in the aforesaid universities have been found to be 3047 research publications reported from JCCC@UGC INFONET portal. University of Mysore is the oldest university established in Karnataka has 1100 research publications and correspondingly Kuvempu University, Shankarghatta has less publications accounts to 215 and this is clear from Table 1.

Collaborative research has been the order of the day and nowadays, research is carried out by group of researchers rather than by a single researcher to a larger extent. Table 2 depicts the authorship pattern of research publications by the research community in Universities of Karnataka.

Table - 2: Author wise productivity

Authorship Pattern	No. of articles	Percentage
Single Author	120	3.93
Double Authors	844	27.69
Three Authors	760	24.94
Four and more Authors	1,323	43.41
Total	**3047**	**100**

It is quite clear that number of articles contributed individually by a single author is just 3.93 percent while 1323 articles are contributed by more than four authors (43.41%). 27.69 percent of articles (844) are contributed by two authors and 24.94 percent by three authors (760).

Table -3: Subject wise productivity

Subject/ Domain	No. of articles	Percentage
Chemistry	1153	37.8
Physics	430	14.1
Mathematics	182	6.0
Polymer Science	164	5.4
Biochemistry	142	4.7
Zoology	160	5.25
Botany	95	3.1
Industrial Chemistry	84	2.8
Library & Information Science	**77**	**2.2**
Applied Botany	68	2.2
Geology	51	1.7
Food Science and Nutrition	44	1.4
Applied Botany and Biotechnology	41	1.3
Biotechnology	39	1.3
Computer Science	34	1.1
Microbiology	30	1.0
Environmental Science	27	0.9
Applied Electronics	21	0.7
Anthropology	17	0.6
Statistics	16	0.5
Electronics	15	0.5
Biopsychology	15	0.5
Materials Science	23	0.75
Sericulture	11	0.4
Psychology	10	0.3
Education	5	0.2
Other areas	Less than 5	

Research articles published in varied subjects have been reported and some of the sub-subjects have themselves grown as independent subjects like Biotechnology, Biochemistry, and Industrial Chemistry etc. Chemistry, Physics and Mathematics dominated area of research contributions by the academicians in a university set up. Library and Information science stood at 9th position with 77 articles and the rest is shown in table 3.

Table – 4: Year-wise Research Productivity

Year	No. of articles	Percentage
1969	1	0.0
1979	2	0.1
1980	7	0.2
1981	1	0.0

1983	3	0.1
1984	1	0.0
1985	1	0.0
1986	1	0.0
1987	1	0.0
1988	4	0.1
1990	3	0.1
1991	9	0.3
1992	5	0.2
1993	5	0.2
1994	6	0.2
1995	4	0.1
1996	16	0.5
1997	47	1.5
1998	56	1.8
1999	64	2.1
2000	82	2.7
2001	123	4.0
2002	188	6.2
2003	160	5.3
2004	172	5.6
2005	211	6.9
2006	317	10.4
2007	323	10.6
2008	313	10.3
2009	418	13.7
2010	376	12.3
2011 (Partial)	127	4.2
Grand Total	3047	100.00

Although the number of articles published by the research community of Universities started in 1969, but in 1997, 47 articles are published and it has gradually increased in 2002 with 188 articles. More than 300 articles appeared between 2006 and 2010 and 418 articles are contributed in 2009 (Table 4).

Table -5: Research Communication Channel

Rank	Scientific Communication Channel	Frequency	%tage
1.	J. of Applied Polymer Science	125	4.1
2.	Transition Metal Chemistry	81	2.7
3.	Synthetic Communications	80	2.6
4.	Current Science	58	1.9
5.	**SRELS Journal of Information Management**	56	1.8
6.	Synthesis and Reactivity in Inorganic, Metal-Organic, and Nano-Metal Chemistry	55	1.8

7.	Molecular Crystals and Liquid Crystals	52	1.7
8.	Bulletin of Materials Science	42	1.4
9.	Archives of Phytopathology and Plant Protection	35	1.1
10.	European J. of Medicinal Chemistry	33	1.1
11.	Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy	32	1.1
12	Others (Journals with less than 32 publications)	2398	

Among the various scientific communication journals, the top eleven journals in which most of the articles have appeared are shown in table 5. Journal of Applied Polymer Science ranks top with 125 articles followed by Transition Metal Chemistry (81) and Synthetic Communications (80). In library and Information science, SRELS Journal of Information Management stood in fifth position and is a preferred medium of publication for articles in the field with 56 articles. Bradford's law of scattering serves as a guideline to library professionals in determining the core journals and law states that journals in a single field can be grouped into three parts, each containing the same number of articles expressed as 1:n:n2. A total of 678 scientific journals have been used for research communication by the research community publishing 3047 articles. According to Bradford's law, one third of scientific journals publish 2409 articles (79%), second one third journals published 411 articles and the third zone has 227 articles.

6. Conclusion

It would be needless to mention that the research articles contributed by the academicians from varied disciplines of Universities Karnataka reveals the qualitative publications as JCCC@UGC INFONET includes qualitative publications only in the light of the national knowledge commission striving to build knowledge society. In fact this would be a simulation for younger generations to emulate and contribute not only as a mandatory but in the interest of development of discipline and thereby be tune with requirements of national bodies like UGC.

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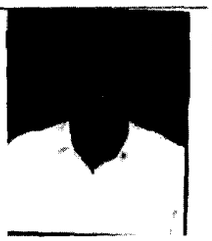
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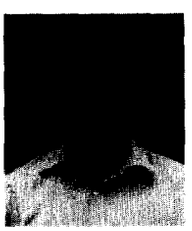
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Scientometric Study of the Electronic Journal of Academic and Special Librarianship: An Innovation in Librarianship for Knowledge Society

Keerti Bala Jain Sudhir Kumar Leena Shah Anil Kumar Jain

Abstract

This paper describes scientometric analysis of 112 contributions made in the 'Electronic Journal of Academic and Special Librarianship' during 2002 - 2009. The journal covers various aspects of academic and special libraries. The study examines the year wise distribution of contributions, relative growth rate and doubling time, authorship patterns, collaboration measures, prolific authors, length of articles, statistical distributions etc. The study reveals that single authorship is found dominant over multiple authorships. Collaboration of two to four authors has also seen. Degree of collaboration ranges between 0.18 - 0.59 and collaboration coefficient ranges between 0.11 - 0.34. Lotka's law is found not applicable.

Keywords: Knowledge Society, IT revolution, Transformation, Scientometrics

1. Introduction

The 21st century has been acknowledged world wide as the knowledge century. Our societies are always found changing with time. The societies moved from being agrarian society to industrial society, then as information society and now as knowledge society. The revolution of the technology has opened a new age in the history of mankind. The information technology revolution is creating a new form of electronic, interactive education that allows almost anyone to learn anything from anywhere at anytime. In the emerging knowledge societies, an educated person will be someone who is willing to consider learning as a lifelong process [1]. The transformation of existing societal structures by knowledge for economic growth, development, employment and globalization must constitute the basis for designating advanced modern society as a 'knowledge society'.

There are many innovations developed in librarianship to serve knowledge society. Scientometrics is considered as one of the most popular study among the librarians and information scientists. The term 'scientometrics' has been coined by Nalimove and Mulchenko (1969) to describe the study of science i.e. growth, structure, interrelationships and productivity. It is also considered for evaluation of scientific development, social relevance and impact of application of science and technology on knowledge society [2].

The Electronic Journal of Academic and Special Librarianship (EJASL) is a well known and refereed electronic journal dedicated to advancing knowledge and research in the field of academic and special librarianship. It is published in Canada by the International Consortium for the Advancement of Academic Publication (ICAAP) since 1999. It is published once in four months having three issues per volume. Initially it was named as Journal of Southern Academic and Special Librarianship. From volume 3 it is converted as electronic publication and renamed as EJASL. This journal is listed in the Directory of Open Access Journals (DOAJ) and also indexed in LISA (Library and Information Science Abstract) and Library Literature and Information Science database.

The present study is a scientometric analysis of the Electronic Journal of Academic and Special Librarianship for the period 2002 – 2009 (Volume 3 – 10).

2. Brief review of literature

There are several studies done by different authors analyzing the contribution of different journals in various fields of science. Such as – Jain and Kumar [3] for 'Indian Journal of Genetics and Plant Breeding'; Dixit and Katare [4] for 'Journal of the Indian Society for Cotton Improvements'; Kumar and Kumar [5] for 'Journal of Oilseed Research'; Vijay and Raghvan [6] for 'Journal of Food Science and Technology'; Asha [7] for 'Demography India'; Suryanarayana [8] for 'Journal of Tobacco Research'; Jena [9] for the 'Indian Journal of Fibre and Textile Research'; etc. Tigga et. Al. [10] done analysis of DESIDOC Bulletin of Information Technology; Rao and Sahoo [11] studied JASIST and Scientometric; Hanning and Kretschmer [12] studied Journal of Information Technology; Jain [13] studied Indian biomedicine and life science journals; Davarpanah and Aslekia [14] on International LIS journals; Kao [15][16] on operational research journals and also of industrial engineering journals; Patterson and Harris [17] studied the journal Physics in Medicine and Biology; Liang and Rousseau [18] on journal Science; Mukherjee [19] studied LIS open access electronic journals. Other studies includes Journal of Structural Engineering by Maheswaran, Kumar and Sridharan [20]; Pramana- Journal of Physics by Kumar et. al.[21]; Strategic management journal by Raut, Sahoo and Ganguly [22]; Journal Mausam by Garg, Sharma and Kumar [23] etc.

3. Objectives

The present study examines the scientometric forms of the articles viz. year and volume wise distribution of articles, relative growth rate and doubling time, Authorship distribution and pattern, etc. to understand trends of research activities in the area of academic and special libraries.

4. Methodology

The data for this study is collected from the website of the journal [24]. Eight volumes (3 – 10) of the journal (from 2002 to 2009) have been selected for the study. The last published volume is volume 10 in the year 2009. The volumes contain 112 articles contributed by 176 authors. Information about each contribution such as number of authors, author's affiliation country, collaboration, statistical distribution patterns, etc. has been examined and data has been analysed with the help of statistical methods.

5. Analysis

The analysis of articles published in the eight volumes of the EJALS has been made under various heads.

5.1 Year wise distributions

Table 1 shows the year wise distribution of articles in EJALS. There are total 112 papers published in the eight volumes. Maximum 23 (20.54%) articles are published in volume 10 in the year 2009 while minimum 8 (7.14%) articles are published in volume 4 in the year 2003. Average per volume for the articles is 14. Maximum (55.36 %) of

articles account 6-10 pages per article followed by 1-5 pages by 20.54 % articles, 11-15 pages by 18.75 % articles and 16-20 pages by 5.36 % articles.

Table 1 – Year wise distribution of articles in EJASL

No.	Year	Volume	No. of Articles	(%)
1	2002	3	9	08.04
2	2003	4	8	07.14
3	2004	5	11	09.82
4	2005	6	13	11.61
5	2006	7	17	15.18
6	2007	8	17	15.18
7	2008	9	14	12.50
8	2009	10	23	20.54
		Total	112	100
		Avg.	14	

Table 2 shows relative growth rate (GR) and doubling time (DT) for articles in the journal. The GR is decreasing continuously from 0.636 in 2002 to 0.230 in 2009 with minimum 0.171 in 2008. Correspondingly the DT is increased from 1.09 in 2002 to 3.02 in 2009 with maximum 4.05 in 2008. The mean relative growth rate is 0.360 and mean doubling time is 1.92.

Table 2 – Relative Growth Rate and Doubling Time

No.	Year	Volume	No. of Articles	Cumulative Total	Log_e	Growth Rate	Doubling Time
1	2002	3	9	9	2.197		
2	2003	4	8	17	2.833	0.636	1.09
3	2004	5	11	28	3.332	0.499	1.39
4	2005	6	13	41	3.714	0.381	1.82
5	2006	7	17	58	4.060	0.347	2.00
6	2007	8	17	75	4.317	0.257	2.70
7	2008	9	14	89	4.489	0.171	4.05
8	2009	10	23	112	4.718	0.230	3.02
Total			112	Mean		0.360	1.92

5.2 Authorship pattern

Table 3 shows the year wise distributions of authorship pattern of articles of EJASL. Total 162 authors have contributed for 112 articles. The trend of authorship shows that single author articles have dominance over multiple authorship as about 58% articles contributed by single authors. Maximum 81.82% single author articles are found in the volume 5 in 2004. Multiple authorship articles have collaboration of two, three and four authors. Out of total 112 articles, contributions of two, three and four authors are 29.46%, 9.82% and 2.68 % respectively.

Table 3 – Year wise distribution of authorship pattern of EJASL

SL	Year / Vol.	Number of Authors				Total paper with %	% Total	Total Authorship	Mean Authorship
		One	Two	Three	Four				
1	2002/ 3	04 (44.44)	04 (44.44)	01 (11.11)	0	9 (100)	8.04	15	1.67
2	2003/ 4	05 (62.50)	02 (25.00)	01 (12.50)	0	8 (100)	7.14	12	1.50
3	2004/ 5	09 (81.82)	01 (09.09)	0	01 (09.09)	11 (100)	9.82	15	1.36
4	2005/ 6	10 (76.92)	02 (15.38)	01 (07.69)	0	13 (100)	11.61	17	1.31
5	2006/ 7	11 (64.71)	04 (23.53)	02 (11.76)	0	17 (100)	15.18	25	1.47
6	2007/ 8	07 (41.18)	06 (35.29)	02 (11.76)	02 (11.76)	17 (100)	15.18	33	1.94
7	2008/ 9	08 (57.14)	05 (35.71)	01 (07.14)	0	14 (100)	12.50	21	1.50
8	2009/ 10	11 (47.83)	09 (39.13)	03 (13.04)	0	23 (100)	20.54	38	1.65
	Total	**65 (58.04)**	**33 (29.46)**	**11 (09.82)**	**03 (2.68)**	**112 (100)**	**100**	**176**	**1.57**
	Authorship	**65 (36.93)**	**66 (37.50)**	**33 (18.75)**	**12 (6.82)**	**176 (100)**			

The table 4 shows collaborations measures for authorship pattern. The degree of collaboration shows fluctuation during the period 2002 – 2009, ranges between 0.18 and 0.59 with average 0.42. Collaboration coefficient is very low ranging from 0.11 to 0.34 with average 0.23. The collaboration index also ranges between 2.17 and 3.00 with average 0.23. These results represent the weak collaboration trends and dominance of single authorship among the researchers.

Table 4 – Collaboration measure of Authorships

SL	Year / Vol.	Degree of Collaboration	Collaboration Index	Collaboration Coefficient
1	2002/ 3	0.56	2.20	0.30
2	2003/ 4	0.38	2.33	0.21
3	2004/ 5	0.18	3.00	0.11
4	2005/ 6	0.23	2.33	0.13
5	2006/ 7	0.35	2.33	0.20
6	2007/ 8	0.59	2.60	0.34
7	2008/ 9	0.43	2.17	0.23
8	2009/ 10	0.52	2.25	0.28
Total		**0.42**	**2.36**	**0.23**

The table 5 presents cumulative distribution of authorship pattern of the articles for the periods 2002-09. Maximum 65 contributions made by single authors. 33 articles have two authors each. Only 11 and 3 articles have three and four author contributions respectively. On the basis of this table statistical distributions have been calculated in table 6. This table presents the basic statistical distributions and parameter values obtained from the application of selected probability distributions on authorship distribution pattern viz. Mean, Variance, Binomial distributions, Negative Binomial distributions, Geometric distributions, etc. Mean values find stable around 1.500 indicating steady state in research collaboration. The values of variance have up and downs which supports uniform status of collaboration. The values of binomial and geometric distribution show that these distributions are found applicable while negative binomial distribution is not found applicable.

Table 5 Cumulative Distributions of Authorship Pattern.

Period	No. of Authors				Total
	One	Two	Three	Four	
2002	4	4	1	0	9
2002-2003	9	6	2	0	17
2002-2004	18	7	2	1	28
2002-2005	28	9	3	1	41
2002-2006	39	13	5	1	58
2002-2007	46	19	7	3	75
2002-2008	54	24	8	3	89
2002-2009	65	33	11	3	112

Table 6 Statistical Distributions of Authorship

Period	Mean	Variance	Binomial (w)	Negative Binomial (k)	Geometric (p)
2002	1.667	0.444	0.667	-2.000	0.600
2002-03	1.588	0.478	0.588	-3.125	0.630
2002-04	1.500	0.607	0.500	2.333	0.667
2002-05	1.439	0.539	0.439	1.929	0.695
2002-06	1.448	0.523	0.448	2.683	0.690
2002-07	1.560	0.683	0.560	2.548	0.641
2002-08	1.551	0.629	0.551	3.842	0.645
2002-09	1.571	0.602	0.571	10.667	0.636

5.3 Prolific contributors

Table 7 presents the contributions of the authors. There are total 162 authors contributing to the articles. Out of these, only one author has three contributions. 12 authors produce 2 articles each. Remaining 149 authors have single contribution. So far there is no means of preparing list of prolific authors.

Table 7 – Distribution of Records of Authors

S. No.	No. of Authors	No. of Contributions by each author	Total Authorship
1	1	3	3
2	12	2	24
3	149	1	149
Total	**162**		**176**

6. Result and Discussion

From the above study we have obtained following results.

- The number of articles has increased.
- Average per volume of articles is 14.
- Growth rate is decreased and a corresponding increasing in doubling time is found in the study.
- Maximum articles account 6 – 10 pages per article.
- The number of single authorship articles has dominance over multiple authorship.
- Contribution of two to four authors is found which shows collaboration of maximum four authors.
- Mean authorship is found to be 1.57.
- Degree of collaboration (0.42) and Collaboration coefficient (0.23) shows weak collaboration.
- There are 162 authors contributed to the journal EJASL volume 3 to 10.
- 149 authors contributed only one article each.

7. Conclusion

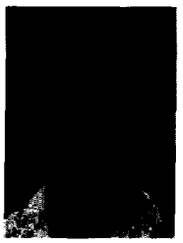
The Electronic Journal of Academic and Special Librarianship is a very effective and leading prominent journal in the field of academic and special libraries. This study concludes that the single authorship and research trend is found dominant. Relative growth rate has decreased and doubling time has increased which is not a good sign for research activities in any field. Maximum three contributions of one author and two contributions each of 12 authors found. So there are no prolific authors found. Lotka's Law also not found applicable.

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Semantic Search:
Library Next Generation OPAC Speaks Users Knowledge

Mallikarjuna C

Abstract

Semantic Web technology is more and more often applied to a large spectrum of applications where domain knowledge is conceptualized and formalized (Ontology) as a support for diversified processing (Reasoning) operated by machines. Moreover through a subtle joining of human reasoning (cognitive) and mechanical reasoning (logic-based), it is possible for humans and machines to share complementary tasks. This paper discusses the possible application of Semantic Web technologies to new paradigms of social networing, digital content, personal computing and mobile computing. This paper highlites various ways and means to analyze the semantic web technologies use in smart information resources and self-maintained OPAC.

Keywords: Semantic web, Semantic technology, XML, RDF, Ontology, Interoperability, Social networking, Digital Libaries

1. Introduction

In advancement of Computer science has been concerned with processing of data. Semantic web provides machine-understandable descriptions of data, programs, and infrastructure, enabling computers to reflect on these artifacts.The very first application of the semantic web technology has focused on Information Retrieval (IR) where access by to semantic content instead of the classical statistical analysis was sought to give far better results (Precision and Recall). Semantic web technology led by World Wide Web Consortium (W3C) gives totally new opportunities for building information and knowledge management solutions between different resources in networked information environment. Integration of Web Services and new enabling semantic web technologies (like RDF, RDF(S), OWL and DAML-S) create comprehensive and more intelligent web services environment. The Semantic Web (Berners-Lee et al., 2001) motivated by the rapidly growing volume of useful electronically accessible information that is only meaningful with human interpretation is an effort to build more "machine-friendly" content (and services) for the World Wide Web. Information with accessible formal semantics can be processed by automated without human intervention or the need to apply human interpretation. Deployment of the Semantic Web could ease the current human workload if it leads to easier automation of (Webbased) tasks and thus allows computers to do more on behalf of humans. Much of the promise of the Semantic Web is predicated on the emergence of ontologies, specifications of conceptualization [Gruber, 1993].

2. Semantic web

Semantic Web is expected to become a next-generation of the web assuming that besides an existing content there will be a conceptual layer of machine-understandable metadata, making the content available for processing by intelligent software. This allows automatic resource integration and provides interoperability between

heterogeneous systems. The next generation of intelligent applications will be capable to make use of such metadata to perform resource discovery and integration based on its semantics. Semantic Web aims at developing a global environment on top of web with interoperable heterogeneous organizations, applications, agents, web services, data repositories, humans, and so on. On the technology side. Web-oriented languages and technologies are being developed (e.g. RDF, OWL, WSMO, etc.).

The Semantic Web relies on the following principles:

- The Semantic Web is about resources (and not limited to Web pages like in the classical WWW). A resource can literally be anything, e.g., a Web page, a book, or a human being.
- Every resource is identified by a Uniform Resource Identifier (URI). URIs are short ASCII-strings that identify resources. Hence, a URI can be the address of a Web page (URL), the ISBN of a book, or the socia security number of a person. Internationalized Resource Identifiers (IRIs) are a complement to URIs. An IRI is a sequence of characters from the Universal Character Set (Unicode), e.g., to use Hindi symbols in a URI.

2.1 Ontologies

Ontologies are seen as a key component of the semantic web. They are used as a form of knowledge representation about the world or some part of it.The term ontology has its origin in philosophy, where it is the name of one fundamental branch of metaphysics concerned with analyzing various types or modes of existence. In both computer science and information science, an ontology is a data model that represents a set of concepts within a domain and the relationships between those concepts. It is used to reason about the objects within that domain. ontologies are built with a specific language, e.g., XML, RDF, or OWL.

2.2 Standards

- **RDF:** Resource Description Framework (RDF) provides interoperability and easier discovery between different resources that exchange information on the Web.
- **OWL:** Web Ontology Language (OWL) describes the structure of knowledge and enables knowledge sharing and integration between resources. Ontology enhancement for Web Services is the most important.
- **DAML-S** : DARPA Agent Markup Language for Services (DAML-S) describes the upper level ontology for properties and capabilities and it enables automatically discover, invoke, compose and monitor for web services.

3. Application semantic web in librarie

Words in natural language may be analyzed along syntactic and semantic lines. From a syntactic perspective, we note that words must be spelled and inflected according to certain morphological rules and combine into phrases or sentences following grammatical principles. In the syntactic realm we can decide whether the text is well formed with respect to morphological or grammatical rules, but not whether it is

meaningful to the reader. Semantics refers to the meanings of words and compositions of words into phrases, sentences, and larger pieces of text. Every word is assumed to carry semantic content that combines with other words into meaningful messages to readers. We say that a word or term in the syntactic realm refers to some concept in the realm that constitutes the meaning of the term. Web 2.0 technologies enable active roles for users, who can create and share their contents very easily. This mass of information includes opinions about a book, author, and variety of key interest topics and represents a new and invaluable source of information for other users.

3.1 Semantic Web and Vocabulary control

- Thesauri & Controlled Vocabularies- qualified DublinCore
- DMoz, DDC-based taxonomies SKOS, WordNet and other thesauri, Schema Mappings / Crosswalks
- MarcOnt Ontology - aims to cover concepts from MARC21, BibTeX and DublinCore
- MarcOnt Mediation Services – an open mediation framework between common legacy metadata standards
- Metadata Integration- RDF as a common data model for integrating metadata from various autonomous and heterogeneous data sources.
- SPARQL as a common query language
- Semantic digital libraries integrates users knowledge like Tagging, sharing, collaborating, Social Semantic Collaborative Filtering

3.2 Semantic web and OPAC

Possible benefits in OPAC

- Integration of library resources with users knowledge
- Single point of entry for all library resources for e.g : Blacklight, Vufind, etc
- State-of-the-art web interface
- Enriched content and Faceted navigation
- Simple keyword search box with a link to advanced search on every page
- Relevancy
- Did you mean...?
- Recommendations/related materials
- User contribution for e.g Reviews, Annotations, Integration with users tagging in social networking sites
- RSS feeds
- Persistent links
- Rating/ranking, Comments
- More like this
- If book is not available in specific library, it will show nearby library
- It will show new publication released in the user area of interest

These are all possibilities very near future without manual intervention, already we seeing some of them in OPAC's.

3.2 Semantic Web and Digital libraries

- Integrate information based on different metadata, e.g.: resources, user profiles, bookmarks, taxonomies
- Provide interoperability with other systems (not only digital libraries) on either metadata or communication level or both delivering more robust, user friendly and adaptable search and browsing interfaces empowered by semantics.
- Semantic digital libraries extend digital libraries by
  - Describing and exposing its resources in a machine 'understandable' way.
  - users, user communities
  - controlled vocabularies, thesauri, taxonomies
  - expose the semantics of their metadata in terms of an ontology
  - defined using a formal language
  - deliver mediation services for communication with other systems

Sematic web enabled tools

- **SIMILE:** Extends and laverages DSpace, seeking to enhance interoperability among digital assets, schemata, metadata, and services.
- **JeromeDL:** A social semantic digital library makes use of Semantic Web and Social Networking technologies to enhance both interoperability and usability.
- **BRICKS:** Aims at establishing the organizational and technological foundations for a digital library network in order to share knowledge and resources in the cultural heritage domain.
- **FEDORA**: Delivers flexible service-oriented architecture to managing and delivering content in the form of digital objects

4. Merits

- New search paradigms for the information space Ontology-based search / facet search Community-enabled browsing.
- Providing interoperability on the data level integrating metadata from various heterogeneous sources
- Interconnecting different digital library systems
- The Social Web creates a set of single data silos or 'stovepipes', i.e. there are many sites, communities and services that cannot interoperate with each other, where synergies are expensive to exploit, and where reuse and interlinking of data is difficult and cumbersome.

5. Demerits

- The Semantic Web can't work all by itself
- Need society-scale applications: Semantic Web agents and/or services, users and processors for semantic data, more advanced collaborative applications
- Web does not have metadata the idea of a Semantic Web is nice but difficult to implement

6. Conclusion

Modern IR systems are faced with new challenges. Firstly, there is the increasing complexity of the content and secondly, the users' expectations get more exigent and ambitious. This paradigm shift of user search behavior requires new knowledge representation and retrieval technologies as well as new retrieval strategies.

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Significance of Knowledge Sharing for the Success of Knowledge Society in Digital Environment

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Abstract

Information and knowledge are widely recognized as a critical organizational resource irrespective of economic sector or type of organization. It is difficult if not possible to maximize the values of this resource without adequate understanding of how to leverage and share knowledge throughout the organization. Knowledge plays an important role in the overall development of intellectual capital of any organization. This paper highlights the importance of knowledge sharing to create a vibrant knowledge society and explains the role of internet in knowledge sharing. Further the authors suggested how knowledge can be shared in digital environment for effective utilization of all types of knowledge resources and services.

Keywords: Knowledge society, Knowledge sharing, Knowledge management, Digital environment

1. Introduction

The proposition 'knowledge society' acknowledges the might of the brain power over of any other kind, be it economic or military or political. The position that a country enjoys in the present day world is determined by its ability to make best use of its brainpower. The capability created by knowledge is the foundation upon which our future is to be built. A knowledge worker is anyone who works for a living at the tasks of developing or using knowledge. For example, a knowledge worker might be someone who works at any of the tasks of planning, acquiring, searching, analyzing, organizing, storing, programming, distributing, marketing, or otherwise contributing to the transformation and commerce of information and those (often the same people) who work at using the knowledge so produced. This term first used by Peter Drucker in his 1959 book, Landmarks of Tomorrow and the term includes those in the information technology fields, such as programmers, systems analysts, technical writers, academic professionals, researchers, and so forth. The term is also frequently used to include people outside of information technology, such as lawyers, teachers, scientists of all kinds, and also students of all kinds.

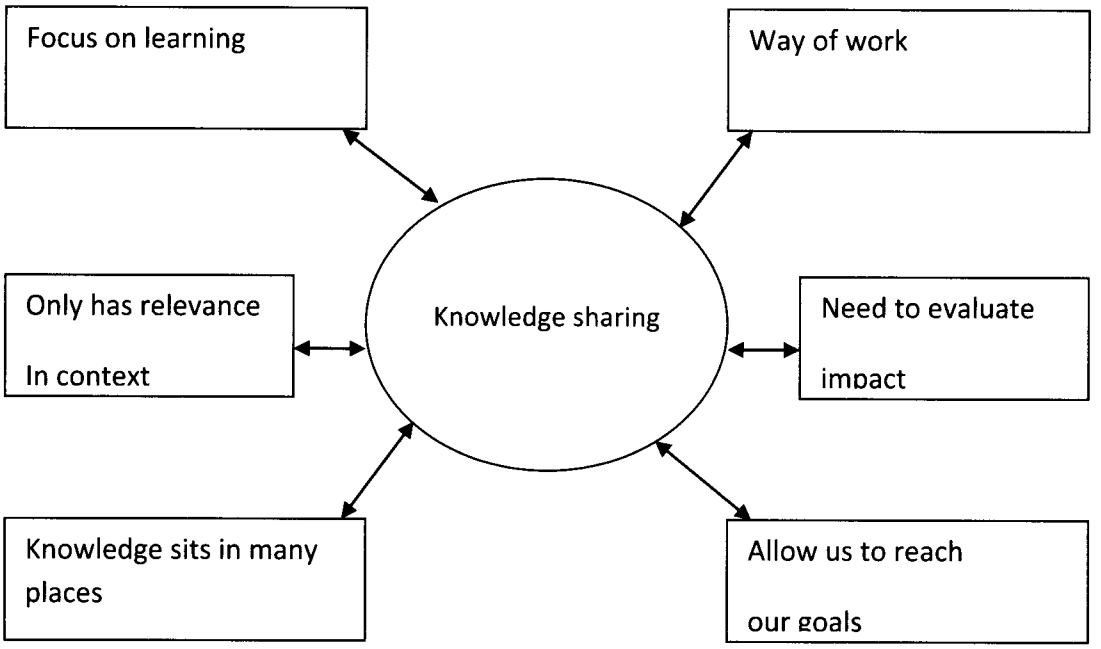
2. Knowledge Sharing

2.1 Fundamentals of Knowledge Transferring:

- Should be a daily, integral part of a learning organization.
- Transmitting (or conveying) the knowledge of one source to another source and the appropriate use of the transmitted knowledge
- Goal is to promote/facilitate knowledge sharing, increase collaboration and networking.

2.2 Role of Internet in Knowledge Transfer & Sharing

- Accommodates knowledge exchange and communication
- Allows sending messages to multiple persons simultaneously
- Offers a variety of services
- Integrates systems and networks



3. Role of Internet

- With the use of internet, it is possible to transmit/receive information containing images, graphics, sound and videos. ISP industry can offer services as:
- Linking consumers and businesses via internet.
- Monitoring/maintaining customer's Web sites.
- Network management/systems integration.
- Backbone access services for other ISP's.
- Managing online purchase and payment systems.
- The internet is designed to be indefinitely extendible and the reliability of internet primarily depends on the quality of the service providers' equipments.

4. Knowledge Exchanges in Digital environments

The problem of managing knowledge is, essentially, a problem of knowledge exchange. To be managed, the knowledge needs to be retrieved from some source, processed, and then distributed to other users. Thus, knowledge exchanges are the essential ingredients of KM. Although the topic of knowledge exchange seems well focalised, a rapid glance at the KM literature is enough to highlight that there are several problematic aspects that make this topic a challenging terrain for both the research and the practice. An essential problem results from the extreme variety of situations to which the issue of knowledge exchange can be related. It can be said that a myriad of knowledge exchanges continuously occurs in disparate contexts, even when they are not explicitly identified and recognised. An interpersonal communication is an

exchange of knowledge, but also economic transactions between two trading firms can be seen as (or involve) a knowledge exchange. Even two computers exchanging messages are, somewhat, part of a kind of knowledge exchange. What's more, one can speak of knowledge exchange even when there is someone that communicates a message to a broad audience: a TV programme is a process of knowledge exchange, as is the publication of a book or a Web site. Thus, there is a problem of definition. There is no clear consensus here, and distinct terms (such as knowledge sharing, transfer, exchange) are used, also with different shades of meaning (in this preface, we will just speak of knowledge exchanges, but we will more generally mean all the terms previously indicated). In addition, the exchange of knowledge is a process that involves various elements (i.e., the knowledge objects exchanged, the sources and receivers, the carrier or medium, the mechanisms used, etc.). Thus, a researcher can decide to centre the analysis on one specific element, or to include different variables or factors, or to focus on the intertwined relationships among all these. Due to these complications, the characterising aspect, the implications, and the practical questions of knowledge exchange are many. Here, we will explicit focus on the perspectives adopted by researchers whose main field is that of KM. The contributors to this book were asked to explain their viewpoints, research methods and interpretative models, and to debate the findings of their studies, with the purpose to clarify the state of our knowledge about this issue and discuss the prospective fields of study. In particular, they were invited to provide insights into some open questions that we will briefly recall in the following pages.

5. Organizational Knowledge Capability and Knowledge Sharing

The core capabilities of knowledge organization are important in providing information and knowledge- based services. The KM initiatives will fail if the investments of organizational resources and capabilities are inappropriate. In other words, effective KM should contribute to organizational performance through the development of organizational knowledge capability. Empirical research revealed that an organizational capability to learn or acquire the needed knowledge from other organizations is a key resource for successful knowledge sharing. Thus, the enhancement of knowledge capabilities as the foundation of organizational development is beneficial for organizational effectiveness. Normally, organizational capabilities invest on process improvement, work effectiveness, learning, and supporting technology that facilitate knowledge transfer and sharing. Hence, these are needed if a firm strengthening OKC hopes to see the effectiveness and efficiency of knowledge sharing.

5.1 Guidelines for Successful Knowledge exchange

- Building an Atmosphere of Trust within the Organization
- Collaboration/Cooperation are not Rivalry/Competition
- Creating the Culture to Accommodate Change
- Reasoning (why to do) BEFORE Processing (how to do)
- Knowing how the Organization handles Mistakes
- Doing is BETTER than Talking
- How Management view and reward Knowledge Transfer
- Determine Employee Job Satisfaction

- Degree of match between vocational needs and job requirements

5.2 Prerequisites for exchange

- Knowing can be considered as very personal.
- The terms knowledge transfer and knowledge share are interrelated.
- Knowledge transfer refers to a mechanistic term meaning providing knowledge for someone else.
- Knowledge sharing refers to exchange of knowledge between individuals, between individuals and knowledge bases etc.
- Knowledge transfer can involve political, interpersonal, leadership and organizational issues to consider.

6. Conclusion

A knowledge society focuses on developing interpersonal, structural, and network relationships to achieve effective knowledge sharing and to further generate new knowledge or capabilities for organizational competitiveness and success. This paper elaborates upon some capability variables which can affect knowledge sharing behavior. By identifying these capability factors as the determinants of shared knowledge, organizations can more efficiently deploy and organize their resources and capabilities for knowledge sharing. This study focuses on the investigation of intraorganizational capabilities and sharing behaviors, and future research can be conducted on the activities of extra-organization sharing or multinational corporations.

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Technology Enabled Knowledge Society: Artificial Intelligence

Justine S **Poornam Thayammal R**

Abstract

Artificial Intelligence is one of the most important advances in the area of computer science. In the recent past it has developed as a new sub-discipline. Artificial Intelligence is emerging from the laboratory and is beginning to take its place in human affairs. In this study, we have discussed the principles of using artificial intelligence, features of artificial intelligence, role of artificial intelligence, advantage of artificial intelligence and the limitations of artificial intelligence.

1. Introduction

The modern society reflects the new and highly sophisticated technology and the enormous range and quantity of the available information. Man the supreme creation of god is gifted with intelligence, the power that subdues all on earth. Man has crowned himself with artificial intelligence, using his natural intelligence. Natural intelligence is an inner potential within man right from his truth. Artificial intelligence is the manthra of the modern thinking machines, is a developed intelligence. It is the human induced engineering that is programmed to work as programmed, flawlessly in a machine or a technological system. It eases the daily functions and performs complicated and risky jobs.

The modern technical world is rooted, nurtured and governed by artificial intelligence and its scope would further expand unimaginably in the years to come in all walks of life. Thus it becomes imperative to what is artificial intelligence, features of artificial intelligence, virtual role of artificial intelligence advantage of artificial intelligence, limitations of artificial intelligence.

2. Principles of Using Artificial Intelligence

Arising from this development of ways to use computers to help children learn and think. Papery has generated a number of principles as follows;

a) **The continuity principle:** This means that the material to be learned must have well-established links with existing personal knowledge 'from which it can inherit a sense of warmth and value as well as 'cognitive' competence'.

b) **The power principle:** The activities involved must give power to the learner so that he or she can develop personally meaningful projects in ways that would have been impossible without the computer.

c) **The principle of cultural resonance:** 'The topic must make sense in terms of a larger social context'.

3. Features of Artificial Intelligence

4.1 Computer Simulations

Simulation programmes are designed to depict real-world happenings without the

dangers, expense or time needed to experience the actual event. They provide continuous feedback to the user regarding the status of the event and options available (Saltinski, 1981). Simulations include computer graphics and image reproductive system (Michael Sullivan, 1995). Heim (1993) maintains that the key aspect of simulation is to offer a replica of real environment of object that fools our senses into perceiving the simulation as real. Computer simulations are built from models of real world situation. Because reality is complex, models are built to simplify the reality so that it can be easier to study its most important features. Learners could never write well about something until they had thought well about it. Simulations are opportunities to work with learners on how to think well about fairly complex matters. Thus Computer Simulation exemplifies how to enhance the learning effectiveness by utilizing various information technologies and teaching methods.

The Educational Simulations are metaphors designed to focus the learners' attention on concepts, which allow them to explore artificial environment, imaginary or based on reality. The educational simulations also provide a good opportunity for exploration, experimentation and interaction. The learners can experience the consequence of their actions without facing risk. Alexis Leon and Matthews Leon (1999) maintain that with a simulations allow learners to have experiences that world not be possible otherwise. Instead of simply spewing facts, simulations provide a context for knowledge. Thus, these simulation technologies offer an opportunity to bring elements to active practice into the classroom. Unless the simulation represents the real-world event, learners may develop inappropriate understanding of the event. Computer simulations are very much useful in education, especially in case of science, engineering and medical lessons. Topics such as gaseous diffusion, interference and diffusion patterns of light waves, motion of satellites, etc can be very well taught with the help of simulations.

4.2 Interactive Multimedia

Many people have interpreted the term Multimedia differently but essentially the term describes the presentation of information using a combination of communication elements such as text, sound, graphics, animation and video. Previously the term Multimedia was used to mean "a collection of media emanating from disparate presentation devices such as learning packages, consisting of printed materials, slides, audio tapes and so on". Now the term refers to "a class of computer driven interaction communication systems which create, store, transmit and retrieval, textual, graphic and auditory networks of information" (Gazeski, 1992).

More recently, the process of creating multimedia has been the ability for a number of types of information such as text, Sound, graphics, animation and video to be able to combine through the use of a computer. The complex graphics and video image interactive computerized multimedia technology. The word interaction from its Latin origin describes a mutual dealing between two or more people. If we apply the same word to computer, interaction means that program execution depends on the user's input. For instance, the user can actively control program flow. Multimedia achieves its greatness through its interaction. Multimedia software allows educational developers to orchestrate and direct the combination of text, graphics, and animation, audio and video images into highly interactive program.

4.3 Virtual Learning

Educational theories classify learning activities as constructivist, constructionist, or

situated (Moshel and Hughes, 2002). Constructivist learning involves exploration of prebuilt worlds and discovery. During constructionist learning students must actively build models of the world as opposed to exploring already built ones. Situated learning, more than any other method, involves group interaction and development of social skills (an important educational component).

Three types of learning are well served by Virtual Learning due to its ability to mediate world exploration and construction, its mapping of a user to any character he or she chooses, and the provision of shared virtual worlds. Through its interactive environment, repetition, and one-to-one experimentation, Virtual Learning can help improve knowledge retention and student motivation. By simulating chemistry or physics experiments, knowledge can be transferred without increased safety risks associated with real laboratories. Through the Internet, Virtual Learning can facilitate distance learning in places where schools or specialized teachers are scarce, and so on. In what follows we describe a few applications of Virtual Learning in education, from the college level to the elementary school level.

4. Role of Artificial Intelligence

Many of the difficulties in the way of the promotion of the soft of natural learning that Papert argues for, are structural in that they are built- in to the system. For example, the sort of mathematics that is taught in school cannot be related in any important way to the child's existing knowledge of the world. It is formal and abstract and 'dissociated'. For Papert the arrival of small computers and the corresponding existence of a 'computer culture' make it possible to begin to solve many of these fundamental learning problems.

He describes this emergent computer culture from the particular viewpoint of the educationalist, and the student of thinking and learning. He argues that the computer allows for the creation of new cultural or environmental contexts which make a connection between the scientific learning of school and the personal world of the child. The sciences are in this way humanized, the formal is made informal and intuitive, and the child is given access to what he calls 'powerful ideas' which can be used to achieve this transformation. In this way many of the difficulties, both social and personal, in the way of learning can be overcome.

5. Advantages of Artificial Intelligence

One of the most important advances in area of computer science in the recent past concerns the development of a new sub-discipline, which is referred to as 'Artificial Intelligence'. The First era of computer application has focused on numerical calculations. The transition to the new era is one in which computers will be able to reason with knowledge. Artificial Intelligence the part of the systems is emerging from the laboratory and is beginning to take its place in human affairs. With Artificial Intelligence the role of the computer in human lives changes from something useful to something essential.

The most effective uses of Artificial Intelligence (or advanced technology in general) in education provide the most statistically significant improvements in learners' outcomes. Researchers develop software that focuses on new methods of teaching and new learning outcomes. The problems in developing these systems and moving them into education on a broad scale are not simply technical ones. As technology continues to transform the goals for

learner's learning and to enlarge the range of methods for teaching and learning, Implementation will require proportionally more effort.

6. Limitations of Artificial Intelligence

Appropriate active learning experiences are indispensable in learning science. Students in many science courses get only few opportunities to think and reason about scientific problems. Well designed laboratory experiments provide the best means to learn science. A Chemistry student can make use of his chemical lab and get direct experiences from his experiments; however there are many barriers on the use of real laboratory experiments. In the sense of artificial intelligence, students can use his own intelligence or knowledge, and writing the programmes and feed to the computer. We can take robots, with mechanical arms perform physical actions in their environment. They are characterized by flexibility, as again robot can execute a variety of task or execute a given a task in given ways. Finally robots are intelligent or self-adopting, so they can react to changes in the environment and take correction actions in-order to perform their tasks successfully. So human knowledge or intelligence in essential.

7. Conclusion

Artificial Intelligence is playing a prominent role in computer knowledge. It is used in problem-solving application various methods. If knowledge is represented as formulas in predicate logic, then resolution can be used to derive new inferences. It is important to keep in mind that the power of these techniques lies in their ability to use knowledge effectively to solve particular problems.

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Use of URL Citations in LIS Scholarly Publications: A Citation Analysis

Prithvi Raj KR **Sampath Kumar BT**

Abstract

This study reports a qualitative analysis of use of URL citations in Indian LIS scholarly communication. A total of 1678 citations from 193 articles published in NACLIN conference proceedings are collected, of which 57.86% of citations are print sources and 42.13% of citations are URL sources. Average URL citation per article ranged from a low of 2.28 in 2001 to a high of 4.7 in 2004. The average number of URL citations per paper is 3.66 across all articles published during 2001-2005. Among the URL citations collected, organizational domains consisted of larger percentage (29.13%) followed by .edu (20.36%) and .com (16.83%). Of the 707 Web sources only 5.23% of them have complete bibliographic information and 53.32% of them have only URL addresses.

Keywords: Citation analysis, Citing pattern, URL citations

1. Introduction

The advent of the Internet in general and WWW in particular widened the range of options for scholarly communication by the authors and libraries who are the main stakeholders of scholarly communication. (Chen, et al 2009). Internet has become ubiquitous and the information resources available through it have become so abundant that more and more scholars utilize them in their research. Web publication and online- acquisition are becoming common practice (Wu, 2009). Internet is increasingly becoming the first choice of information searching. The academics like students, researchers and teachers rely more and more on internet and its services for various activities in their education (Kumar and Kour, 2006). The Web is continuously growing at an incredible speed both in terms of its content and in terms of the number of users accessing it, and has become an indispensable source for information such citations to web resources has also become common features of scholarly literature (Bar-Ilan and Peritz, 2009).

2. Related Studies

The study has noticed a significant growth on the proportion of citations to Web resources in scholarly journals and some related studies are reviewed here.

Davis and Cohen (2001) conducted a study on the research behavior of undergraduate students in microeconomics from 1996-2001 found a growing trend of using Web citations in students' project bibliographies. This comprised 9% of all citations from the beginning of the study in 1996 and surged to 22% in 2000. Another study by Rumsey (2002) on the usage of online citations in law review articles shows that the use of at least one Web Citation cited in law review articles increased from 5% in 1995 to 23% in 2000. Herring (2002) discovered that about 55% of the articles included Web-based references, which counted for 16% of all references cited. Results of the study clearly indicate that the researchers are depended more and more on electronic resources. Dellavalle et al. (2003) examined the frequency, format, and activity of Internet references in three high circulation U.S. journals. The result showed

that 30% of articles contained one or more Internet references. Overall 2.6% of all references were Internet references. The highest density in Web citations appeared in review articles and the lowest in letters.

Hester (2004) found that articles with Web citations increased from 9% in 2001 to 16% in 2003. Sellitto (2005) analyzed 123 articles on Web based education and training research obtained from the Aus Web series of conferences between 1995 and 2003. Of the 2,168 references obtained, almost 50% were URLs giving the average number of Web citations to be 8.5 per paper. Olfson and Lawrence (2005) examined all issues of AIDS Patient Care and STDs between 2001 and 2004 to test the use and accessibility of Internet citations during this period. They found that Internet referencing increased from a mean of 0.7% of all citations in 2001 to a mean of 3.5% in 2004.

In the year 2006 Maharana et al. analyzed 292 Web citations spread over 95 scholarly papers published in the proceedings of the National Conference of the Society for Information Science, India (SIS-2005). All the 292 URL citations were scanned and data relating to types of Web domains, file formats, styles of citations, etc., were collected through a structured check list. Ultimately, the study revealed that 292 (34.88%) out of 837 were URL citations, proving a significant correlation between the use of Internet resources and research productivity of LIS professionals in India. The highest number of URL citations (35.6%) was from .edu/.ac domains. Dimitrova and Bugeja (2006) analyzed 1,600 online citations from the six journals published between 2000 and 2003. The number of online citations increased steadily during that period, starting from 276 online citations in 2000, 300 in 2001, 485 in 2002, and 539 in 2003 articles. In other words, the number of online citations in articles from 2000 to 2003 almost doubled. Oermann et al. (2008) examined 573 Web citations in articles published in nursing journals and found that an of average 3.1 Web citations per article.

A recent study by Wu (2009) also found that the volume of references in Chinese academic journals has increased reasonably in five years. The total amount of Web references has quadrupled and the percentage of Web references in references also keeps increasing. A recent study by Moghaddam and Saberi (2010) research findings also indicated that 66% of articles have Web citations and rate of articles containing URL has increased from 17% in 1995 to 89% in 2008.

From the above discussion it is very clear that there is a continuous growth in the use of web sources in scholarly communication.

3. Scope and Methodology

In the light of the growth of Web citations in scholarly publications, the present study examined the distribution of articles, citations and percentage of web citations used in the conference proceedings of National Convention on Knowledge, Library and Information Networking (NACLIN) published during 2001 to 2005. The necessary data for the study collected from the articles published in NACLIN conference proceedings published during 2001 to 2005. The citations considered in the present study are the references that appeared as a list at the end of the article under the Bibliography and/or Hypertext Reference section. Any expanded bibliographies, endnotes, footnotes, email links and annotations were not considered as citations in this study.

A total of 193 articles published in National Convention on Knowledge, Library and Information Networking (NACLIN) conference proceedings published during 2001 to 2005. All citations (N=1678) that appended as a list at the articles under the reference/bibliographic sections were collected. The citations are analyzed and tabulated on the basis of distribution of articles, percentage of use of URL citations, authorship pattern and domains associated with URL Expanded bibliographies, end notes, footnotes, e-mail links and annotations were omitted.

4. Results and Discussions

The data are tabulated and analyzed in the forthcoming sections.

Table-1: Distribution of Citation by Form

Year of Publication	Total No of Articles	Total No of Citations	Journals	Books	Workshop	Reports	Conference	URL Citations	Theses	Dissertation	Others
2001	42	324	95	63	12	5	23	96	-	3	27
2002	40	366	59	78	8	10	16	151	3	-	41
2003	47	444	92	80	17	16	23	207	-	-	9
2004	30	266	36	46	20	7	11	141	-	1	4
2005	34	278	73	33	1	9	29	112	2	3	16
Total	193	1678	355	300	58	47	102	707	5	7	97

***Note**: other (archives, syllabus, broachers, etc,)*

The Table 1 shows of the 1678 citations 57.86% of them are citing print sources (971) and 42.13 % (707) references citing web sources. It summarizes the distribution of citations by different forms of document cited in conference proceedings. It is found that out of 1678 citations, 707 (42.13%) of references are web sources among which journals' citations are 355 (21.15%), books 300 (17.87%) and conference/seminar 102 (6.07%).

Table-2: Distribution of Articles and URL citations (2001-2005)

Year	Total no of Articles	Total no of Citations	Total no of print Citations	Total no of URL citations	Average web citation per paper	Average URL citations as % of all Citations
2001	42	324	228	96	2.28	29.62
2002	40	366	215	151	3.77	41.25
2003	47	444	237	207	4.36	46.17
2004	30	266	125	141	4.7	53.00
2005	34	278	166	112	3.29	40.28
Total	193	1678	971	707	3.66	42.13

As shown in table-2, highest number of articles published in 2003 (47) and least number of articles published in 2004 (30). Accordingly an average of 3.66 citations were calculated per article. Additionally among all citations (N=1678) there were 707 URL citations with the average of 4.19 URL citations per article. The percentage of URL

citations ranged from 2.28 in 2001 to 4.7 in 2004. The number of articles with URL citations was significantly increased during the years.

Table-3: Domains associated with Web located Citations

Year	Annual Totals (N)	Domains								
		.edu	.com	.org	.net	.gov	.ac	.ernet	.co	other
2001	96	17	22	27	3	8	7	-	1	11
2002	151	25	25	48	5	17	6	-	1	24
2003	207	45	16	72	6	18	27	3	1	19
2004	141	36	35	33	4	4	14	3	2	10
2005	112	21	21	26	3	4	13	3	4	17
Totals	707	144	119	206	21	51	67	9	9	81
Percentage		20.36	16.83	29.13	2.97	7.21	9.47	1.27	1.27	11.45

The Table 3 shows that among the 707 URL citations collected, .org domain consisted of the largest percentage (29.13%), which was followed by .edu (20.36%). A 16.83% of the URL citations come from .com domains. Scholarly articles in LIS have cited quite a few resources from Web sites with .ac (9.47%) and .gov (7.21%). The data clearly shows that .org domains are supposed to be the most frequently used sources of information on the Internet and they were in the mainstream of LIS scholarly communication, perhaps not only due to the suitableness but also due to the credibility and reliability issues related to information from these domains.

Table-4: Authorship pattern and web citation

Authorship Pattern	Total no of articles	Total no of citations	Total no of print citations	Total no of URL citations	Percentage of URL citations
Single	109	954	510	444	46.54
Two	56	479	288	191	39.87
Three	23	224	158	66	29.46
>Three	5	21	15	6	28.57
Total	193	1678	971	707	42.13

One of the objectives of the study was to examine the proportion of URL citations in single authored and multi authored papers. The data presented in the table-4 indicates that single authored papers used more number of URL citations with46.54% followed by multi authors (two authors: 39.87%, three authors: 29.46%, more than three: 28.57%). This table clearly indicates that single author cited more number of web citation than the multi authors in the articles.

Table-5: Web references characteristics

Year	Total no of URL citations	Only URL	URL & partial bibliographic Citations	URL & complete bibliographic Citations
2001	96	47	48	1
2002	151	94	51	6
2003	207	134	62	11
2004	141	72	59	10
2005	112	30	73	9
Total	707	377	293	37

Data presented in table-5 shows URL citations characteristics which are cited in 193 articles. Of the 707 Web sources 53.32% have only URL, 41.44% of Web sources have URL with partial bibliographic references and only 5.23% have URL with complete bibliographic references. This shows that majority of authors have used only URL addresses of the web sources in the reference lists.

5. Conclusion

The present study examined the use of URL citations the articles of NACLIN conference proceedings for the year 2001-2005. The paper reported that a total of 193 articles published and a total of 1978 citation are fond in these articles. All though the proportion of web sources (42.13%) is less compared to print sources (57.86%), the number of citations to web sources has made a significant impact on LIS scholarly communication during 2001- 2005. A notable finding of the study was that majority of articles contained only URL address. But it is very essential to provide the full bibliographical details of URL citations including authors name, title of the article, publishers, date of access etc., This will be helpful to the researchers to access the URL citations to retrieve in future.

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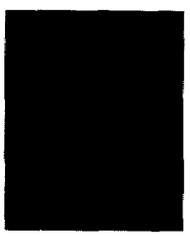
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Web 2.0 and Its Application to Library and Information Services: An Overview

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Abstract

In the last few years, libraries have been faced with a rapidly changing online environment that offered users a number of engaging and competitive services. This, together with the fact that more and more users are moving and interacting online, has forced libraries to start thinking about their role and presence in this virtual world. This paper discusses that web 2.0 technologies will have substantial impact on library services, which is user centred, collaborative, multimedia based, socially rich and communally innovative. This article also gives a brief account of libraries which are using web 2.0 for providing efficient and effective services to its users worldwide.

Keywords: Web 2.0, Web based library services, Library 2.0

1. Introduction

In the past few years, the environment surround libraries has been transforming with a rapid pace; new generation of users or better yet, old generation of users with new expectations, needs and behaviour on one hand, the quick developments of the web on the other hand, and changes in the society in general have just some factors. In this changing environment, the application of web 2.0 has transformed the functionality of libraries. A number of different definitions have been given for web 2.0, but it essentially presents a new way in serving the library clienteles. It has brought innovative services and set a new standard for user-centred design by creating more intuitive tools, demanding constant change, flexibility and evaluation while promoting user engagement, sharing, collaboration, interaction and personalization. However, the usefulness of the service depends on the number of its users; the more users, the more useful and valuable a service becomes.

2. Web 2.0: A Conceptual Framework

The concept of "web2.0" originated at a conference brainstorming session between O' Reilly and Media Live International. Dale Dougherty – web pioneer and O'Reilly VP, noted that far from having "crashed", the web was more important than ever, with exciting new applications and sites popping up with surprising regularity (O'Reilly, 2005). They observed that companies that survived have several characteristics in common. They are collaborative in nature and there is blurring of lines between content creation and consumption.

3. Application of web 2.0 in Libraries

Web 2.0 is now widely adopted in many libraries in one form or another. The following lines highlight some example of these applications in some new age libraries. Libraries are increasingly enhancing their website by introducing web 2.0 features. Several libraries have used the wiki tool in the provision of services. At The National Library of Singapore, a wiki-like platform created for the LIS professionals to work

collaboratively, and concurrently on providing answers to the users enquiries. This allows any staff to tap on the collective wisdom of the communities of subject librarians and provide quality answers to their queries. Besides using wiki as a collaborative tool, some libraries have used it to create research guides, for eg. *The Ohio University* created a Biz wiki to assist business researchers with their research. The Biz wiki contains a variety of content, including information about reference books, websites, research guides, how-to-documents and more. An advantage of using the wiki to create the research guide is the ability to add and edit content easily and anywhere to keep it updated. The wiki also allows the librarian to determine which content are used most this can influence the type of content to focus on.

The use of messaging such as Twitter and SMS text messaging has enhanced library services via hand phones. The latter have also been incorporated into enquiry and reference services. SMS is an ideal way to reach out to a greater pool of potential users of reference enquiry service. Adding the advantages of portability of the cellular phone and ease in using SMS, it becomes clear that SMS provides an alternative and potentially ideal mode of posting reference enquiries for users. The National Library of Singapore has launched the SMS Reference Service as an additional convenient channel for users to pose questions. Libraries have also used web 2.0 platform as a channel for collection development. For eg. The National Library of Australia has used Flickr to expand their collection of pictures on Australia.

4. Web 2.0 based Information Services

4.1 Weblog

A typical blog consists of text, images and links to other blogs. There are different kinds of blogs. A personal blog is an ongoing diary or commentary by an individual and it is traditional, most common blog. Some sites such as Twitter allow bloggers to share thoughts and feelings instantaneously with friends and family, and it is much faster than e-mail. Corporate blogs can be used for business purpose, for marketing and public relations. Some blogs focus on specific subjects, such as travel or music. A blog comprising of video as called vlog. A blog can also be defined by which type of device is used to compose it. A blog written by a mobile phone or PDA could be called Moblog.

4.2 Streaming Media

The name refers to delivery method of medium rather than the medium itself. Streaming media are multimedia that are received and delivered either live or on demand by the streaming provider. 'Live Streams' are provided by a means called 'True Streaming', which sends audio or video straight to the computer or device without saving the file to the computer or device without saving the file to the hard disk. 'on demand streaming' is provided by a means called 'progressive streaming'.

4.3 Streaming Video

Streaming video is the video content sent in digital compressed form over the internet and displayed by the viewer in real time. Here the web user need not wait to download a file to play it. Instead, it is sent in a continuous stream of data and is played as it arrives. The user needs a 'player' which is a special program that encompasses and sends video data to the display and audio data to the speakers. A player can be either an integral part of a browser or downloaded from 'software makers' website.

4.4 Video Podcast

The term 'Podcast' is described as the distribution of digital media files, including audio and video via RSS enclosure or Atom. The term 'video podcast' also refers to the distribution of video where RSS feed is used as a non-linear TV channel to which consumer can subscribe using PC, TV media centre or Mobile multimedia device. Web TV series is often distributed as video podcast.

4.5 Start-page/Home Page

The home page is the local file that automatically loads when web browser starts is. The term is also used to refer to the front page, web server directory index, or the main web page of a website of a group, company, organization or an individual. Recently, same category of home page is being called 'start page', which is actually a personal web portal. A short page is a website or a page meant to organize links or information for the user when a web browser starts.

4.6 Wiki

Wiki is a website that allows the easy creation and editing of any number of interlinked web browser using simplified mark-up language or text editors by using registered member. Wiki is often used in schools and other institutions for group learning. Wiki supports hyperlinks and has a simple text syntax for creating new pages.

4.7 RSS (Really Simple Syndication)

It is a family of web feed formats used to publish frequently updated works, such as blog entries, news headings, audio and video in a standardized format. An RSS document, which is called 'feed' or 'webfeed' includes full or summarized text, plus metadata such as publishing data and authorship, web feeds benefits publishers by letting them syndicate content automatically.

4.8 Instant Messaging (IM)

Email is most frequently used by million of users but, e-mail is not instaneous and one needs to follow a set of steps to send or open an email on the other hand, with instant messaging (IM), one can keep a list of people he interacts with. He cans IM with any one on contact list as long as that person is online. The users can méssage to the other partner into a small window that shows up on both the screens. Most IM programs provide for exchanging messages, chat, share links, to favourite websites and send multimedia data like video, audio, images etc.

4.9 Social Networking services:

Social Networking service is individual – centred while online community services such as bulletin board service are group certred. Two categories of social Networking sites are internal social Networking and External social Networking sites. Internal sites are for closed community that consists of a group of people, within an organization; where as External sites are open for all web users.

4.10 Mash Ups

A Mashup is a web page or application that ages or combines data or functionality from two or many more external sources to create a new service. 'Retrivr' software allows conflating data from two different web sites. The term 'Mashup'

primarily used to describe a remix of digital data. It implies easy, fast integration, frequently using open application programming interfacing (API) and data sources to produce enriching results.

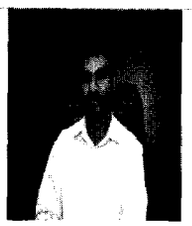
5. Conclusion

Web 2.0 is yet another wave of rapid development driven by user-centred change that revolutionise and evolves libraries to deliver a new range of functions and services to meet the varying and new demands and purposeful change, engages users in the creation of physical and virtual products and services that are being constantly evaluated through feedback, contribution and conversations. Many libraries around the whole have embraced there changes quickly and users now witness a proliferation of new services and functionalities that are unheard of few years ago.

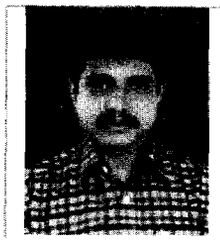
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Web 2.0 and Social Media: Its Implications on Libraries in Digital Environment

Lakshmi Kantha Reddy J R

Abstract

The paper presents the implications of Web 2.0 technologies, on activities of libraries. Web 2.0, is handy to plan, design, implement libraries web page and invite users' suggestions to improve library services, web page, and orient users about library services. Social networking allows user to interact and work with other users. It helps the librarians add value to their profession. The paper describes the implications of social networking on library and information services. An attempt has also been made to illustrate different social software tools and their effective utilisation in the social networking environment. Some examples of Government Departments, which are using social media, are mentioned.

Keywords: Web 2.0, Social media, Social networking, Information services

1. Introduction

Social Media is a good servant, but a bad master. It is an instrument of change, a driver of connectivity and a vehicle for rapid information sharing, which has played a vital role. In today's world, opinion and viewpoints on this instrument of change has a lot of influence. During Osama's election campaign on Anna Hazare led anti-Corruption movement in India, social media has played, a very important role in spreading the word around and influencing the mass.

In libraries to promote their services, and to offer their users to participate in a collaborative exchange with their libraries, social networking is a new approach. It also allows users to build relationships with the library staff and other library users. Social networking sites MySpace.com, Friendster.com, and Facebook.com allow users to create pages in which others can view and provide feedback. Some libraries have created Flickr, MySpace or Facebook pages to promote and extend their library services such as reader's advisory, and third party applications can add increasing usability to pages. On the other hand some libraries have barred social networking websites like YouTube, Flickr, MySpace.com, Friendster.com, and Facebook.com in their libraries. Library professionals should have skills and competency, to equip with these social networking tools such as RSS, Wiki, Blogger, Flickr, Library Think, Elf and so on. With the introduction of social media in libraries, the credibility and value of librarians will get a boost. For this, the user needs to be empowered with web 2.0 technologies and services which can be applied in the current scenario of information Era.

2. WEB 2.0 Technologies

Web 2.0 technologies are either free or use inexpensive software that the average librarian can use without knowledge of coding or HTML. Web 2.0 is mainly oriented towards generation of content by users and share their content and information. They are user created and maintained with little assistance from library

and they can exist independently outside the library website or can be linked to it. These technologies bring awareness among information seekers by using Library 2.0 technologies mentioned below: RSS, Wikis, Blogs, Social Bookmarking, Mash-ups, Personalized Toolbars, Social Networking Software, Synchronous Messaging, Podcasting, Photo Sharing, User Reviews / Ratings and Semantic technology Library staff must be aware of these tools, learn to use them, and seriously examine how they might improve or change services that they provide. Internet is a dynamic and interactive environment in Web 2.0, whereas in Web 1.0 the internet was concentrated for push type applications, like an online dictionary and repository of static information. Instead Web 2.0 solutions invite all internal users to share, collaborate, and contribute in the development of website.

3. Social Media Products, Tools, associated technologies and its services

The main purpose of Social Media is to provide news or information for users, links to recommended Internet Resources, book reviews, information about new books, entertainment or amusement for users, news or information for librarians, book discussions. The following web 2.0 tools are interesting and useful in terms of the convenience or productivity for both technical and non-technical. It includes community created content sites and other content sharing sites. This is not an exhaustive list. One can search internet and find many more.

- Flick http://www.flockr.com.
- YouTube http://www.youtube.com.
- Twitter http://twitter.our.home
- Yelp http://www.yelp.com.
- Del.icio.us http://www.delicious.com.
- SlideShare http://www.slideshare.net
- MySpace http://www.myspace.com.
- Facebook http://www.facebook.com

4. Library 2.0 and Social Networking

The use of social networks by libraries and information centres is prevalent and a growing tool that is being used to communicate with more potential library users. Various social networking sites like Flickr, Twitter, Slideshare, Facebook, Myspace, Orkut etc. can be used for this.

Libraries should explore social networking technologies to create and market library services, Facebook provides a flexible space to interface with a large number of users. Home-grown applications for Facebook have been created by libraries to answer reference questions, search online public access catalogs, and host multimedia collections. Where, a library whose users are often widely dispersed, Facebook offers several opportunities for outreach and instructions. Many librarians use Facebook personally and professionally They also use it to bolster awareness of library services, set up book clubs, and create online study groups.

5. Indian Government Agencies and Bodies using Social Media

Some of the state and central government agencies are using social networks for

various purposes as mentioned below:

- **Delhi Traffic Police** has utilized face book to give timely advice on jams, accident, and other traffic updates
- **Kerala and M P Tourism Departments** using social media Facebook
- **Maharashtra Police Department** has launched an SMS based complaint tracking system.
- **Ministry of External Affairs** has using twitter and you tube
- **Municipal Corporation of Delhi** has integrated its website and allowed online application for birth certificates, RTI appeals, tax submission form etc
- **Post Office India:** Opened an account on Twitter to address the queries posted by users in relation to their letters and parcels etc
- **Census 2011:** The face of census 2011 allowed filling in thus complete and accurate information on face book and twitter
- **Planning Commission of India** through Facebook it urges users to submit their expectations and ideas for the 12th five year plan
- **Railway Police** has opened its account on face book to address passenger complaints

6. Opinion about Social Media

A library can use a social networking site as a form of communication with other users especially in school libraries, students needs help with their homework or have a question about an assignment, they can post it up on their local library's MySpace page. "Ask a Librarian" has a MySpace where users can ask questions from anywhere and will get a response back immediately. Libraries use blogs on MySpace to show the upcoming events in their library. Facebook also has "Ask a Librarian" and includes applications such as LibGuides, JSTOR, WorldCat and Books iRead. It even has a group for various library applications.

While the libraries can use MySpace and Facebook for good, there are also people on social networking sites who are considered child predators and pretend to be someone else. These predators try to convince young adults or teens of being their online "friend," and that is the biggest problem with social networking sites. Alegating eminent leader for small mistakes or due to wrong communication, giving sensitive information some time leads to problems. Facebook flirting triggers divorces, the most common reasons for casing problems in relationships were a a spouse finding flirty messages, photos of their partner at a party they did not know about or someone they should not have been with Source: Times of India, 1st Jan 2012, Bangalore Ed. Among libraries already using social media, majority of them did not have a strong opinion about success of their libraries. Presently, most libraries did not see a need or a use for a library Facebook page, with the exception of marketing the library or promoting library events. More time is required to maintaining and monitoring their sites.

6.1 Social Media familiarity among public

Estimated Number of Social Networking users are more than 940 million, 7 out of 10 Internet Users are active on atleast one Social Network. Social networking has become an effective medium for advertising and marketing. 9 out of 10 Marketers use Social networking to promote their business. This shows the universe size of active

social networks. Social networking is now so big and touches every aspect of our internet experience. This data reveals that Chine, USA, India, Brazil, Russia are top 5 countries among active social network users with 155.29, 114.55, 35, 33.5 and 26 millions users respectively.

Country	Active Users (in mils)
China	155.29
USA	114.55
India	35.08
Brazil	33.49
Russia	26.06
UK	19.27
Indonesia	18.93
Germany	18.81
France	15.92
Philippines	14.43
Japan	13.66
Mexico	12.8
Italy	12.66
Poland	12.03
Canada	11.72

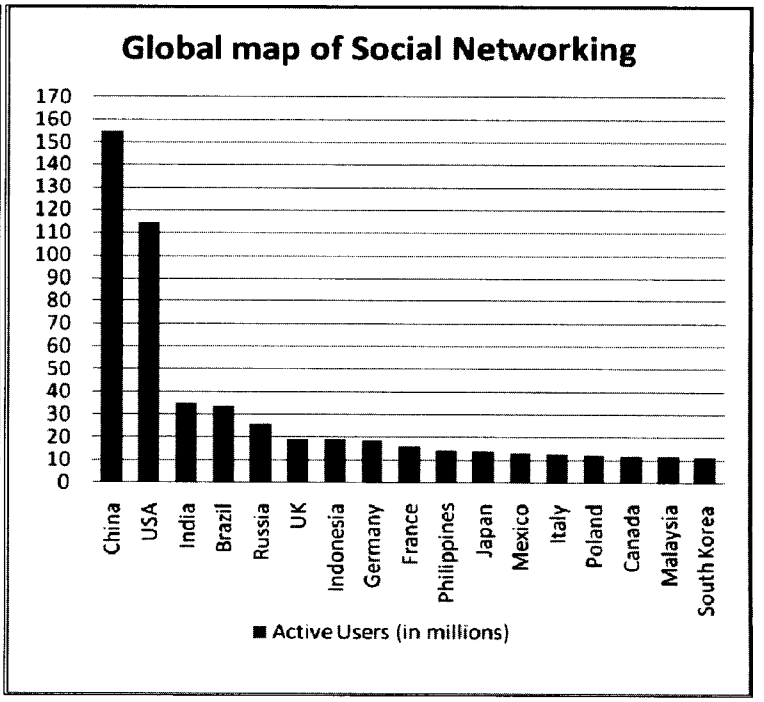


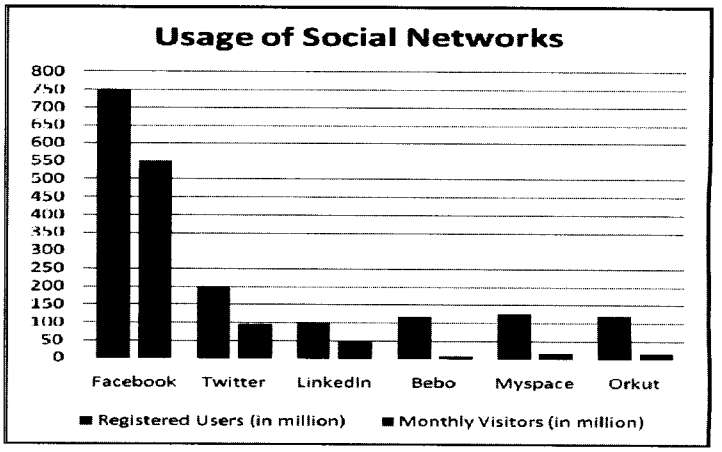
Table 1. **Social media familiarity among public.**
(Source: http://glogalwebindex.net Accessed on 16th Dec 2011)

6.2 Popularity of Social Network

The bar chart represents popularity of social networking sites on the Internet. Social networking behemoth FaceBook.com attracted more than 800 million global registered users and 550 million monthly visitors, and addition of 250 million photos daily. Twitter.com has strong growth with 200 million tweets a day. Popularity of social networks is increasing widely as depicted.

Table 2: Usage of Social Networks

Network	Registered Users (in million)	Monthly Visitors (in million)
Facebook	750	550
Twitter	200	95.8
LinkedIn	100	50
Bebo	117	7
Myspace	125	15.7
Orkut	120	14.4



Source: http://www.ebizmba.com/articles/social-networking-websites
(for monthly visitors, Accessed on 16th Dec 2011)

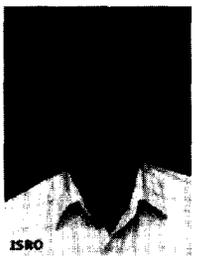
7. Conclusion

Those libraries that are using Facebook, Myspace, Flickr, Slideshare, Youtube are using it mainly to market the library, push out announcements to library users, post photos, video, documents, PPTs, provide chat reference, and have a presence in the social network. These libraries feel positive about the future success of their Facebook presence. However, only few libraries use social media and presently libraries are inconclusive in determining whether or not social media is a useful and effective application for libraries

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Web 2.0 is not Semantic Web?

Kannikaparameshwari G **Mahadevamurthy M** **Chandrashekara M**

Abstracts

Today people may talk about the World Wide Web, Web 2.0 or the Semantic Web. There are a lot of misconceptions about their similarities and differences, and also where the technologies inherent to each overlap, if they overlap at all. The biggest misconception is that the terms Semantic Web and Web 2.0 mean the same thing; for this reason this paper investigates the similarities and differences between the WWW, Web 2.0 and Semantic Web. We have to understand what Semantic Web is or what not Semantic Web is. The Semantic Web is the future generation in WWW technology. It predicts information from different sources being easily combined and used in extremely different and more powerful ways.

Keywords: Semantic Web, Web 3.0, Web 2.0, WWW, World Wide Web

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WiBFaT: The Pivot of Innovation in the Modern Marketing Mix of Libraries in the Web 2.0 Era

Ramasamy K **Padma P**

Abstract

Every institution strives hard to exist in the market adopting various marketing strategies to create potential customers, to convert them into actual customers and to retain their actual customers for ever. Library and information centers (LICs) are not an exception. Because, they too are involved in the process of acquiring/accessing/creating the information required by their readers, designing, condensing, re-packing and delivering the so-generated / accessed/ acquired information in the most suitable form in the right time. Having realized the importance of marketing, now-a-days the library professionals have taken up the new tools of library 2.0 as different elements of modern marketing mix. This paper tries to give a comprehensive account of four elements of modern web 2.0 marketing mix viz. Wikis, Blogs, Facebook and Twitter in respect of their usage in marketing of library products and services.

Keywords: Societal marketing, Marketing cycle, Marketing mix, Social networking, Social media, Marketing tools

1. Introduction

The effect of e-era on the libraries have pushed the libraries to plan and devise suitable marketing strategies so as to enable them to have perennial user community who otherwise are happy enough to get the required information in different formats and forms in the modern digital information industry. The competition prevailing in the information market urges the library professionals to re-think on the lines of using modern marketing tools including those which are of recent origin born out of the wedding of computer and communication technologies. The interactive tools offered by web 2.0, transitioned into library 2.0, are of much assistance to the information scientists and working library professionals in uprooting and adapting these tools in their marketing task. Blogs, wikis, twitters, mashup applications, Instant Messaging, RSS feeds, podcasts, screen casting, foursquare, social tagging and bookmarking tools like de.li.ci.ous & social media tools like facebook and orkut are in the welcome queue for us to explore and utilize their potentialities in serving our users community right time with right information in right way in right format any time anywhere.

2. Library marketing

Library Marketing is defined as a planned approach to identifying, attracting, serving and gaining support of specific user groups in a manner that furthers the goals of the library and the organization that supports it. A common thread that is found in all such definitions is quality customer service, community involvement ("community" and customer networking), and anticipating and thriving on current and future changes, all liberally sprinkled with professional excitement.

3. Marketing + Information technology = Infotech marketing

With the development of the web, the marketing concept has mixed up with information technology. Viral marketing is a form of targeted marketing, to assist websites increase their web presence and to promote their product or services through internet such as Search Engine Marketing; Search Engine Optimization; Banner Advertising; Directory Submission; Email Marketing and many more. Internet Marketing is more economical and faster way to reach out the customer (users) directly but where as traditional marketing is non targeted marketing deals with customer (users) more precisely, and is sometimes called personalized marketing or one-to-one marketing. Social Networking tools like MySpace, YouTube, Digg, Ning, Facebook, Wiki, RSS Feed, Meebo etc have made it relatively easier to reach out to a wide audience in comparison to traditional marketing.

4. Library marketing cycle

- Formulate a mission for your information service / library (where do we want to be?)
- Review current position (where are we now?), and identify opportunities, using techniques such as SWOT and PEST
- Formulate marketing objectives
- Undertake market research
- Modify marketing objectives
- Formulate marketing strategies (how do we get there?), balancing various components of the marketing mix
- Implement marketing strategies.
- Monitor success (how do we find out whether we got there?)
- Review strategies - and objectives and mission if necessary (starting again from the top)

5. WiBFaT- New Elements web 2.0 Modern Marketing Mix for the Libraries

The web 2.0 has paved the way for the library professionals to carve out a new dimension for Marketing Library Products and Services (MLPS). The various elements of modern library marketing mix may include a variety of library 2.0 tools and techniques. The very important web 2.0 tools that can be used effectively by the librarians in marketing the library products, library services, their libraries and even themselves are, inter alia: Wikis, Blogs, Facebook and Twitter.

6. Wikis for MLPS

- The first way in which wikis can be beneficial to the library is that open editing on various websites allows many individuals to participation in the development of that content. This helps to build the community by allowing many different individuals to engage in a number of topics.
- The second way that wikis can benefit the library community is by developing a large database of relevant information dedicated to library and the many interests of this particular user group.
- The next method in which wikis can be beneficial is through the unique collaboration of numerous library professionals in communicating ideas and

concepts across all networks. This can help individual library professional benefit from the expertise of more advanced professionals.

- Wikis normally have a simple user interface that allows individuals from all educational backgrounds to participate. From the complex user interface, wikis has taken the users to an adjusted interface so that many different people can adjust content and participate across various networks.
- When a librarian uses wikis in order to edit content on forums and websites, he/she develops bonds with other users on the websites. This helps in establishing trust and expertise behind the websites and products that you market. In addition to this, it may assist you in gaining referrals, or a downline.
- When an individual uses a wiki, users can share their positive experiences with others when it comes to the program and the products involved. If users are prompted enough by a particular program or item to share their experience with other users, consumers may research the things that you are promoting. This is a great way to gain exposure, in a positive light.
- You can actually start a blog as a librarian by using wikis. This is a great way to establish your knowledge on the information that you are trying to promote. If others view you as an expert, they are more likely to buy-in to what you are advertising.

7. Blogs for MLPS

1. **Humanize your library:** Because a blog is much more informal than other websites, you can write posts in your own voice and give your library more of a human face. This helps reassure prospective customers that there's a "real person" behind the website who'll take care of their needs.
2. **Improve your reader's service:** Your blog can act as a kind of interactive FAQ, allowing your readers to submit questions and you to answer them. You can also provide updates, how-to articles, and other information of relevance to your users.
3. **Give your target market the information they're looking for:** With its automatic archiving feature--by date and category--a blog is a fantastic content-management system. It's easy for you to post new information on a regular basis, and it's easy for your visitors to find the information they want.
4. **Drive traffic to your main library website:** If you already have a website, a blog can give your traffic levels a real boost. For starters, your blog will attract new visitors that you can then redirect to your library website through links.
5. **Build your credibility and establish yourself as a professional expert:** You can give your credibility a real boost by regularly posting valuable and relevant information on your blog. It's a great way to establish yourself as an expert in your subject area, and allow your visitors to feel much more comfortable getting services from you.
6. **Promote your products or services:** You can actually promote products directly from a blog, or you can use your blog to mention new products & services and direct visitors to your main library website.

7. **A tool for building customer loyalty:** Blog users are best placed to confirm that blogs are a strong loyalty-building tool. The interactive aspect of blogs stimulates exchange and incites Internet users to return regularly to follow the discussion and even participate.

8. **A tool for promoting events or ad campaigns**: The ease with which blogs are published and distributed on the Internet makes it possible to rapidly start a blog for a specific event, thereby guaranteeing that it will receive wide notice in very little time. In this manner, an organization can stimulate interest in an event and even offer publicity opportunities for partners.

9. **A tool for competitive intelligence and research marketing:** Due to the freedom of expression that the blog format encourages, blogs are an important source for gathering competitive intelligence and marketing information. By researching blogs specific to your industry you can learn much about the services offered by your competitors and you can also discover a surprising amount about your own firm.

10. **Promote Library Events:** Create a blog that promotes library events and programs. Reach out beyond the visitors to your regular Web site. Set up an RSS feed for your blog and alert everyone in your community that they can include your headlines on their sites or can use an RSS newsreader to see what's up at the library.

11. **Support Your Dedicated Users:** An obvious hit with most library visitors is finding out what new books, videos, CDs, or DVDs have been added to the collection. Think about setting up topics on your blog for each genre: mysteries, horror, science fiction, romance, and so on. In an academic library, prepare special alerts about new resources and Web sites for particular departments or colleges.

12. **Engage Your Community:** Post new book reviews and book award lists. Invite comments and suggestions. Create an online book discussion area by asking readers to recommend books to others.

13. **Support Your Community:** Librarians are always looking for ways to offer value-added services. Can you offer a special service with the blog and reach a new audience? A local election news blog that posts announcements about candidate Web sites, nominations, and meetings might be a natural project for libraries that are mandated to make local council minutes and agendas available to the public.

14. **Building New Ties:** Are you trying to reach a new area of your community? What about offering a blog in another language to provide short entries on upcoming programs and new resources? Perhaps you are trying to reach out to teachers in order to market library services and to make sure that school visits work effectively for the library and the schools. What about starting a blog-style newsletter that's just for teachers? You can focus on special services for teachers, programs for schools, new research resources, book lists, and seasonal Web sites of interest. Some blogs allow you to have extended entries and include feature articles.

8. Facebook for MLPS

1. **Branding and Free Advertising:** With its over 600 million members worldwide, Facebook is a great way to generate brand awareness. Free advertising occurs when your fans will "like" your page and recommend them to their friends.
2. **Customer Interaction:** Facebook is a good medium to interact with your customers. You can communicate promotions, events and contests. You can ask for ideas from them on how you can improve your products or services.
3. **Networking:** Facebook was indeed created to build networks of people. You can search for people or businesses in the Facebook platform who are involved in your industry and become a fan of a page or profile. By being connected to them you increase your visibility to your target customers.
4. **Drive web traffic:** Facebook will serve as a gateway that will lead to your website. With the recent updates in the Facebook system, websites can now be linked to Facebook profiles and pages.
5. **Reputation Management:** Fans can post anything they want and thereby the possibility of a destructive comment is high. Or sometimes some people may be against the organization and will cite a campaign attacking and destroying your brand's reputation. Facebook, as an interactive media can be used for reputation management by answering back to those bad publicity and clarifying some misguided information.
6. **Provides you with a very specific marketing plan (SDI Services Marketing)**: This is very useful when doing marketing for your library because you need to choose the right readers for you that are worth your time and effort.
7. **Great for local businesses:** With its very powerful search features, you can filter the lists of your potential local readers instead of spending hours and hours on worldwide readers that have no interest or need for your product or service.
8. **Connect with experts:** This is a great advantage for your library, as Facebook connects you with professionals in your field so they can help you or exchange valuable information with you.
9. **Targeted traffic:** Facebook is considered one of the most valuable traffic sources available over the internet. That's because it can provide you with targeted traffic that has an interest in what you're offering; this will give you a very good conversion rate.
10. **Easy way to communicate:** It provides you with very useful tools that help you communicate with your customers and share valuable information with them.
11. **Customer Engagement:** Using Facebook applications can be a great way for communicating promotions, contest and events. Again it is another interception point that can be leveraged to entice consumer engagement with your brand, your products or your service.
12. **New Customer Acquisition**: Facebook provides an opportunity to find readers you may have not otherwise discovered.

13. **Lead Generation** - Facebook can act as another potential lead gen tool that can be used to qualify leads. Reviewing potential prospects' profiles may help you build a relationship with your prospects and aid in the lead generation qualifying process.
14. **Client Retention** - provides another potential interception point to build the relationship with your consumer.
15. **The Viral Effect** - Take word Of mouth to a whole new level. Nothing attracts a crowd like a crowd... Facebook is attracting quite a crowd.
16. **Feedback Mechanism** - Using Facebook and the various applications available can help you understand consumer behavior based on the sharing of content and commentary on the social networking site.

9. Twitter for MLPS

1. **Partipating in Industry Conversation**: Your target audience and/or potential readers are on Twitter where they may be discussing their information needs or are communicating positive library experiences.
2. **Brand Awareness**: You can use Twitter to keep your library and its products top of mind. Whether you are promoting a conference or promoting a new service in your library, Twitter allows you to keep your brand out there for people to engage with.
3. **Use Twitter to gain Competitive Intelligence:** Your fellow library professionals are on Twitter. As a result you might want to consider monitoring their tweets from time to time to see what they are working on. Perhaps they are preparing to launch a new product or service.
4. **Engage with your target audience**: Twitter allows you to interact with potential prospects and your target audience. While you do not want to be "in their face" all of the time, Twitter does allow you to engage with these people by re-tweeting their posts or responding to something that they may have tweeted about, which leads us to.,
5. **Online Reputation Management**: Information on Twitter breaks quickly. You can use Twitter to monitor what is being said about your library / it's products / it's services almost in real-time.
6. **Promote your Blog Content**: If your library has a main blog or various blogs, you can use Twitter to promote your blog content. You can set up a feed to automatically post your blog post URLs directly to Twitter.
7. **Understanding Tool**: You can use Twitter as an understanding tool to learn what their desired target demographic is saying and looking for. For example, if you are a brand that targets a younger target market, just by listening to their conversation via Twitter, you can learn what their latest interests are and what's the next shiny new object that they are looking to latch on to.
8. **Feedback Mechanism**: Launching a new product/service? Perhaps you are launching a new website? Your library can use Twitter to obtain instant feedback

on these items and as a result make any necessary changes before the formal launch.

9. **Promotion**: Of course you can use Twitter as a promotional tool to announce offline endeavors or upcoming online events (webinars, virtual tradeshows etc). The fact is you do not want to be too promotional, but Twitter does present the opportunity to promote your products or service and brand to your friends.
10. **SEO Boost**: If you have great content on your website and you want to drive additional traffic to this content on your website, you can use Twitter to do so. A quick tweet with the URL can help drive additional traffic to a preferred landing page on your site to help coax the conversion on your site.
11. **Ask Questions Receive Answers:** When you are looking for a specific answer to a question that you have, you can use Twitter to pose the question and if the question is engaging and if your friends are remotely interested in the same question, you will receive a response.
12. **HR Tool**: You can tweet about your HR needs and link to relevant job postings on your site via Twitter. You just might receive some additional interest that you may not have otherwise had.
13. **Press Release/News Management**: Have a major announcement? Use Twitter to promote your press releases and to communicate library news.
14. **Internal Communication Tool**: You can use Twitter as an internal communication tool within your business. E.g. employees are encouraged to tweet. The timeliness of the information plays a key role in using Twitter as an internal communication tool. Using Twitter to communicate internally can also be an effective way of sharing information within.
15. **Social Networking:** In situations where the library's target audience does not frequent Twitter, the platform could still be used by the library to connect with library leaders that are in the library profession and engage in relationship building that will benefit the business bottom line.

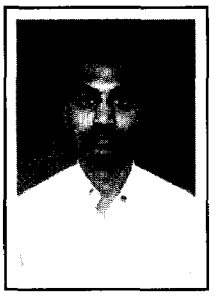
10. Conclusion

Everyday a new technology is born in the digital world. Every moment offers an innovative use of the available tool/technology in this semantic web world. To quote a sample, Foursquare is one of the newest forms of social media librarians are currently exploring, and folks are using it in a variety of ways. Generally, putting your library on Foursquare is almost guaranteed free marketing. Since users can add tips/comments to any location, Foursquare offers a chance to hear what your users are saying and to engage with them through response. The only thing what is required from our side is that we, the library professionals, should explore and keep on looking for the new avenues available in the present IT-embedded business environment, that will help us to be able to reach and serve our readers community in a better and productive way. The library professionals should trace out every opportunity hiding in the names of modern internet jargons and social media tools and techniques and adapt them to achieve our mission – providing right information to the right users in right time in right way in right format anywhere anytime.

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A Research on Digital Library Based on Semantic Web Service

Ravish PY **Nagaraja Naik M** **Gudimani MC**

Abstract

System integration, based on the combination of computer-related technology and the semantic theory in linguistics, has gradually become a hot spot. The main purpose of its study is to extend the current World Wide Web, and make the network information carry semantic meanings so as to be understood by the computer easily and improve the interaction between computers and human. Its research focuses on how information can be processed by the form that a computer can understand, that is with the semantics. Characteristics of the Semantic Web Service also make its application in the integration of digital library systems become a possibility. The research on the combination of digital libraries and Semantic Web Service is being undertaken.

Keywords: Semantic web, Web service, Digital library, WWW, Web

1. Introduction

During the construction of current digital libraries, with the application level gradually increasing and the application goals enhancing, integration has become the trend, but how to integrate? What are core values of integration? How to make integration more efficient? Semantic Web was formally proposed in 2001 by Tim Berners-Lee called the WWW-founder, and it is a change in the nature of the World Wide Web. Tim Berners-Lee gives the hierarchical relationship of Semantic Web, which is mainly based on XML and RDF/RDFS, and on top of that build ontology and logical inference rules in order to complete the semantic-based knowledge representation and reasoning, to enable the computer to understand and process. Furthermore the Semantic Web and Web Services can be a very good together, that is the Semantic Web Service. These characteristics of the Semantic Web Service, also make its application in the integration of digital library systems become a possibility. At present, Semantic Web Service has begun to apply to competitive intelligence systems, knowledge management systems, enterprise management information systems. The research on the combination of digital libraries and Semantic Web Service is being undertaken.

2. Semantic web service

"Web services are software applications identified by a Uniform Resource Identifier, through XML implements definition, description and discovery of the interface and binding, at the same time supports direct interaction with other software applications using XML by Internet Protocol-based." Web services are components that are able to describe, publish, position and call related contents by any network. And without special design, it can execute dynamic configuration, combination to complete the process from simple calls to complex business processes.

Table1 shows several major differences between traditional Web services and Semantic Web services.

Table 1: Traditional Web services and Semantic Web Services Comparison

Compare items	"traditional" Web services	Semantic Web Services
Service	simple	complex
Service requestor	person	computer(process/agent)
Service Description	lexical based	ontology based
Data exchange	syntax based	semantic based

Semantic Web services use markup language (eg, OWL-S) to enhance semantic descriptions of Web services. Semantic descriptions cause external agents and procedures to find, compose, and invoke Semantic Web service. The fundamental task of Semantic Web service research is the Web services marks to make Web services into a computer-readable, user-transparent and easy-handling entity. If Web services use semantic information, the implementation of services will be expected to reflect better the objectives and constraints of users, and get more accurate results, thereby enhancing the accuracy of the results of Web services execution; From the point of the combination of Web services, Web services based on semantic information can cause effective use of knowledge representation and reasoning to guide and supervise the service combination.

3. Digital library system integration model construction based on semantic web service

From a system point of view, using the process of thinking, starting from the lowest sources of information to the user interface layer, the authors construct a bottom-up system integration model based on the Semantic Web services, as is shown in Fig3: Comparing with the general model, the Semantic Web Service-based digital library system integration model that we construct has the following advantages

3.1 Web services automation

While the Web services technology provides a good mechanism for heterogeneous systems interoperability and integration, the traditional Web service technology, lack of good semantic support, can not implement dynamic discovery, combination of services. Semantic Web research achievements will be introduced into the Web services to form the Semantic Web Service, and through well-defined semantics, Web services can be automatically discovered, combined, executed, to achieve interoperability.

3.2 To form a centralized, unified storage repository for digital library system

On the Semantic Web service platform, the inquiries and other services heterogeneous database systems provide to the outside can be packaged into a corresponding semantic-based Web services, and provide a unified interface for users to access. The users' direct access to these databases becomes indirect access to Web services.

3.3 To retrieve intelligent

We construct retrieval strategy based on the semantic Web technology, making information retrieval up to semantic level, thereby enhancing the precision rate and recall rate.

3.4 Information resource planning

Strengthening humanities research, we set up the link of information resource planning. The integration of resources or systems must be selected to undertake in order to enhance services targeted, to improve service effectiveness, and save time costs and retrieval costs. Therefore, digital library integration model based on Semantic Web Service is built on the basis of comprehensive consideration of humanities, technology, and economic aspects. The authors believe that systems integration model built only combining three kinds of means of humanities, technology, and economic can get greater adaptability, and stand the test of time. Information system development and application of the history of practice also shows that a purely technical means can not achieve effective control and use of information; socio-economic development and information as an important strategic resource for economic function also compel us to consider system construction from an economic point of view. Thus, the organic combination of three kinds of means above is the only way to build systems and models, and represents the development trend of the future.

4. Realization of System Integration Model

The model system can mainly be divided into two parts, which from bottom-up can be simply described as the digital library system integrated processing and the digital library system function query. We will analyze the implementation process in detail.

4.1. The Main Module of Digital Library System Integration Processing

Semantic Web Service integration module is the first step in integrating the raw data, which includes two processes-the Semantic Web service creation and Semantic Web service processing.

The service generation part is responsible for the work of generating services and publishing interface, and its operation process is: Semantic Web Service Designer (SWSD) create Semantic Web services by using ontology annotation source code; Semantic annotation transforms the annotation source code into annotation WSDL, the process of which actually completes the semantic annotation of Web services description information; The Service Delivery Interface publishes these descriptions to the enhanced Universal Description Discovery and Integration protocol (UDDI) for the use of service processing. Based on UDDIv2, enhanced UDDI is generated by adding to a layer of contents for the semantic description. What need to explain is that we use WSDL, OWL-S, DAML-S as the way to describe the services.

4.2. The Main Module of Digital Library System Function Query

The prominent feature of the digital library system service function is the integrated processing of the search query process by use of Semantic Web Service. Specific analysis is the following:

4.2.1. User Interface: The user interface is between the user and computer systems, and is the media of transmitting, interactive information between people and computers. It is also the integrated operating environment that a user uses the computer.

4.2.2. Query Semantic Conversion: To give the user queries from the user interface semantic processing by use of OWL-S, DAML-S ontology language. Based on artificial intelligence, knowledge representation, OWL-S and DAML-S provide a natural way to describe the relationships of classes and subclass between the words in the Web, as well as restrictive relations of classes and classes (or sub-classes and subclasses). They added more terms of describing properties and classes than the RDF pattern, such as the non-intersection and equivalence between classes, more extensive property types and property characteristics.

4.2.3. Ontology Inference Engine: With the rapid development and extensive application in the search engines of ontology-the core of Semantic Web Service, Ontology inference engine emerged, and also became a core application technology of information retrieval based on the Semantic Web service. It can invoke the professional ontology knowledge base to give the query inversion reasoning, and return all the sets of semantic concepts related to current inputs.

4.2.4. Semantic Search Engine: Semantic search engine supports DAML semantic indexing and RDF triples. The system allows users to specify query terms, for example, what terms must appear in the query results, or what need not arise. Semantic search engine integrates a variety of techniques and Semantic Web service algorithms to facilitate the user's query on the one hand, and to enhance the accuracy of the query on the other hand.

4.2.5. Semantic Indexing and DAML Document Library: Rationally organizing the storage of information resources according to the DAML instance of information searched by documents collected, it is a normative description of all the resources from professional sites.

4.2.6. Query Results Processing: Displaying query results processed by semantic search engine to the user, it also can update the professional ontology knowledge base.

4.2.7. Professional Ontology Knowledge Base: Semantic sharing and common understanding on the same concept is the key to build the Semantic Web. In order to establish the Semantic Web, what is firstly needed is a common semantic representation model that can be understood by all the applications to realize the description of the concepts and the relationships of different areas. Through these concepts and relations it can realize the description of network resources. The ontology library is just the kind of conceptual model that can describe network resources at the level of semantic and knowledge. It is the core of a semantic information retrieval system. It makes the information on the semantic web can be understood by the machine. The creation and management of ontology library is a time-consuming and complex task, but the reasonableness and the accuracy of ontology library will directly affect search results. It is the basis of the entire system. Ontology knowledge base is described by the ontology

language of DAML-S, OWL-S. It defines a variety of concepts and the relationships between them that certain professional fields require, as well as inference rules based on these concepts, including specialized vocabulary, specialized thesaurus and other specialized knowledge. This knowledge can be used for expanded query, as well as the classification of the concepts in order to achieve content-based queries of information resources. It is created jointly through continuous learning of domain experts and the system itself.

5. Conclusion

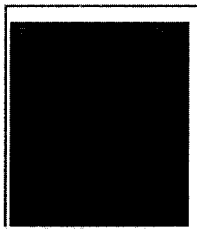
As information technology and network technology develop rapidly, and apply widely, digital libraries have the trend of accelerating development. However, there are always a wide variety of problems in the development process, and many information institutions are thinking about how to use advanced information technology to reshape digital library systems. Thus, with their own advantages, the Semantic Web service, data mining and OLAP technology are pushed to the forefront of the application. They have made great efforts in the improvements of the function and the structure of digital libraries. In this paper, I try to use the Semantic Web service technology to integrate distributed digital library resources together to realize the automation of web services, and ultimately form a centralized, united digital library system, on the basis of which semantic retrieval process constructed, whether in the recall or the precision, is more suitable to the development of digital libraries in the future.

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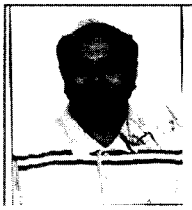
Authors Profile



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Computer-enabled Innovations in the Information Technology Rural Librarian Master's Scholarship Program: Bridging Rural Digital Divides in the Southern and Central Appalachia

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Williams K C **Susan Simmons** **Nancy Renfro**

Abstract

This paper focuses on computer-enabled innovations in the Information Technology Rural Librarian Master's Scholarship Program (ITRL) that has recently been funded by the Institute of Museum and Library Services' Laura Bush 21st Century Librarian Program to the School of Information Sciences (SIS) at the University of Tennessee (UT). The ITRL's purpose is to train sixteen paraprofessionals working in the Southern and Central Appalachian (SCA) rural libraries to complete their master's degree part-time from June 2010 – August 2012 in the UT's SIS synchronous distance education program. The grant combines work experience in regional libraries with graduate instruction and a curriculum that focuses on information technology (IT) and rural librarianship. This paper identifies the computer-enabled innovations in the ITRL to help bridge rural digital divides in the SCA regions.

Keywords - Information technology, Master's scholarship program, ITRL, Digital divide, Appalachia

1. Introduction

This paper focuses on the computer-enabled innovations in the Information Technology Rural Librarian Master's Scholarship Program (ITRL) that has recently been funded by the Institute of Museum and Library Services' Laura Bush 21st Century Librarian Program to the School of Information Sciences (SIS) at the University of Tennessee (Mehra, Black, Singh, & Lee, 2010). The ITRL's purpose is to train sixteen paraprofessionals working in the Southern and Central Appalachian (SCA) rural libraries to complete their master's degree part-time from June 2010 – August 2012 in the UT's SIS synchronous distance education (DE) program. The grant combines work experience in regional libraries with graduate instruction and a curriculum that focuses on information technology (IT) and rural librarianship (Mehra et al., 2010).

2. Context of study

The U. S. Bureau of the Census defines "rural" as areas with fewer than 2,500 people and open territory (Economic Research Service, 2007). *The Encyclopedia of Rural America* defines the related concept of "nonmetropolitan" counties to accurately describe the spread of housing developments outside the boundaries of metro areas that have no cities with as many as 50,000 residents (Rathge, 1997), in addition to being non-urbanized (Office of Management and Budget, 1998). The word "rural" in this paper is used with regard to both the meanings.

The Appalachian Rural Commission (ARC), a United States federal-state partnership, identifies Central Appalachia to include: West Virginia's nine southernmost counties, eastern Kentucky, Virginia's southwestern tip, and the northwestern portion of Tennessee's Appalachian area (Bush, 2003), while southern Appalachia includes: most of Appalachian Virginia and Tennessee, the western Carolinas and the northern parts of Georgia, Alabama, and Mississippi.

Digital divides based on geography and other variables (e.g., race, ethnicity, gender, income, education, age, etc.) are identified as the gaps between the haves and have-nots in their knowledge, adoption, access, and use of computers, Internet, and communication and information technologies (Hilbert, 2011; Mehra, Bishop, Bazzell, & Smith, 2002; U. S. Department of Commerce, 1995), be it at the local, regional, national, and/or global levels of comparison (Chinn & Fairlie, 2004; Norris, 2001). Rural librarians in the impoverished SCA region are on the lacking sides of the digital divide in the United States and experience critical information needs resulting from: information poverty, unemployment, economic challenges, low levels of information literacy and educational attainment, lack of access and use of IT resources, and other unique environmental and cultural circumstances (Appalachian Regional Commission, 2004; Kusmin, 2008; Oden, Strover, Inagaki, & Lucas, 2004; Mehra, Singh, & Parris, 2010; Scruggs, 2010; Shaw, Chen, Harris, & Huang, 2009). Their critical information needs have traditionally been inadequately represented in the library and information science (LIS) professions, and are only recently beginning to get some attention in LIS education (Mehra, Black, Singh, & Nolt, 2011a; Mellon & Kester, 2004). For example, recent research indicates that the SCA librarians have a strong desire to access professional library education that integrates IT and rural library management competencies to help their communities effectively address some of their debilitating challenges and circumstances (Mehra, Black, & Lee, 2010; Mehra, Black, Singh, & Nolt, 2011b). This paper focuses broadly on the computer-enabled innovations in the development and implementation of the ITRL in serving this need. The ITRL's curricular planning and design is outside the scope of this paper since that has been reported in other publications.

3. The ITRL student experience

ITRL is training rural librarians with IT competencies who can become change agents and bring a life-anchoring perspective and IT services/products to address the challenges of the 21st century facing the SCA communities. The ITRL students (who are paraprofessionals working in the rural SCA libraries) are provided scholarships for full tuition for their master's degree and a general stipend that might be used to cover travel expenses, books and fees, and costs to cover technology. Each ITRL student is also provided a laptop computer. The ITRL students are enrolled part-time, taking six-credit hours (two courses) each semester (summer, fall, and spring) beginning June 2010. Forty-two credit hours (14 courses) plus a comprehensive examination or thesis are required for graduation. Students will graduate in August 2012 at the end of their second academic year. The list of courses and schedule is available at URL: http://www.sis.utk.edu/itrl/course_requirements. Currently, the ITRL students are receiving this structured, individually-tailored curriculum with formal and informal professional mentoring by educators and practitioners. The ITRL curriculum is structured in that students are expected to take the three SIS required courses

(providing knowledge of the core functionalities in the profession, namely, information environments, information representation and organization, information access and retrieval), six courses focusing on IT, and five courses on rural library management and services.

IT deliverables for rural libraries in the SIS courses include: 1) Technology infrastructure planning and analysis; 2) Web design, development, and usability; 3) Database design and implementation; 4) Building digital library and web portals; 5) Establishing hardware and software networking; 6) Creating Library 2.0 tools. Management outcomes in rural library courses include: 1) Service evaluation in rural libraries; 2) Management of a rural library program for adults and children/young adults; 3) Reader's advisory; 4) Grant writing and development.

The Clinch-Powell Regional Library (Clinton, Tennessee), Sevier County Public Library System (Sevierville, Tennessee), and the Watauga Regional Library (Johnson City, Tennessee) and their leadership personnel are serving as project partners in the ITRL. Project partners have been selected to participate in the ITRL based on their leadership, role, knowledge, networks, experience, and interests to participate in promoting IT-based development and change in the SCA libraries and their communities. Though all the project partners are located in the East Tennessee region, representatives from other regional/county library systems in the SCA region are participating in the various activities identified in the grant proposal. This includes practitioner-mentors who are assigned to each ITRL student and work with the ITRL educators to advise, mentor, train, and tailor individual student's academic program in integrating IT competencies to meet the needs of their rural library and community. It insures that the IT and rural management outcomes generated by each student in her/his courses are relevant, usable, and meaningful to the context of each SCA rural library/community setting.

4. Computer-enabled innovations in the

This section summarizes the computer-enabled innovations in the development and implementation of the ITRL so far that is helping to meet its goal of improving information access and use in the SCA rural communities by educating and training rural library professionals who are proficient in IT-related best practices in the information sciences.

4.1 Course Delivery Mechanisms

The use of the UT SIS' cutting-edge synchronous DE technology allows for real-time online interactions between the instructor and the students amongst each other in the virtual classroom via voice over Internet protocols that make the interactive experience a truly unique offering in this part of the country (Kumbhar, 2009; Marek, 2009). The ITRL courses are delivered synchronously using Saba Centra 7.6 software (online delivery system for the SIS DE program), "an online learning environment that combines a highly interactive virtual classroom learning, e-meeting, and web seminar platform with a learning content management system to deliver optimal blended learning" (Saba Centra, n.d.). In addition, Blackboard 7.0 (Blackboard, n.d.) and e-mail are serving as asynchronous communication and information-sharing tools. The ITRL students have appreciated the mixed use of these synchronous and asynchronous DE tools in not only making possible their learning experiences online; in addition, the

students believe their IT products developed during the courses have been more relevant to their rural communities as a result of learning through the UT SIS course delivery experience. As Becky Grindstaff, Knox County Schools Technology Department Staff and ITRL student noted: "The organization and management of UT's Distance Education classes in the SIS Department will impact my thinking as I assist with Knox County Schools' distance learning program. The addition of a Distance Learning program within Knox County Schools should have a significant impact, especially on class offerings at high schools on the rural outskirts of Knox County. Rural school districts outside Knox County Schools might connect to our distance learning courses in the future, and therefore the impact will be even larger on rural communities. I am very thankful to be part of the ITRL program." Additionally, in almost every case, face-to-face and/or phone interactions have helped to extend the nature and significance of the learning experience outside the virtual classroom for the ITRL students.

4.2 Technology Outcomes in the ITRL Courses

The ITRL has an inherent flexibility in the implementation of its curriculum since each student's elective courses integrate their unique experiences in their SCA environments and the tangible products that students individually develop in their course assignments are expected to be directly applicable in their local libraries and communities. These concrete deliverables developed in the ITRL courses by students include technology and management outcomes. Based on feedback audio-recorded by the ITRL students online for the asynchronous ITRL Annual Summit 2011 (URL: http://asp8.centra.com/GP/main/0000008aeed00000013325341d9e95f8), the following is a list of IT-related benefits, impacts, and outcomes developed by the students as a result of their involvement in their ITRL courses during the first year that have been significant for the SCA rural libraries and communities:

- Integrated IT into student perspectives and shaped community expectations of an LIS professional: Topic domains significant in this regard included conceptualization of a paraprofessional versus a future information professional; ability to think about tasks in new ways; broadened horizons; generated real-world impact on the rural library; forced the student and rural community to examine the nature of the community, rural library, and the individual staff member's role; and helped make the work environment more enjoyable and productive.
- Improved technology skills to provide more effective computer services: This included improving and expanding existing computer systems, networks, and computing applications; configuring new Public Access Computers (PACs); providing 12 new laptops including one for the visually impaired that in turn promoted a professional relationship with Techsoup, a nonprofit that helps public libraries get the technology resources they need to operate at their full potential; helped better understanding of IT procedures when updating and troubleshooting PACs, staff PCs, and network configurations (e.g., updating public library desktops to Windows 2010).
- Provided evaluation and assessment of computer services: This included developing a critical understanding of the IT context in the rural library in order to help close the rural digital divide (e.g., re-organization of computer classes to

serve rural clients better). Courses also helped understand technical considerations of Mac versus PC for several students.

- Developed online communication and evaluation instruments to gather feedback from various constituencies: E.g., several students built in-house tools to conduct first online user and staff surveys in their libraries; one student created a wiki for school librarians to share curriculum development and designed and implemented an instrument to improve communication between the school system and a software vendor.
- Participated in "hands-on learning" projects such as using i-Pads in the K-12 school classroom and developing mobile labs to community libraries.
- Implemented a DE program in the school system: Taking classes online through UT gave the individual a student's perspective on distance learning.
- Promoted awareness and use of open source software (OSS): A student is leading a committee to evaluate the suitability of adopting OSS Evergreen as the integrated library system for her rural library.
- Designed and developed websites for the rural library.
- Created a podcast tutorial and a screen recording tutorial using a content management system.
- Developed information retrieval skills online: Using professional methods when aiding users in research and answering questions; provided faster searching results.
- Improved skills towards better user electronic access: Learnt about various selection-reference-evaluation tools important to all libraries and the ethics involved in providing virtual reference services; developed online forms to provide laptop check-out to increase computer access for users; learnt how to properly assign subject headings and vocabulary control to improve online public access catalog entries.

4.3 Management Outcomes in the ITRL Courses

Based on feedback audio-recorded by the ITRL students online for the asynchronous ITRL Annual Summit 2011, the following is a list of management-related benefits, impacts, and outcomes developed by the students as a result of their involvement in their ITRL courses during the first year that have been significant for the SCA rural libraries and communities:

- Conducted an internal and external profile analysis of the library and/or library system.
- Developed a funding profile for a library or library system including local, state, and federal government resources as well as community partnership opportunities for a library and/or library system.
- Developed a comprehensive public relations plan for a library and/or library system including press kit, marketing trademarks (branding, logo, & tag line), and a community marketing strategy.
- Created a 12-month plan based on analysis data for staff development, programs and services, funding opportunities and community relationship building for a library and/or library system.

- Gained expertise in identifying the role of strategic relational management in developing successful externally-funded grant projects: Developed understanding of the grant-writing process and competency in grant-writing skills; Developed a Grant Partnership Agreement for an externally-funded grant project that will expand, market and promote local history resources at various libraries and/or library systems.
- Improved user instruction techniques to better serve the community's needs.
- Developed collection development knowledge to select quality children's literature for their libraries: Gained expertise in evaluating and selecting print and non-print materials, including young adult magazines and movies; learned to conduct better book talks; developed a de-selection and weeding project for a small children's literature collection.
- Developed evaluation and assessment tools for public services at a rural library.

4.4 Measuring Rural Library and Community Impact

Ongoing evaluation and assessment of the ITRL in generating rural library and community impact is being conducted continuously throughout the grant's duration. These datasets are being collected from students, practitioner-mentors, course instructors and program administrators, and community members via formative and summative evaluations (Mehra, Black, Singh, & Nolt, 2011c). Both quantitative and qualitative methods are being implemented to collect feedback from various stakeholders. Data collection and data analysis have been effective so far especially owing to computer-enabled strategies and approaches that are providing a holistic picture of ITRL evaluation based on integration of multiple view points. The various efforts in data collection and data analysis are helping to identify and evaluate expectations and accomplishments of all participants involved in the ITRL program throughout the process and time frame of the grant. For example, summary findings from select quantitative evaluation (pre-and-post course surveys) collected from ITRL students during fall 2010 and summer 2011 can be found at URL: http://www.sis.utk.edu/itrl-quantitative-analysis. Summary findings and process of analysis of select qualitative evaluation (formal narrative interviews) collected from of ITRL students during spring 2011 and fall 2011 can be found at URL: http://www.sis.utk.edu/itrl-qualitative-analysis. Such feedback is helping us inform the course design in terms of its objectives, content coverage, assignments, topic scheduling, readings, grading policies, and other areas. It is also helping us understand how to keep improving the students overall experiences in the ITRL. At the conclusion of the ITRL, the project team will conduct exit interviews with the students. Summary information will be incorporated into the final report to the funding agency and shared with the rural library communities. In addition, a follow-up survey of participants/employers/supervisors after completion of the ITRL will establish its overall effectiveness. All of the feedback collected during this research is helping to gain information to improve student course assignments, exercises, and projects for their communities. In addition, it is allowing for a better understanding of the technology and management needs of rural librarians in the SCA region.

5. Conclusions

Computers have played a significant role in the conceptualization, operationalization, and implementation of the ITRL grant activities to promote progressive changes in the SCA rural libraries and their surrounding communities. The use of computers in LIS education has been innovative and cutting edge in the ITRL owing to their role in shaping course delivery mechanisms, generating technology and management outcomes in the ITRL courses, and gathering evaluation and assessment data from multiple stakeholders. Moreover, on a broad level the ITRL presents a novel approach in LIS education since it provides opportunities to paraprofessionals already working in the SCA rural libraries to get a master's degree without moving on-campus; this is worthwhile also because it insures that ITRL students/paraprofessionals develop IT and management solutions in their courses that are directly relevant and meaningful in being tailored towards meeting the needs, wants, and expectations in the SCA rural libraries. The ITRL was conceptualized in response to the SCA regions' context of need regarding their experienced economic challenges and lagging trends in levels of education, information literacy, progress and development, and lack of access to available resources and infrastructures. Education in IT, computers, and information literacy skills, in addition to knowledge of culturally relevant management competencies and practices, in rural library settings were proposed in the grant as possible solutions to address some of these debilitating circumstances and situations. The underlying assumption is that rural library professionals who are embedded in their SCA communities are in a strong position to help address and develop solutions to meet some of these needs. The effective operationalization of the ITRL would not have been possible without the innovative use of computers and the synchronous and asynchronous DE applications that insured that students can remain at a distance and continue working as paraprofessionals in their SCA rural libraries while completing their master's degree in the UT's SIS program. The implementation of the ITRL to generate maximum impact in the SCA rural communities is proposed in terms of the ITRL students developing and building IT and rural management outcomes in their courses that can be directly used and applied in the SCA context. None of these efforts would have been possible without the effective use and integration of computers in the ITRLs activities.

6. Acknowledgement

The authors are thankful to the Institute of Museum and Library Services for funding the grant activities reported in this paper. We appreciate the support and enthusiasm for the ITRL shown by rural librarians and others in the SCA region. Thanks to the ITRL students for their dedication, hard work, and passion for promoting progressive changes in their SCA communities.

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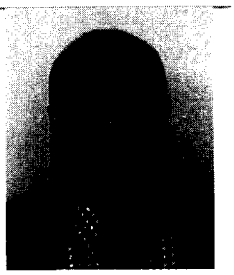
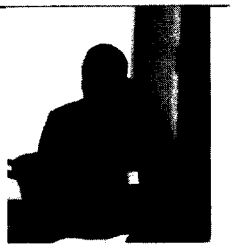
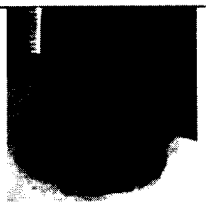
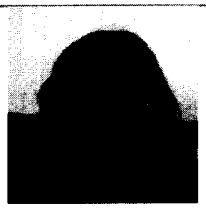
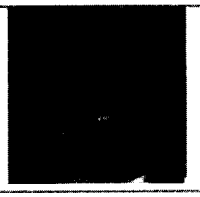
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Ms. Nancy Renfro	Regional Library Director for the Watauga Regional Library in East Tennessee.

Digital Information Gateway of Reference Resources: A Study

Raghavendra M

Abstract

A Digital Information gateway is a resource discovery service on the web. In this study a Digital Information Gateway for Reference Resource for a Library is designed. Reference resources have occupied a unique position as a sources of information although they are main component of any given information system. The gateway acts as a supplement to a University library reference section. Features, advantages and methodology involved in designing a Digital Information Gateway with special attribute to reference resources are discussed.

Keywords: Information gateways, Subject gateways, Reference sources, Open source, Reference services

1. Introduction

The birth of Internet has overcome limitations of print media of information and communication leading to development of information based society. Computer and Communication Technologies are acting as driving forces in the development of Electronic media of information in the 21st century. It would be no exaggeration to say that the print media will soon act as a supplement to electronic media in this coming era. Easy access to wealth of information via internet/www is a proof of the advantages of Electronic media over print media of information. INTERNET, an affluent source of information, has a great impact in changing the role of librarians and information professionals in this millennium. The important consideration while searching this source with respect to retrieval is 'Quality' and 'Coping with it', 'Quantity' and 'Juggling with it'. The quantity and variety of information available on Internet is un-debatable (Jacso, 2006)[1]. Scholarly support services such as "Google scholar" and "Scirus" which have evolved in the last 3 years is a clear indication of the importance of Internet as a repository of knowledge. Web has become a major force in reshaping the way information is being distributed and used. This again indicates a need for balancing 'Quality' & 'Quantity' in the web based information retrieval system. As a result of this complexity, the users of Internet are lost in the flood of information. Search engines were developed in 1994 to retrieve web information more effectively. Over the last ten years there are many search engines and navigational tools developed to help out users from the crisis of "Quantity" vs. "Quality". However, various studies have been reported indicating that no single search engine is self sufficient in any information retrieval process.

The complexity involved in accessing right information could be minimized, provided the information professionals look at the web resources with a different perspective of accessing global information and channeling them in the right direction. This channeling of information will substantially reduce the complexity involved in information retrieval process (Barry, 1998)[2]. This will enable users to navigate through vast amount of

information available on the Internet, thus protecting users from being lost in this flood of information. Designing 'Digital Information Gateways' could be one of the popular methods that can be employed for channeling the scattered information on the web.

2. Objective of the study

The objective is to design and develop a "Digital Information Gateway of Reference resources". Reference resources are an important component of any Library and Information system. Most of the reference resources are now available in digitized format. There are both open and subscription-based reference resources available on the Internet. The aim of this study is to design a web enabled resource discovery service of reference collection, which will be useful for the academic environment.

3. Digital Information Gateways

A "Gateway' is a word with several meanings. It generally refers to a network point that acts like an entrance to another network. Multiple networks with different architecture are interconnected to handle different protocols. The interconnection between networks provides a path for the transfer of data between them. Gateway is an innovative way of providing information and by analogy it is a point on the network that leads to several other information resources. It is in the form of a special purpose web site linking users to information on the net.

3.1 Features of Digital Information Gateways

The following are some of the salient features of Digital Information gateways.

- Supplement library website
- Provide Search and Browse Access
- Ensure authenticity of resources as experts work on selection and quality criteria
- Continuity of links is ensured as experts collect, maintain and update such links
- Gateways are generally customized.

Gateways bring together all related resources and provide links to them. Gateways also identify and present high quality free information resources on Internet. They encourage users to access the links directly, without going through the search process. Gateways have been set up to make this access convenient and help users to locate qualitative and relevant information on the net (Gudodagi and Jayadev, 2004)[3].

3.3 Tools and Techniques

Technically, the Digital Information Gateway can build using four simple tools (Joe, 2007)[4], they are the

- Hyper-Text Mark-up Language (HTML),
- Hyper-Text Transport Protocol (HTTP),
- MIME data types, and
- Uniform Resource Locators (URLs).

Additionally there are some more important components of Digital Information Gateway:

- Gateway registry/metadata
- Building content and tools (HTML, Core Journals, Text initiatives, Electronic Reference Shelf, Visual Image projects)
- Production services
- Conversion and preservation
- Research and development

3.4 Reference Sources

A source that provides immediate information is called as reference source. In general, a reference is a relation between objects in which one object designates, or acts as a means by which to connect to or link to, another object or a reference source. It is a tool that provides information about particular topic of universe. It provides easy access to authoritative, concentrated information on any topic (Chan, 2005)[5]. Types of information that are found in reference works are addresses, brief biographical essays, definitions, formulas, lists, maps and geographical data, short articles on a topic, and statistics. There are general reference sources, such as indexes, bibliographies, directories, biographical dictionaries, encyclopedias, almanacs, and atlases (Amanda, 2001)[6]. Reference sources are especially useful in the research process for a number of reasons in a library environment.

- They provide background information,
- They provide facts or specific details on a subject, and they point to other sources of information.

Several characteristics distinguish reference material from other information materials in library collections (Dillon, 2005)[7].

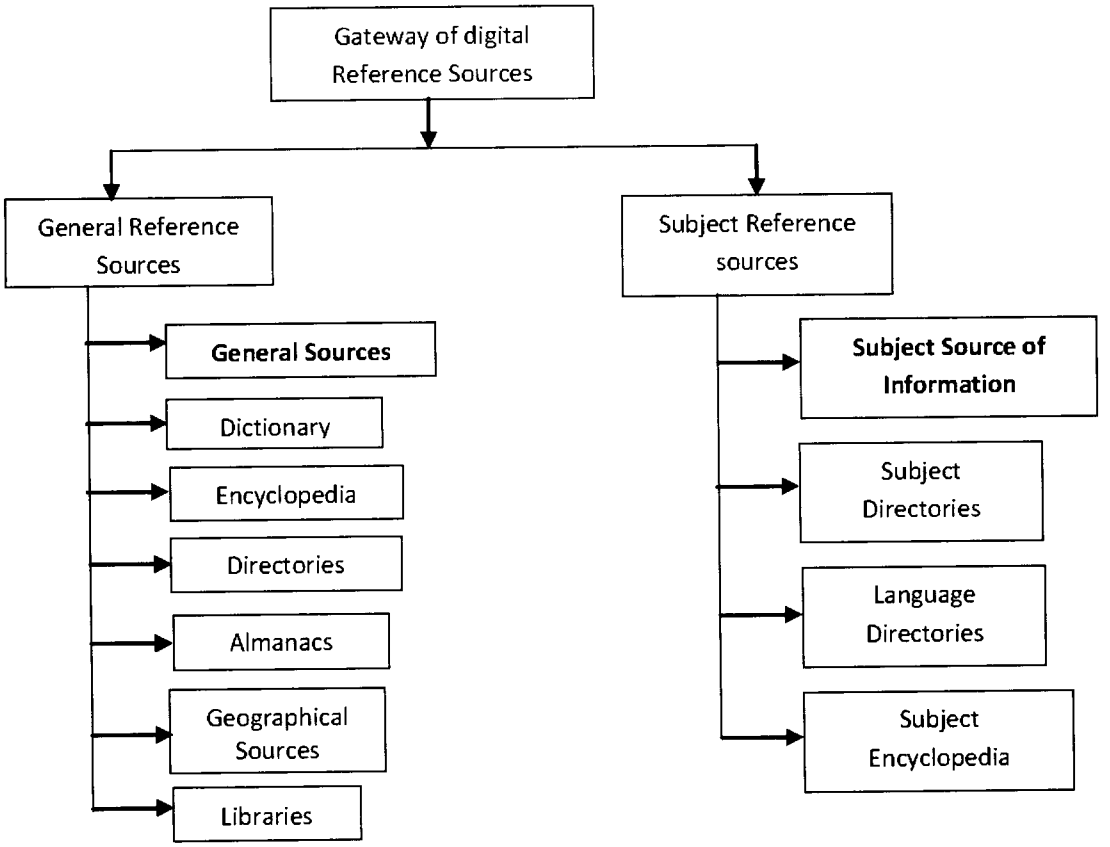
- They are usually consulted rather than read straight through (reference).
- They may provide facts and figures in an easy-to-find format.
- They may provide concise information to frequently asked questions.
- They may contain valuable information for particular subject areas.
- They may serve as guides to information.
- They do not circulate but remain in the library for access to all.

There are four types of evaluating reference sources. They are: Front, Flip, Focus, and Finale (Fall, 1999)[8].

4. Designing Digital Gateway of Reference Sources

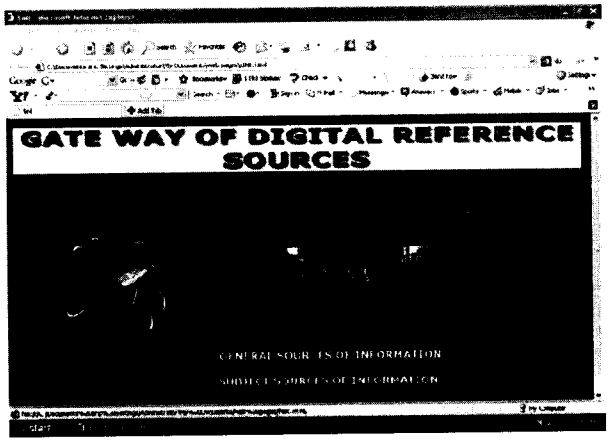
The gateway of digital reference sources for a University Library, which has been designed, can be represented by the following flow chart (**Fig 1**). The figure-1 gives an overview of the work done in developing this gateway. The gateway has been divided into two sections.

Fig-1: Flow chart showing working of Gateway



4.1 General Reference Sources and 4.2 Subject Reference Sources

General Reference Sources comprises of the Dictionary, Encyclopedia, Directories, Geographical Sources, and Almanacs etc., which have relevance to the general purpose of the common man. Subject Reference Sources comprises of Encyclopedia of particular subject, Directories of particular subjects and so on. Digital Information Gateway for Reference resources (DIGRR) for a university Library is designed. Screen shot of the main page is given in **Fig-2** (Main Frame)



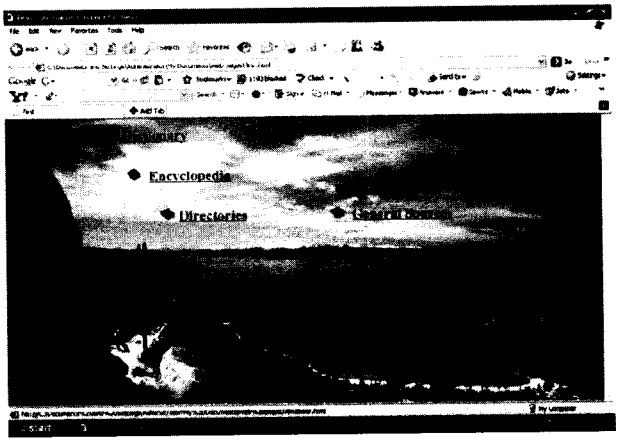


Fig-2: Screen shot of main page of DIGRR **Fig-3:** Screen shot of General Sources of Information

Screen shots explain how user can retrieve reference sources for a university library. Here we can observe two links leading to 'General Sources of Information' and 'Subject Sources of Information'.

5.1 General Sources of Information

A click on 'General Sources of Information' will take us to the next page of this gateway. It is represented in **Fig-3**. One can observe various reference sources listed such as Dictionary, Encyclopedia, Directories, Geographical Sources, and Almanacs etc. Each of these sources is hyper linked to their respective home page. If we click on dictionary in Fig-3, it will take us to another page where dictionaries such as 'Oxford English Dictionary', 'Cambridge English Dictionary' etc are listed. This is shown in Fig- 4.Each of these reference documents is hyper linked. By clicking on any of these dictionaries say 'Oxford English Dictionary' in **Fig-4**, user will be taken to the home page of the respective dictionary. Search for the meaning of a particular word will take the user to the actual meaning, which forms the next level. So by the 4th click from the Main page, a user can reach destination. User can actually get to the text of the information.

Similarly if we click on Encyclopedia in fig-3, it will lead us to a homepage at the next level, where number of encyclopedias are listed. **Fig-5** gives this page of encyclopedias. User is further navigated to the next level by another click on the chosen encyclopedia, where one can actually look for information in the encyclopedia. This gives a clear picture of four stages in which this Gateway functions and provides pinpointed information to the user in a library environment. For the purpose of representation **Fig-8, Fig-9, Fig-10, Fig-11, and Fig-12** depicts third level of directories, Geographical sources, Almanacs, Libraries and general information sources respectively.

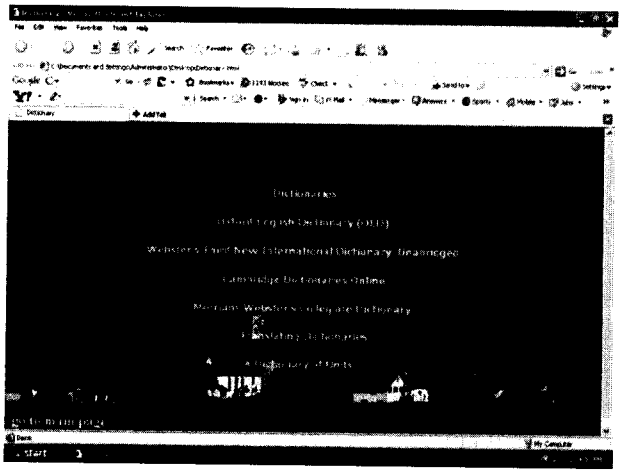


Fig-4 Home page to Dictionaries

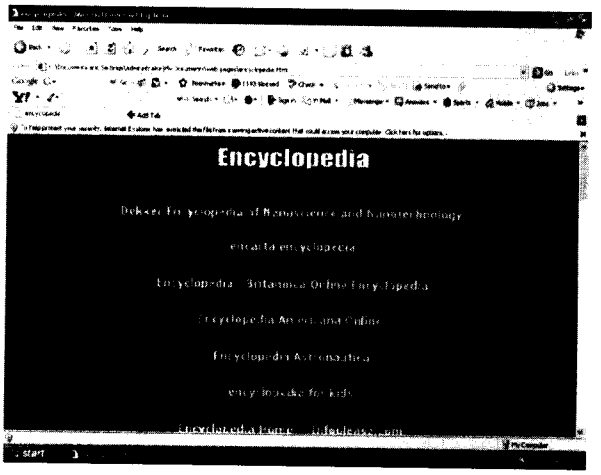
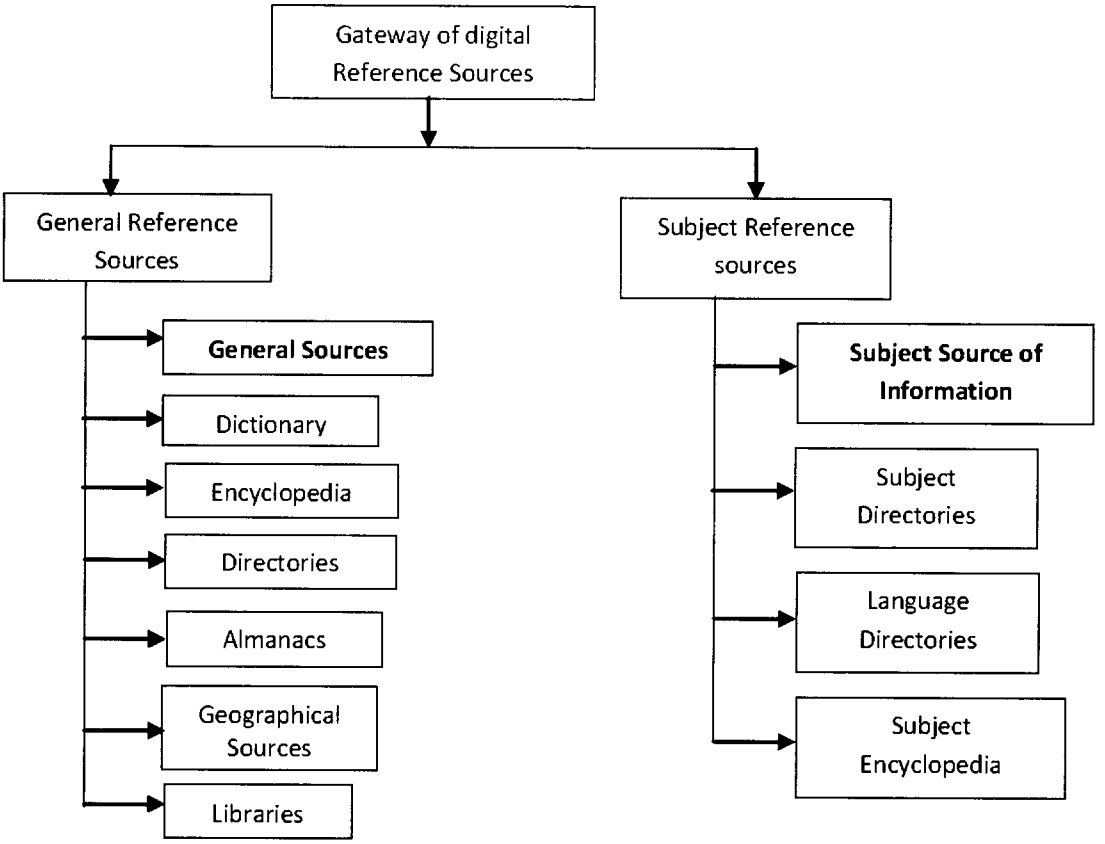


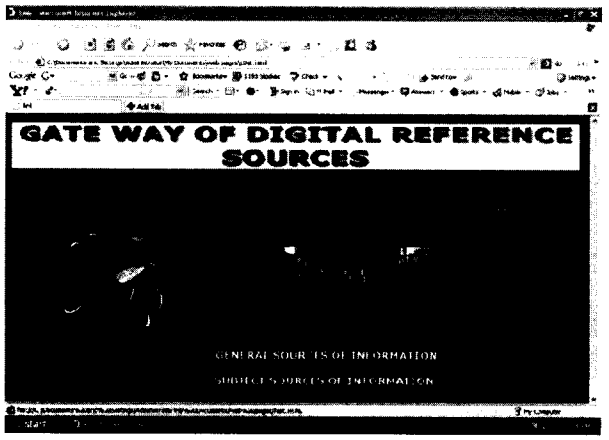
Fig-5 Web page of Encyclopedias.

Fig-1: Flow chart showing working of Gateway



4.1 General Reference Sources and 4.2 Subject Reference Sources

General Reference Sources comprises of the Dictionary, Encyclopedia, Directories, Geographical Sources, and Almanacs etc., which have relevance to the general purpose of the common man. Subject Reference Sources comprises of Encyclopedia of particular subject, Directories of particular subjects and so on. Digital Information Gateway for Reference resources (DIGRR) for a university Library is designed. Screen shot of the main page is given in **Fig-2** (Main Frame)



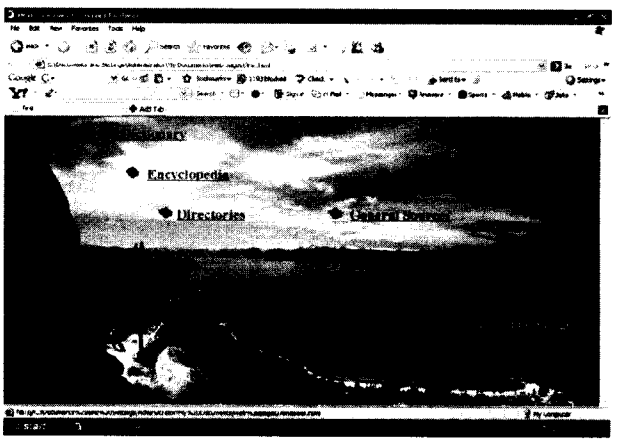


Fig-2: Screen shot of main page of DIGRR **Fig-3:** Screen shot of General Sources of Information

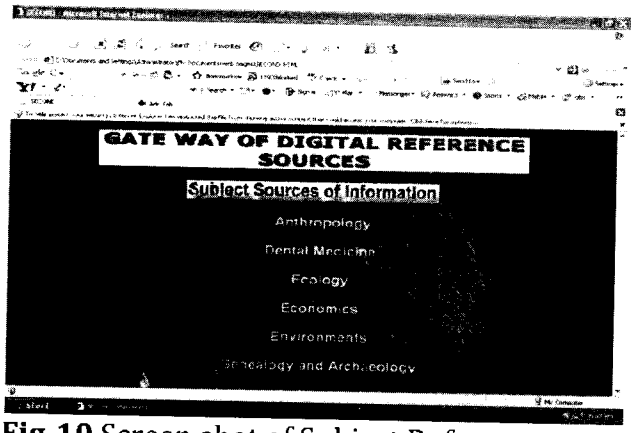


Fig-10 Screen shot of Subject Reference Sources

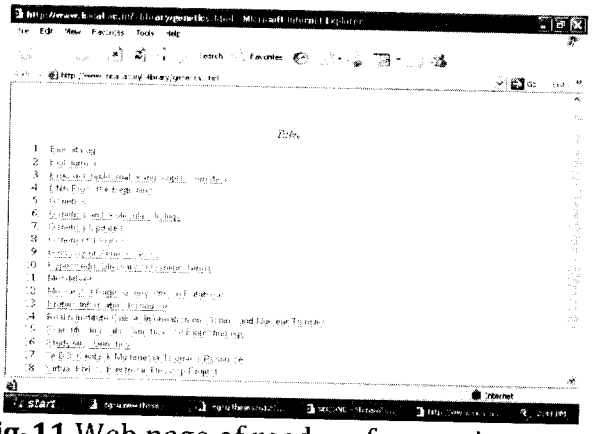


Fig-11 Web page of ready reference in Genetics

A click on any of these subjects says for example 'Genetics' will take us to the third level as shown in Fig-11. In this fig-14 we find links to variety of ready reference sources in Genetics. For example we find 'Glossary of genetic terms' as one of the reference source amongst this listing. A fourth click on this link in the process of information retrieval using this gateway will take us to Fig-12, which will open the world of Genetic terms. Here again the search process of four levels will take the user to the respective reference source in particular subject or discipline. Figure-12 represents the final stage of this search process of the Gateway.

Similar search, using subject sources of information can be carried out in any other discipline listed in Fig-10. This explains the functioning of the digital information gateway of reference sources with respect to subject sources of information.

Information seekers on this gateway should always keep in mind the limitations of the web resources such as missing links and the volatile nature of the resources and URL's on internet/ World Wide Web. This gateway of reference resources will be particularly useful in an "academic" environment, which will cater to the information needs in all domains of Human knowledge.

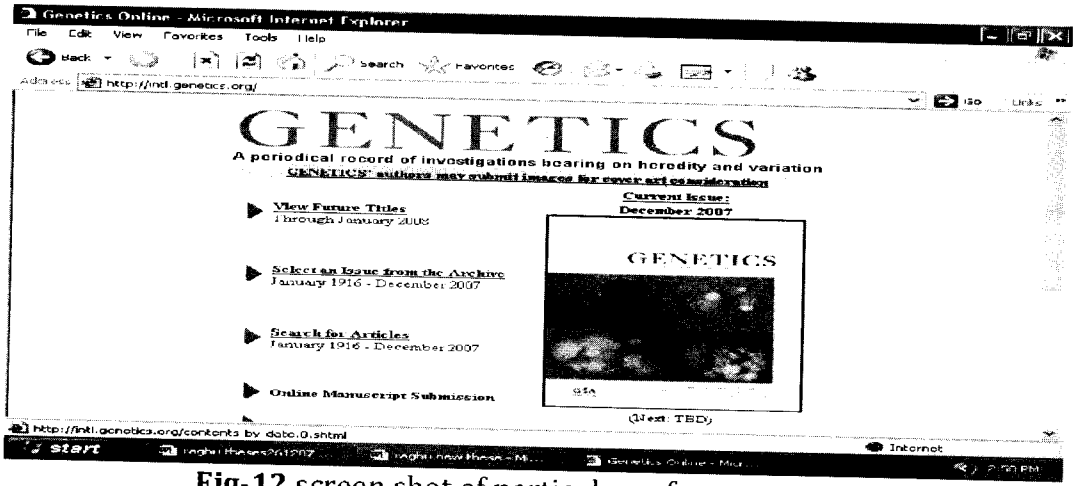


Fig-12 screen shot of particular reference source

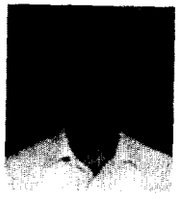
6. Conclusion and Suggestions for further research

Gateway is an innovative way of providing information retrieval services. Information gateway is like a portal that leads to several other information sources. It is in the form of a special purpose website linking users to information on the net. Navigation through Internet/WWW to locate a particular piece of relevant information is a difficult task for a common man. Gateways reduce this hassle by brining together all related resources and provide access to them from a single platform. Gateway may also identify and present high quality free information resources on Internet. Concept of Gateway encourages users to access the links directly, without going through the complex search process.

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Digital Library Tools and Techniques: An Overview

Mahawar KL **Manoj Kumar Kuriya** **Sudhir Kumar**

Abstract

The libraries are important factor in the development of the Society and Nation. Before 100 years, library was store house of books and books were for preservation, now the trend has change due to development of science and technology. This paper is focused on digital library concept, advantages of digital library and the needed infrastructure for digital library. Also discussed about the tools and needed software for digital library.

Keywords: Digital Library, Digitization, Preservation, Digital format, Digital library service

1. Introduction

Presently libraries are using new technologies for the development of their collection and services, with the help of new technology, libraries fulfill the mostly all requirement of the library users. User can access their relevant information from the digital library in few second from anywhere. As we know libraries are playing an important role in the development of the society and nation. Libraries are also known as mirror of the society but the society is changing very fast, we can see or feel the changes in every field of the life, as well as society. The changes of society are the result of fast growth of science and technology. Before 100 years we say that libraries were store house of books and books were for preservation. Now we can say books are for use, which is fulfilling the Dr. S.R.Ranganathan's laws. The present age of time is known as age of computerization and technologies, so why we go back, we should come with the computer and technologies. So we can say that the concept of digital library is depending upon the computer networking and latest technologies. The computer and internet plays a vital role for the dynamic activities in the field of information communication and technology. The development of ICT is directly connected with the development in the field of libraries. The computer is being used in libraries from the 1935 with the development of Hollerith punched card technology [1], but the concept of digital library is very recent origin. The concept of digital library came into existance in 1994, with the digital library initiative which was funded by the us federal agencies NSF, DARRA & NASA.[2] Digital library means the collection of library is available in digital formats or digitized form. Libraries are connected with the Internet and Intranet, we can access document over network. A digital library is a collection of digital documents and resources, for example- E-Books, E-Journals, etc.

2. Digital library

Digital library is a combination of Software, Hardware and communication technologies. It is an innovation of the modern technology which facilitates the access of the electronic/digital information around the world. The librarians have control over the collection of the digital library. It includes all the digital objects (PDF, JPEG, TIFF, MPEG etc) which can be organized and manage through some digital library tools and techniques. A digital library is not only offering the digital collections but also provides

additional information services like directory, e-mail and other services. The library users can access the digital library from their computer desktop. It has changed the concept and structure of the traditional library because its offer information through global network.

3. Definitions of digital library

"Digital library are organized collection of digital information. They combine the structuring and gathering of information, which libraries and archives have always done, with the digital representation that computer have made possible."[3]
Digital Library is "focused collection of digital objects, include text, video, and audio, along with methods for access and retrieval, and for selection, organization, and maintenance of the collection"[4]

4. Features of Digital Library

- Digital library helps to reduce geographical barrier.
- Time saver
- Reduced space requirement.
- Access online databases from anywhere through internet.
- Digital Library is a source of computer based services.
- Collection of digital objects.
- Huge amount of information can be stored in small storage devices.

5. Services of the digital library

The mostly following services are given by the Digital Libraries.

- Current Awareness Bulletins and SDI
- indexing service and Special Collections service
- Catalogue Databases and CD-ROM Databases
- Bulletin Board Service
- Institutional Published Newsletters, Reports & Journals, E-mail,
- Audio/ Video Communication, Document Delivery Service,
- Electronic Theses and Dissertations, Reference Service

6. Collection of digital library

The collection of digital library are basically same as traditional library but they are available in machine readable Format, in other words digital formats. It include the CD-Rom databases, E-Books, E-journals, government reports, Annual reports, video, photos, etc. It can be divided in to two parts.

Born digital document:- which is already created in digital form.

- Electronic databases.
- Software's.
- Movies.
- Audio and Videos.
- E-Books.
- Photographs.
- Electronic Periodicals.

Digitized Document

- Rare books digitization.
- Manuscripts digitization.
- Historical documents
- Historical Objects etc.

Digital formats:[5]

- Image format: TIFF, GIF, JPED
- Basic text format : ASCII, UNICODE , RTF
- Presentation formats : Postscript, PDF
- Structure formats : HTML, SGML,XML
- Audio/video formats: WAVE, REAL AUDIO, MP3,AVI,MPEG[3]

7. Basic tools of Digital Library

We can categorize the basic tools of digital library as follows:

- Hardware
- Software

7.1 Hardware

The following Hardware are required for the development of the digital library.

- Server
- Nodes
- printer
- scanner
- digital camera
- Video camera
- Audio Recording Machine, etc.

7.2 Software

The following softwares are required for the creation of the digital library. These may be change according to your requirement.

- System software: Linux, Unix, Windows XP, etc.
- Application software: MS Office etc.
- OCR software: TEXT Bridge, Fine reader
- File format converter: Adobe distiller
- Web server software: Apache, PWS, IIS
- Antivirus software: Norton, Aviva
- Digital library software: Green Stone Digital Library Software.

8. Major Issues in Digital Library

- Financial problem.
- Fast growth rate of latest technology.
- Obsolescence of technology
- Lack of expertise
- Lack of computer educated staff in libraries.

Financial problem is the major problem for the Creation of any digital library, because it is the most important key for invention of the digital collection. The invention of new technology play the major role in the in the development of the digital

libraries, but due to less financial budget every institution/organization cannot afford to create a digital library. After some time technology changed in the shape of old technology, which wants the replays by the new technology and needs some technical experts, which is necessary for the succeed of the any digital library, without trained/skilled professional is inflexible and more expensive function to create the digital library. Mainly financial conditions have to very strong for the establishment of digital library.

9. Conclusion

The impact of new technologies is increasing very rapidly all over the world .The libraries are using these technologies for their growth and improvement of their services for the users. Digital libraries are providing the help to users anytime and anywhere it means digital libraries crack the geographical barrier. The collection of the digital libraries are easy to use and storage in compression to traditionally library system. In the presently era most of the library users are familiar with the computer and Information communication and technology, so the concept of the digital library are very use full for present and future.

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Digitization and Digital Library: Experience at BARC Library

Sanjay Kumar Singh Leena A Kanal Ajith Balan Rajiv Gupta

Abstract

The rapid development and advances in information resources, information processing, storage, retrieval and communication technologies have revolutionalized the role of resource centers worldwide in collecting, disseminating and archiving the information. This paper mainly describes the digitization of news paper clippings, journal articles, thesis of BARC scientists & engineers, internal, external & progress reports, newsletters etc. pertaining to BARC and also briefly explains the concept of digital libraries, its need and characteristics in general along with digital content development & management pertaining to Bhabha Atomic Research Centre library (BARC). It also describes the challenges faced during the setting-up of knowledge hub (Digital library) with emphasis on digital born web contents.

Keywords: Digital library, Knowledge management, Web, Digitization, preservation, Content management, Information technology

1. Introduction

Information technology and networks are the major tools that has shape our society. The application of information technology has the largest impact on library and librarianship. It has changed the way we perceive and disseminate information and has even threatened the traditional approaches to library and library professionals. The impact of technologies such as Computer network, Internet, Hypermedia, Multimedia, CD-ROM etc. has led to a paperless society. The convergent of computational storage and networking technologies now have a wider impact. The computers can record any information/document at high speed and disseminate information wherever required to the users. It is possible now to digitize and store information in the form of high quality graphics, network texts, color images, voice signals and video clips at a relatively affordable cost.

2. Digitization & Digital Library

"Digitization" means conversion of non-digital materials i.e. printed documents to digital form i.e. a form which uses a binary numerical code to represent variables. In the past few years, technologies and procedures for digitizing documents at high speed with comparatively low cost have been growing up. Some high-speed scanners are now available to improve the quality and quantity of digitized documents. The consequence of this era has revealed the possibility to plan the digitization of a large number of documents per year for developing digital library.

The term "Digital Library" in a broad sense is a computerized system that allows obtaining a coherent means of access to an organized, electronically stored repository of information and data. The term digital library explains the nature of its collection. This term became familiar towards the end of the 20th century. Resources in digital

library are electronically stored and accessed. Access to digital library is therefore, not based on space or time.

3. Need of Digitization for Digital Library

Digitization is one step towards creation of digital library. Digitization can save rare documents for long time use. Automation has helped libraries in improving library activities and accelerates working efficiency. It saves effort, time and manpower of libraries. In an automated system the information can be altered and updated without the repetitive work involved in the manual system. It saves time of the users, staff and increases productivity and reliability. The concept of digitization evolved in the field of library. Since then libraries have changed from traditional libraries to automated libraries and further the automated ones towards electronic ones; the electronic ones towards digitised ones and ultimately to virtual libraries.

4. Characteristics of Digital Library

The important characteristics of digital libraries are as follows:

- Digital library solves the space problem in existing library.
- Multiple users can use single copy of the documents at a time.
- Digital library provides faster access to information.
- Digital library enables easy management of large amounts of data.
- Digital library collections are fixed and permanent.
- Digital library supports formal and informal learning procedures.
- Any user from any workplace through the network that facilitates faster scholarly communication can access digital library.

5. Functions of Digital Library

The most important functions of digital libraries are:

- To provide friendly interface to users and to avail network facilities.
- To support library functions.
- To improve the cost effectiveness of library operations.
- To enhance advanced search, access and retrieval of information.
- To support in editing and publishing annotations and integration of information.
- To digitise documents for preservation and dissemination.

6. Digitisation work at BARC Library

Scientific Information Resource Division (SIRD), BARC is responsible for providing scientific and technical information to BARC community both in traditional and digital forms. To facilitate this effort, two Intranet portals Lakshya and Saraswati have been developed for online resources and onsite resources, respectively. In the last few years, a lot of digitisation work has been completed to provide seamless access to knowledge-based resources to the DAE community, keeping in view the objective of providing scientific and technical information on desktop. BARC library has successfully developed and implemented an Online Information Gateway "Lakshya" and Intranet "Saraswati".

Table 1: List of web-accessible resources in digital format

Digital Content	Format	Archived	Files	*File size*	Program
Newspaper Clipping	JPEG	2000+	17373	3.6 GB	Perl
Articles (Abstract)	HTML	2006+	5200	18.9MB	DSpace
Articles (Full Text)	PDF	2006+	5200	2.96GB	DSpace
Theses (TOC)	HTML	1970+	197	1.1MB	DSpace
Theses (Full Text)	PDF	1970+	2163	3.06 GB	DSpace
Internal Report	PDF	2000+	176	518.2MB	Acrobat
External Report	PDF	2000+	337	622MB	Acrobat
Progress Report	PDF	2000-02	231	61.7MB	Acrobat
BARC Newsletter	PDF	1999+	1631	1.75GB	Acrobat
Books on Display	HTML	2002+	1010	13 MB	HTML
Dig. Resource Bulletin	PDF	2006-10	79	21.1MB	Acrobat
Nuclear News Digest	PDF	2002+	110	29.6MB	Acrobat
Foreign Lang. Abstracts	PDF	1999+	28	3.59MB	Acrobat
Foreign Lang. TB	PDF	2000+	20	2.44MB	Acrobat
Technical Reports	PDF	-	14563	62.8GB	Acrobat
S.I.R. Bulletin	PDF	2010+	10	12.2MB	Acrobat

All the contents shown in the table are seamlessly accessible at onsite gateway **Saraswati** (Intranet). BARC Newsletter is also accessible at BARC web site http://www.barc.gov.in.

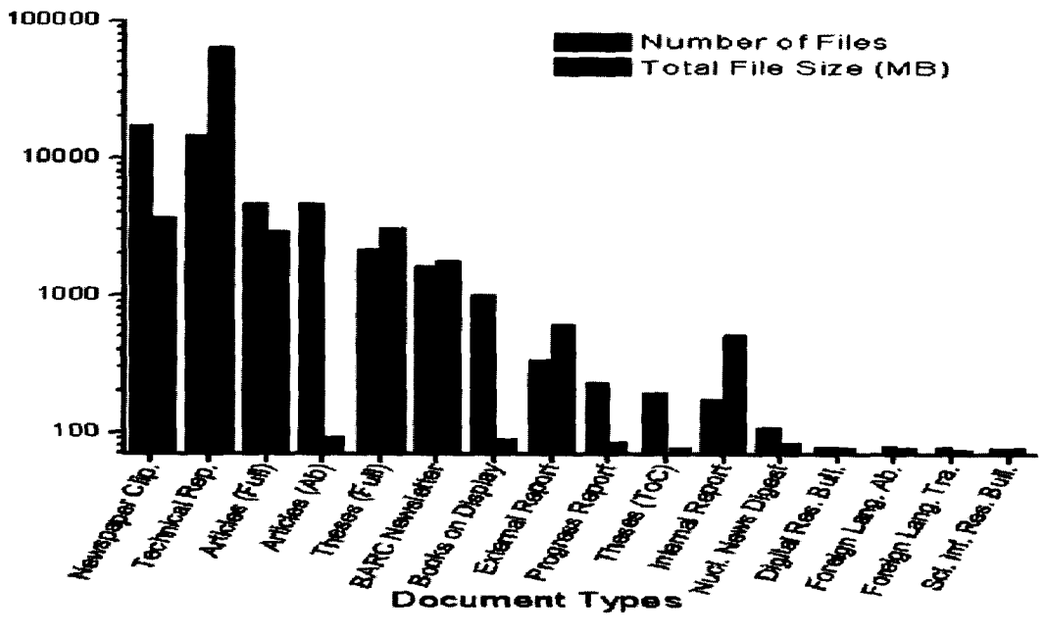


Fig.1: Graphical representation of Document Type versus Number of files and Total file size

6.1 Newspaper Clippings

The very first initiative taken up in the year 1999 at BARC for digitisation is for newspaper clippings pertaining to DAE-BARC and Nuclear Science & Technology news

published by leading newspapers. All the relevant clips scanned from the newspaper are digitised using flat-bed scanners. Metadata for each clip prepared with title & relevant keywords and hosted on the server. In-house efforts have been made to provide search and access facility written in CGI/Perl interface.

About 20 newspapers are scanned daily for news related to nuclear science and technology and about DAE-BARC. The newspaper clippings are scanned as image format and assigned keywords. One can search the clipping through Date wise, Title, Keywords, or combination of any three.

6.2 Articles and Thesis

BARC being a multidisciplinary research institute, scientist and engineers publish lots of research articles. These articles are archived in open source repository DSpace. Articles are received year wise and uploaded in repository by SIRD. Articles are archived with its bibliographic details, abstract and full text and access points being title, author, and keyword and publication year.

Theses being very specialized in nature, it passes through a pre hosting procedure. The printed theses are first scanned by hi-speed scanner, cropped, edited and web optimized into small files based upon their chapters. Web pages in HTML covering all the chapters with hyperlink to the full-text in PDF are listed as table of reference to these theses. Thesis table of references, PDF files and full theses are further assign keywords and hosted into the DSpace repository. These theses can be searched either by title, author, keyword and publication year or any combination. This repository helps the organizational multidisciplinary knowledge managed under single umbrella and proves to be an informative source for patrons.

6.3 BARC Newsletter and BARC Reports

The research and developmental activities carried out in BARC are published in the form of BARC Newsletter and BARC reports also. The BARC Newsletter, digital born resources, provides various scientific and academic activities and the latest innovations and technological developments that are carried out in different disciplines in BARC. It also covers National and International awards received by BARC Scientist and Engineer. To enable the search BARC newsletter through title & keywords, chapters/articles are assigned keywords into the database also. BARC Reports are now digitally born in PDF format and hosted on Intranet servers, which are searchable by Report number. Previous issues of BARC newsletter and Reports have been digitized by scanning process.

6.4 Books and Reports on display

To provide wide awareness among the patrons, new arrived books and reports are kept on display for one week. Since inception in 2001, a web page based display system has been in practice for hosted on Intranet Saraswati for newly displayed books and reports. Each new page is linked with navigation to the previous or next week display and archive index.

6.5 Digital Resource Bulletin /SIR Bulletin

This is an initiative to make the patrons aware of the new digital resources available/hosted onsite and online portals. A fortnightly bulletin was published and

distributed digitally among the scientific community from the year 2006 to July, 2010. Archive of the same has been maintained on Saraswati Intranet. From August, 2010 Digital bulletin has been replaced with a monthly SIR Bulletin. It is also made available electronically to the community with enhanced content and features.

6.6 Nuclear News Digest

BARC publishes compilation of news and events in the area of Nuclear Science around the globe in the form of Nuclear News Digest. The source of content is from NUCNET, a publication of IAEA and other participating countries, news received through emails from all over the world. The information from Nucnet is scanned, edited, complied and brought out in the form of a Nuclear News Digest and further hosted on Saraswati.

6.7 Foreign Language Abstract and Transbulletin

This is a biannual publication that carries English language translations of journal articles published in French, German, Italian, Spanish and Russian languages. Foreign language transbulletin, a biannual publication, which is compilation of digital resources acquired and created by SIRD. Both these publications are merged into a single bulletin from 2010.

7. Challenges

While Digitization offers advantages, seamless access, there are some challenges listed below:

7.1 Copyright

An intellectual property right is a big barrier for preserving the digital documents. Copyright protects the owner's creative or intellectual work. Digitisation of documents are involved with complex method for resolving the legal and practical questions of migrating intellectual property, that includes the creators and owners of intellectual property, managers of digital archives, and actual potential users of intellectual property.

7.2 Technology Obsolescence

This is the great challenge for preserving digital documents because of technological changes. We used to save copies of data on tapes, DVD's, UDO media etc. but media standards for all these have changed considerably over the last five to ten years, and there is no guarantee that these will be readable in the future.

7.3 Cost factor

There is always a cost in its creation, its production, and its dissemination. Digital libraries introduce new and uncertain economic realities and relationships into libraries.

7.4 Expertise

Digital libraries are considered by many to be a challenging area. Most of the libraries do not have expert staff to digitise documents and disseminate the digital information. It needs to be managed by professionals who understand technology and information needs of the users effectively and quickly.

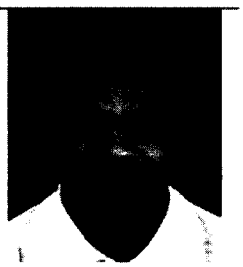
8. Conclusion

To conclude with the help of digitization lot more add-on services have been provided to the BARC patron. The motto of Scientific Information Resource Division (SIRD) is to provide information on the desktop has been fulfilled. The digitization effort of SIRD has been very well received by the patron and appreciated by the higher authorities. It has been noticed from the digital logs that number of digital resources and simultaneous users is growing up. The data in hard form has been preserved and archived that always serves a value added source of information for many generations to serve on. With optimized utilization of fund and encouragement from organizational management, the digitization process never slow down. Local IT expertise and profession skill at SIRD, BARC has ensured for absolute zero loss of any digital content due to technological obsolesces. We should also keep a watch on technological advancement, financial allocations for library, professional & knowledge skills and self updation for better services to the patrons.

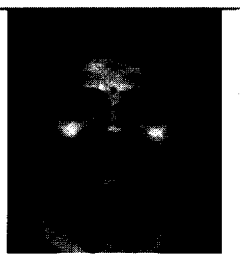
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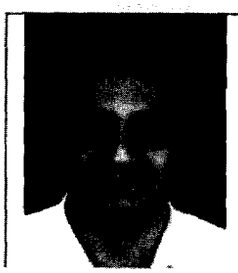
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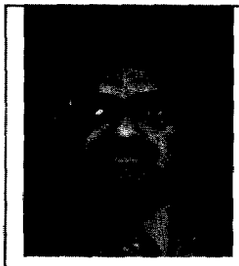
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Digitization Trend in Libraries of First Grade Colleges Affiliated to Davanagere University - A Study

Kotresh N

Abstract

A full service digital library must accomplish all essential services of traditional libraries and also exploit the well known advantages of digital storage, searching and communication. The digital library reduces space requirements unlike the traditional library to store, manage and dissemination of information to its community. This service also helps the library professionals in implementing updated technologies and saves the time of both library professionals and the patron community. And therefore, the study has undertaken to understand the Digitization Trend in Libraries of First Grade Colleges Affiliated to Davanagere University.

Keywords: Digitization trend, Digital library, College libraries, Davanagere

1. Introduction

We are in the era of Information Technology, which is also called as electronic, computer era. The digitalization is the part of computerization and it means there we can find the information through computer in digital form. Libraries' development seems more complicated with Internet technology and digital resources. Recent developments in the web technology enable us to have access to digital information resources from anywhere. Digitisation of libraries could fulfill the motto of the library i.e. to provide right information to the right user at the right time. Therefore, a full service digital library must accomplish all essential services of traditional libraries and also exploit the well known advantages of digital storage, searching and communication. The digital library reduces space requirements unlike the traditional library to store, manage and dissemination of information to its community. This service also helps the library professionals in implementing updated technologies and saves the time of both library professionals and the patron community. With the above discussion the study was undertaken to understand the digitization trends in libraries of first grade colleges affiliated to Davanagere University.

2. Objectives

- To identify the present status of library automation in frist grate college libraries affiliated to Davanagere University.
- To know the state-of-the-art ICT infrastructure available in college libraries under the study.
- To know the availability and access to e-resources.
- To identify the digitization initiatives undertaken by the colleges libraries affiliated to Davanagere District
- To identify the components of digital library available in the First Grade Colleges.
- To know the hurdles facing in digitalization of the libraries. And
- To suggest the ways and means to strengthen digitization of library resources to provide effective college library services under the study area.

3. Hypothesis

- No Trend of digitization is there in First Grade College Libraries.
- Majority of First Grade College Libraries are not equipped with computers.
- Majority of them have not installed Library Software and ahead for library automation and digitization.
- There is a lack of awareness about digital library and its services in user of the library
- There is a lack of support from head of the institution to digitalise the library.

4. Scope and Limitation

The scope of this study is basically relating to know the trends of digitalization in libraries of First Grade Colleges which are affiliated to Davanagere University. The units of observation of the study are mainly Government, Private Aided and Un-aided and Autonomous First Grade Colleges.

5. Methodology

Both primary and secondary sources of data have been relied upon. Primary data were collected both from the college administrative authority through interview on the basis of well designed questionnaire which was used to collect data from the library professionals of the F.G colleges affiliated to Davanagere University.

6. Data analysis

The data collected from the library professionals of the F.G colleges affiliated to Davanagere University through a well designed questionnaire. The collected data is analysed in different headings and tries to identify the findings.

6.1 First Grade colleges in Davanagere University

Davanagere is the heart/centre of the State of Karnataka which was earlier famous as Manchester of the Karnataka and now it has become the educational centre. In the year 2008-09, the Karnataka Government has started the new university at Tholahunase Area which is 30 k.m distance from Davanagere city and named as Davanagere University. It is spread over in two districts, Davanagere and Chitradurga consist six taluks each. The first grade colleges of these two districts are affiliated to this new university and one of them is deemed college. The colleges comprises of Arts, Science, Commerce, Manage ment Studies and fashion designing are housed in this university area. The data regarding present status of the first grade colleges affiliated to this university is depicted in table-1.

6.2 Profile of respondents

Table-1

Sl No	District wise Taluks	First Grade Colleges in Davanagere University				Total
		Govern ment	Private Aided	Private Unaided	Autono mous	
A	Davanagere District					
01	Davanagere Taluk	03	04	13	--	20
02	Channagiri Taluk	03	--	--	--	03

03	Harihara Taluk	01	01	03	01	06
04	Harapanahalli Taluk	01	02	01	--	04
05	Jagalur Taluk	01	01	02	--	04
06	Honnali Taluk	02	01	02	--	05
		11	09	21	01	42
B	**Chitradugra District**					
01	Chitradurga Taluk	03	04	04	--	11
02	Hiriyur Taluk	03	--	01	--	04
03	Challakere Taluk	02	--	03	--	05
04	Hosadurga Taluk	01	--	01	--	02
05	Holalkere Taluk	01	01	01	--	03
06	Molakalmur Taluk	01	--	02	--	03
		11	05	12		28
	Total	22	14	33	01	70

Table-2: District & Taluk wise profile of respondents

Sl No	District wise Taluks	First Grade Colleges in Davanagere University				Total
		Govern ment	Private Aided	Private Unaided	Autono mous	
A	**Davanagere District**					
01	Davanagere Taluk	01(33%)	03(75%)	08(61%)	--	11(55%)
02	Channagiri Taluk	01(33%)	--	--	--	01(33%)
03	Harihara Taluk	00	01(100%)	02(67%)	01(100%)	04(67%)
04	Harapanahalli Taluk	00	01(50%)	00	--	01(25%)
05	Jagalur Taluk	00	01(100%)	02(100%)	--	03(75%)
06	Honnali Taluk	02(100%)	01(100%)	01(50%)	--	04(80%)
B	**Chitradugra District**					
01	Chitradugra Taluk	04	07	13	01	25(60%)
02	Chitradurga Taluk	02(67%)	02(50%)	02(50%)	--	06(55%)
03	Hiriyur Taluk	02(67%)	--	00	--	02(50%)
04	Challakere Taluk	01(50%)	--	01(33%)	--	02(40%)
05	Hosadurga Taluk	01(100%)	--	00	--	01(50%)
06	Holalkere Taluk	01(100%)	01(100%)	00	--	02(67%)
07	Molakalmur Taluk	01(100%)	--	01(50%)	--	02(67%)
		08	03	04		15(54%)
	Total	**12(54.5%)**	**10(71%)**	**17(51.5)**	**01(100%)**	**40(57%)**

6.3 Pre-Requisites of digitization

Table-3: the response on Prerequisites

Sl. No.	Pre - Requisites	Respondents		No. of Response
		Yes	No	
01	Research Center in the College	--	36(90%)	04(10%)
02	Are you having Computer Knowledge	21(52.5%)	01(2.5%)	18(45%)
03	Are you had Internet Knowledge	18(45%)	--	22(55%)
04	Are you Aware of Digitization	17(42.5%)	23(57.5%)	--
05	Subscribe to Databases for the Library	--	40(100%)	--
06	Are you required training to digitize	30(75%)	--	10(25%)
07	Is it digitization is Expensive	--	32(80%)	08(20%)
08	Are the user of the library aware of digital and ICT based services, Digital Resources	04(10%)	26(65%)	10(25%)
09	Are you aware of Consortia of Library	16(40%)	18(45%)	06(15%)
10	If yes-Is the College a member of any Consortia	--	36(90%)	04(10%)
11	Are you taken initiative steps to digitalize	22(55%)	18(45%)	--
12	Are you have Technologies and Components required to digitalize the library	--	39(97.5%)	01(2.5%)
13	Need of awareness programme and training to user of the library	38(95%)	--	02(10%)

6.4 Initiative steps of digitization

In order to know the trend of digitization in F.G.college libraries, the professionals are asked to mention the initiative steps taken to digitalise their library.

Table-4: Steps taken to initiate digitization of Library

Sl. No	Initiative Steps	No. of Response	No Response
01	Automation of the Library	18 (45%)	22(55%)
02	Provision of the Internet facility to user in the Library	02(5%)	38(95%)
03	Provision of Online Publication	--	40 (100%)
04	Conversion of Print material to digital formats	--	40 (100%)

6.5 Process of Digitization

After knowing the initiative steps taken to digitalise in the college libraries, it is made an effort to know the process of digitization going on in the college libraries. The data, regarding the process of digitization like scanning, checking of documents, conversion to pdf, data storage, and writing on the CDROM and document management system.

Table-5: Process of Digitization going on in the Library

Sl. No	Process of Digitization	No. of Response	No Response
01	Scanning	--	40 (100%)
02	Checking of Documents (Quality Control)	--	40 (100%)
03	Conversion to PDF	--	40 (100%)
04	Document Management System	--	40 (100%)
05	Data Storage	--	40 (100%)
06	Writing on the C.D. ROM	--	40 100%)

6.6 Components of Digitization

Digitisation of library requires well established and proven information technologies by accessing the database or serves through networks. The following components like 24 hours of Internet Connectivity, Computer Servers, LAN/WAN, Scanners, High power hard disk, High power UPS, WiFi tower, Digital Camera, Converters etc., are very essential to create digital library.

Table-6: Availability of Components of digitization in the F.G.C. Libraries

Sl. No.	Components	No. of Responses		No Response
		Yes	No	
I	**Hardware Components**			
a	24 hours of Internet Connectivity	--	35 (87.5%)	5 (22.5%)
b	Computer Servers	--	40 (100%)	--
c	LAN/WAN	02 (5%)	34 (85%)	04 (10%)
d	Scanners	--	33 (82.5%)	07 (17.5%)
e	Storage media: high power hard disk	--	36 (90%)	04 (10%)
f	WiFi tower and CDs	--	32 (80%)	08 (20%)
g	Digital Camera	--	31 (77.5%)	09 (22.5%)
h	High Power UPS	--	40 (100%)	--
i	Converters	--	34 (85%)	06 (15%)
j	Networks	--	39 (97.5%)	01 (2.5%)
k	Multimedia Interfaces	--	39 (97.5%)	01 (2.5%)
II	**Software Components**			
l	Linux Operating Systems	--	36 (90%)	04 (10%)
m	Digital Library Software-Green Stone or D Space	--	36 (90%)	04 (10%)
n	Editing Software	--	36 (90%)	04 (10%)
III	**Human ware Components**			
o	Management Support	--	28 (70%)	12 (30%)
p	Technical Staff	--	30 (75%)	10 (25%)
q	Subject Knowledge in Professionals	18 (45%)	22 55%)	--

6.7 Rate of Factors

There are some factors essential to digitalise the library like infrastructure for digitization, support from principal, financial support from management, training for library staff, co-operation between technical staff and other staff, availability of trained technical staff to work towards digitization and so on.

Table-7: Satisfaction level of professionals towards digitization

Sl. No	Factors	Rating					No Responses
		Excellent	Very Good	Good	Average	Poor	
a	Infrastructure for digitisation	--	--	--	02 (5%)	38 (95%)	
b	Support of Principal	--	--	02 (5%)	--	38 (95%)	--
c	Financial support from the Management/Govt.,/UGC	--	--	--	08 (20%)	28 (70%)	04 (10%)
d	Training for Library Staff	--	--	--	04 (10%)	32 (80%)	04 (10%)
e	Co-Operation between technical staff and other staff	--	--	--	38 (95%)	--	02 (5%)
f	Availability of trained technical staff	--	--	--	--	37 (92.5%)	03 (7.5%)
g	Availability of time	--	--	38 (95%)	02 (5%)	--	--
h	Preservation of digital formats	--	--	--	--	38 (95%)	02 (5%)
i	Awareness in User	--	--	--	04 (10%)	36 (90%)	--
K	Extent to which digital formats used by lecturers and students	--	--				40 (100%)

7. Findings of the Study

The study identifies the following are the main findings

- It is found that there are 70 colleges affiliated to Davanagere University, they comprises of 22 Government, 15 Private Aided - including one autonomous, 33 Private Unaided Colleges. The university is new but the establishment of colleges dates back to early 1970 and onwards.
- It is found the healthy sign that the 60% and 54% of responses received from Davanagere and Chitradurga districts respectively. The majority of Government and Private Aided Colleges are having qualified librarian. Though there is sorry to note that the majority of private unaided colleges are not having qualified librarian, the 17 unaided colleges are responded for the quarry of the scholar.
- It is clear from the study that the 100% of colleges having the general collection

consist of books and periodicals (national and international), but the majority of colleges are not having the resources, which are the sign of the digitization trends, like online (e) journals (95%), e-books and Open Sources (87.5%), CD's/CDROM (75%), Databases and bibliographical databases (100%), internet facility in the library (62.5 %).

- It is positive sign as even at least the few of the colleges are having the basic resources, essential to recognize the digitization trend, like online journals (05%), e-books(12.5%), CD's/CDROM(25%), having computers in the library (35%), computers having internet connectivity in the library (37.5%) and so on.
- It shows that the trend of digitalization of library is emerging slowly, like a stepping of child, in the F G Colleges which are affiliated to Davanagere University
- It is found from the study that the 70% of professionals are highly qualified and it is noted that the 52.5% of librarians are double graduates such as Master Graduate with M.Lib.Sc(15%), M.Lib.Sc,Ph.D; MA/M.Sc/M.Lib.Sc,M.Phil,Net; MA/ M.Lib.Sc, LLB (2.5% each) M.Lib.Sc,M.Phil(17.5%), Master Graduate with M.Lib.Sc, M.Phil (12.5%) and at the same time it is noted that 12.5% of librarians are highly qualified and having 25 years and more length of experience.
- It is identified that though there is 30% of libraries are not having qualified librarians, it is possible to digitize the library in 70% of libraries, where there is highly qualified professionals are working
- It is clear from the study that the nearly half of prerequisites fetch negative opinion form the majority of respondents such are research center in the college (90%), aware of digitization among professionals (57.5%), subscription to database (100%), user awareness about digital library, ICT based service and digital resources (65%), Is the college- a member of any library consortia (90%), availability of technologies and components required to digitalise the library (97.5%).
- Further, it is found that some of the perquisites though had positive opinion but they also negative with regard to digitization such are training required to staff (75%), need of awareness programme and training to the user of the library (95%) and so on.
- It is healthy to note that some of the prerequisites had positive opinion like the professionals are having the knowledge of computer (52.5%) and Internet (45%), aware of digitization (42.5%) and aware of library consortia(40%). It signifies that the library professionals are having the knowledge of digitization and proved by taking initiative steps of digitization (55%).
- It is found that the majority prerequisites fetch no response from the respondents, signifies that those responses are from non qualified staff working in the library or lack of awareness of digitisation.
- It is found from the study that the 45% of libraries undertaken the automation of the library and the 10% of libraries provided internet facility to their users but the 55% of libraries are not step into automation of library and 90% of them are not providing internet facility to users.
- It is noted that, no library step in to the provision of online publication (100%) and conversion of print material to digital formats (100%). It specifies that the library professionals are not clearly understand the steps of digitization or their

head of the institution does not support to initiate digitization process in the library.

- It is observed from the study that no single process (100%) of digitization, such as scanning, checking of documents, conversion to pdf., document management system, data storage, writing on the CD. Rom, is going on in any of the colleges - affiliated to Davanagere University. It signifies that no trend of digitization is found in any of the college library.
- It is found that there is not positive response towards the availability of components of digitization in the college libraries and almost all responses are negative except availability of LAN/WAN (05%) and one of the Human ware i.e subject knowledge (45%).
- It is observed that no library having Hardware Components like 24 hours of Internet Connectivity in the library(87.5%), Computer Servers (100%), Scanners (82.5%), Storage media- high power hard disk (90%), WiFi tower and CD's (80%), Digital Camera (77.5%), High power UPS)100%), Converters (85%), Networks (97.5%), Multimedia Interfaces (97.5%) and Software components like Linux Operating System (90%), Digital Library Software- Green Stone or D Space (90%), Editing Software (90%).
- Further it is noted that the negative response for even human ware components like Management Scope (70%) and Lack of Technical Staff (75%).
- It is clear that the main reason for not taking initiative steps to digitalise their library is the lack of interest in head of the institution (100%) and non availability of technologies and components required(100%) to digitalise the library, followed by the lack of trained technical staff (95%), the lack of awareness about digitiza- tion in user (80%) of the library and last, but not least is the lack of funds(57.5%).
- It is found that the satisfaction level of respondents on majority of factors are rated poor such are Infrastructure for digitization (95%), support of Principal (95%), financial support from management/ government(70%), training for staff (80%), availability of trained technical staff (92.5%), awareness in user of the library (90%), but the co-operation between technical staff and other staff carries average satisfaction(95%), and 38% of professionals are available good time to digitize the library.
- It is clear that the factors required for digitization like support of principal and management, equipping sound infrastructure and son are not satisfactory and it is essential to equip all these factors in order to digitilise the library.

8. Suggestion

- As there is no awareness among the user of the library about new technology i.e digitization, it is most important to create awareness among them as and when the new technology is being introduced in the library.
- Updating of knowledge among library professionals along with principals from time to time through orientation, workshops and so on will help to take initiation for digitization.
- Administers of the colleges like management/government and UGC must support through financial to introduce and develop digitization of the college libraries.

- All First Grade Colleges must equip with e-books, e-journals, technologies, components, prerequisites which are essential to initiate the culture of digitization.
- Technical and supportive staff should be made available in colleges to help digitization process and thereby to render library services.

9. Conclusion

The study proved the hypotheses positively but it is negative for the trend of digitization is concerned. As there is no college library possess the components, technologies, software required for digitization and no single process of digitization is undertaken in any of the college library, specified that there is no trend of digitization in libraries of F.G College affiliated to Davanagere university. The study identified that the majority of librarians are having double graduates, and long length of experience but no college authority support them to initiate digitization. The findings signifies that the study is successfully achieved the main objectives for which it is undertaken. It is identified the initiatives taken to digitalize the libraries in First Grade Colleges affiliated to Davanagere District. It is also identified the number of computers available in the library and computers connected to database and internet. It is also observed the status of computerization as well as digitization process of the library. The study finds out the databases, bibliographical databases available in the college and the e-resources and open sources accessible through different web site. The study also observed that the components of digital library available in the First Grade Colleges and made an effort to know the hurdles facing in the digitalization of the libraries. If the authority of the college fulfilled the suggestions made by the scholar, it is no doubt that the trend of digitization will be in progress in all the libraries of F G Colleges affiliated to Davanagere University.

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Dspace: A Boon for Digital Content Management - An Overview

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Abstract

Recent technological advances changed the way libraries and Information professionals should work. The increased availability of electronic resources, including electronic databases and journals, has brought a sea change in the way library users interact with libraries. Librarians have had to keep current with a variety of new resources and implement support mechanisms for these resources. In this paper, the concept of Digital Library and the advantages of DSpace and the necessity of its implementation are discussed.

Keywords: Digital Preservation, Open source, Knowledge Management tool

1. Introduction

There is Penetration of information technology in every field. Libraries are also not exception to it. With the advent of IT, libraries have undergone major structural changes in terms of their collection, organization and services. With the emergence of new digital means of storage and dissemination of information, the concept of traditional libraries is becoming obsolete day by day. Digital information created a new digital world in libraries. Widespread use of IT has completely changed the scenario. Day by day new developments are taking place in the field of library and information science due to which traditional libraries are being shifted to automated libraries and finally to digital libraries. Meanwhile the concept of e-resources come into existence and the traditional manual system has been changed into automated system with library automation, networking of libraries, open source products, digital management, digital libraries, open access journals etc.

2. Concept of open source digital preservation

Digital content management system is a software system that provides preservation, organization and dissemination services for digital collections. Open source is not necessarily confined to software. Open standards, can also be regarded as open source, in the sense that they are freely available and open to the public. Assets conforming to open standards are more qualified for being preserved over a long period of time in as much as they give access to the file format. Making it easier to develop a tool which migrates this format should it become obsolete? In addition to this, many of the file format specifications like the *OpenOffice.org, spreadsheet* and *document formats* are also open sources. However, proprietary solutions can also provide satisfying results, having the advantages of continuing and guaranteed customer support. Open standards for files to be preserved, and also the implementation of the preservation software and its parts under an open source license brings advantages. Other institutions can use components developed using open software and adapt to their needs.

3. Traditional library v/s Digital library

The advantages of digital libraries as a means of easily and rapidly accessing books, archives and images of various types are now widely recognized by commercial interests and public bodies alike. Traditional libraries are limited by storage space; digital libraries have the potential to store much more information, simply because digital information requires very little physical space to contain it. As such, the cost of maintaining a digital library is much lower than that of a traditional library. A traditional library must spend large sums of money paying for staff, book maintenance, rent, and additional books. Digital libraries may reduce or, in some instances, do away with these fees. Both types of library require cataloguing input to allow users to locate and retrieve material. Digital libraries may be more willing to adopt innovations in technology, providing users with improvements in electronic and audio book technology as well as presenting new forms of communication such as wikis and blogs. Conventional libraries may consider that providing online access to their OPAC catalogue is sufficient. An important advantage to digital conversion is increased accessibility to users. They also increase availability to individuals who may not be traditional patrons of a library, due to geographic location or organizational affiliation.

4. Advantages of digital library

- No physical boundary:
- 24x7, availability:
- Retrieval of Information:
- Perspective of Preservation and conservation:
- Free from space problems:
- Added value-
- Powerful knowledge management tool-
- Easily accessible-

5. Copyright and licensing

Digital libraries are hampered by copyright law because, unlike with traditional libraries, digital libraries do not have access to works from every time period. The republication of material on the Web by libraries may require permission from rights holders, and there is a conflict of interest between them and publishers who may wish to create online versions of their acquired content for commercial purposes. In the year 2010 it was estimated that twenty-three percent of books in existence were created before 1923 and thus out of copyright. Of those printed after this date, only five percent were still in print as of 2010. Thus, approximately seventy-two percent of books were not available to the public. There is a dilution of responsibility that occurs as a result of the spread-out nature of digital resources. Complex intellectual property matters may become involved since digital material is not always owned by a library. One advantage of open source software is that it allows new entrants to stand on the shoulders of established developers, not on their feet.

6. Outline of Dspace digital library software

Out of the many open source systems for digital libraries, one of the most prominent is DSpace. DSpace has a more impressive institutional pedigree. DSpace was conceived by Hewlett-Packard Labs as a noncommercial product, and has been developed in conjunction with MIT Libraries. This has active open source developer communities. DSpace (http://www.dspace.org) facilitates the building of institutional repositories that capture, distribute and preserve intellectual output at an institutional level. DSpace is designed to help capture and organize everything produced by faculty and staff – digitized versions of lecture notes, videos, papers, and data sets – into an "institutional repository" that will make it available to future generations in its original digital form. Of course, it has applications in government organizations and commercial enterprises too. DSpace provides a set of tools for helping institutions keep track of their data, organize it in meaningful ways and migrate the data to new formats as old ones become obsolete. It helps establish a system for the creation of the data in a manner that is as automated as possible, in order to handle the increasing volume and complexity of the data being produced.

The key points that DSpace makes it its core business to support include:

- Repositories at an institutional level
- Self-deposit of digital assets by faculty
- End-user interface for depositors
- Assets made available for searching and browsing
- Data retrievable many years in the future
- Institutional commitment to ensure the continued availability of certain named formats.

7.1 Typical features of Dspace

7.1.1 Preservation

The act of creating any digital library collection based on open source software will contribute to the preservation of the material it contains. However, DSpace is explicitly oriented towards long-term preservation; DSpace stores preservation metadata and includes a scheme where institutions commit to ensuring the continued availability of certain named formats.

7.1.2 Supports infrastructure

DSpace is designed for institutional use, where there are centralized computing facilities and a competent infrastructure for software support.

7.1.3 Multiplatform operation

DSpace is currently restricted to UNIX and OS/X. Note that, this is unlikely to be a serious practical disadvantage in typical DSpace usage scenarios.

7.1.4 Author-oriented

DSpace incorporates an interface whereby users (typically authors, though some institutions choose to have librarians do this on behalf of the faculty) can submit documents to the system, and define metadata for them.

7.1.5 Librarian-oriented

DSpace provides a generic design that can be tailored – but not by typical end users.

7.1.6 Built-in metadata standard

DSpace imposes a single metadata standard on all collections.

7.1.7 Dynamic collections

DSpace operates incrementally (though operations on recently-added documents like extracting text or producing image thumbnails are processed in batch mode).

7.1.8 International users

Although the default DSpace configuration is currently restricted to UNIX, it would not be hard to modify it for other operating systems. And there are some DSpace installations in languages other than English.

8. Conclusion

DSpace is designed to help libraries in creating their own digital libraries. Dspace has the advantage that it has unique goals and strengths. The goal which is common with other system is flexibility. Because it is open source and this is the advantage over paid ones. DSpace supports institutions in their struggle to capture and disseminate the intellectual output of an institution and preserve it indefinitely – epitomized by its use by MIT Libraries, who helped pioneer its development. However, this is highly flexible and customizable to meet a wide variety of needs. There are fertile opportunities for export/import between the two systems. As well as being of great practical benefit to users, studying these opportunities sheds light on many practical issues of interoperability between different digital library systems. We regard it as healthy that different open source systems are being developed for digital libraries. We hope that library implementers will find this work helpful in satisfying the needs of their users.

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$y = 6 \rightarrow F(y^2) = \frac{3345}{6^2} = 93$

$y = 7 \rightarrow F(y^2) = \frac{3345}{7^2} = 68$

$y = 8 \rightarrow F(y^2) = \frac{3345}{8^2} = 52$

$y = 9 \rightarrow F(y^2) = \frac{3345}{9^2} = 41$

$y = 10 \rightarrow F(y^2) = \frac{3345}{10^2} = 33$

$y = 11 \rightarrow F(y^2) = \frac{3345}{11^2} = 28$

$y = 12 \rightarrow F(y^2) = \frac{3345}{12^2} = 23$

$y = 13 \rightarrow F(y^2) = \frac{3345}{13^2} = 20$

Table 4: Values of observed and expected number of authors

No. of papers	No. of authors (observed)	Number of authors (expected)
1	3345	3345
2	630	836
3	128	372
4	67	209
5	43	134
6	19	93
7	6	68
8	8	52
9	4	41
10	3	33
11	3	28
12	1	23
13	1	20
	4258	5254

From the above table it is evident that the expected values are not close to the observed values upto the number of papers. Hence Lotka's Law doe not fit for the study.

5. Findings

Lotka's Law does not find fit for this study.

6. Conclusion

Authors with multiple contributions the observed values deviate considerably from the predictions of the law. This may be due to the differences in pure and applied

science. As an applied field, the contributions came more multipline authors especially from different disciplines.

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5. Disadvantages

The disadvantages include the following:

- Every product will be having its own distinct user interface.
- Digitization violates the copy right law as the thought content of one author can be freely transfer by other without his acknowledgement
- Users need to remember different passwords for different products.
- The scope of coverage and available archives is often limited.
- There are often difficulties with downloading or printing.
- Often there is no cost savings, especially when both the virtual and print products are maintained and the cost of hardware, software; leasing communication circuit is generally very high.
- Everything is NOT available in digital format.
- There are restrictions, which vary from vendor to vendor, on how the product can be used.
- The virtual library relies on power and computer networks in order to be available for use.
- Users can't spread everything out in front of them and use it all at once and comfortable in using books.
- Lack of knowledge in using to access the required information.

1. Challenges facing by librarians in virtual library environment

The most pressing issues and challenges that the librarians face in the present digital era for providing digital information service to the knowledge society are:

- New generation of learners
- Copyright issues/ Confidentiality
- Online/Virtual crimes and Security and Technology challenges
- Manpower and Collection of digital e-resources
- Organizational Structure
- Preservation / archiving of digital e-resources
- Lack of clarity in vision

2. Changing Roles of Librarians

Though the digital environment is built as a system, which can be used by its ultimate end user directly from their desktop pc, the role of librarian cannot be overlooked. Here the responsibility of the librarian and information scientist will increase in packaging and repackaging of information, in electronic publishing, to advise the user about the strategy to identify relevant electronic sources etc. In such a new environment it will be very difficult for the librarian to decide what should be organized? How to give citation? How to organize the collection? Etc. In such a situation librarian has to change himself and should be more enough than a traditional librarian.

8.1 Leadership Role

One primary role of librarians is to provide leadership and expertise in the design, development, and ethical management of knowledge-based information systems in order to meet the information needs and obligations of the patrons. He should enrich his management skills for organizing, managing and disseminating e-literacy to users.

8.2 As an information provider:

Providing information resources to patrons - regardless of format is most necessary quality of the virtual librarian. He should be able to satisfy all type of user especially research scholars and young generation who uses internet frequently for the latest up gradation of the information. He should be able to create his own website as an easier way to share with others what they know. He should gather electronic information and create electronic pathfinders and front-end search tools to help users for accessing the required information. The development of electronic reserve (e-reserve) collections, demonstrates another way in which librarians are adapting new technologies to deliver services more effectively. It is essential to develop user interface to access the information. Standard Z39.50 helps users to search across multiple databases simultaneously

8.3 As an evaluator

Evaluating the right information at the right time is the most important factor in virtual library. Batt (1999) observed that there is an increasing diversity of information resources from which to choose the most appropriate vehicle, and that librarians must widen their selection processes in order to decide on the right medium for each situation. Electronic sources of information are excellent for data which must be timely and is subject to frequent change, such as stock market data, weather reports, and population statistics.

8.4 Classification of online information

Mason (1998) noted that 'the more there is on the web, the harder it becomes to find'. It is ironic that organizing vast quantities of information is becoming a demanding issue for those involved in the development of the internet. This requires keen understanding of the traditional library management issues and the skill of adopting those terms to new environment.

8.5 Utilizing the available Manpower

Information retrieval is the most obvious skill a librarian demonstrates to the public. Adequately skilled staff should be recruited to meet the increased demands of the knowledge society. With a rapidly changing environment both within and outside the library, staff development programs are essential to the continued success of the organization.

8.6 Proactive Information Professional Role

The modern trend is for the role of the librarian to move from that of a passive intermediary role responsible for guiding patrons to appropriate information resources, towards that of a much more proactive professional role which includes analyzing and

repackaging information, content information management systems and institute digital repository management systems.

8.7 As an Information Scientist

Librarians have to change their role in the e-learning environment by participating in e-learning experiments and becoming involved in universities e-learning centers. A well learned must teach information literacy to educate future knowledge workers, in traditional ways or via Internet-based instruction modules.

8.8 As E-Resource Managers

Academic and research libraries have a major role in ensuring that they and their home institutions remain vital players in the changing terrain of information and education. Faculty may not aware of copyright issues and do not know what material is electronically available or licensed by the library. Virtual learning systems can be connected to library systems, through the integration of library systems at the backend via the technology components, and through the close liaison and involvement of library staff in VLE development.

3. Conclusion

Librarians are professionals trained in the acquisition, organization, retrieval, and dissemination of information. In essence, the practice of librarianship in the virtual library environment will not be very different from that in the traditional print-based library. Virtual library is not the ultimate answer to everyone's information needs. It is merely another step in a dynamic and evolutionary process. The traditional print library and traditional library services will not disappear. But, as librarians, we must accept and adapt to the introduction of new techniques and systems. We must recognize the enormous potential of the virtual library, address the issues involved in its creation, and take a leadership role in integrating these new systems and services into our libraries, for our own good and for the good of our users.

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Effective and Flexible LMS for the Academic Institutions Using Moodle: A Study of St. John College of Engineering & Technology Library

Patil M S **Virupaksh B H**

"Change your thoughts and you change your world" – *Norman Vincent Peale*

Abstract

This paper points out that Moodle based- LMS provide technology based information resources and services to enable our faculty and students to access relevant information anywhere anytime, as well as provide empowerment for innovative and life-long learning. The paper provides practical initiatives by SJCET's faculties and library staff, opportunities to provide e-learning support to both academics and learners. Some of the initiatives of SJCET-LMS (Moodle based) are discussed in this paper.

Keywords: LMS, Moodle, E-learning, Information centers

1. Introduction

Change is the law of nature. The library and information centers (LIC) or institution, which does not change with the passage of time, always lags behind and goes into oblivion after some time. To congregate the challenges of today's information exchange and sharing activities driven by the internet and World Wide Web, more and more academic administrators, faculties, librarians and other professionals worldwide are seeking new and innovative ways of enhancing and integrating academic information applications, databases, programmers, resources, services and systems in diverse student-centered and service-oriented academic learning environments.

Library and information center (LIC), as a support department that is regarded as a centre of academic learning, is dedicated to providing access to relevant information for learning, teaching and research through application of communications technologies. The SJCET-LIC has been playing a major role to support of learning and teaching, research strategy, and e-learning. In this regard the library should be seen as an integral partner in disseminating information that directly affects learning, teaching, and research. The Moodle project is implemented at St. John Technical Education Complex to help the students and faculty to share their sources like lecture notes, audio visual lectures assignments, conduct quiz, journals and other resources which will useful for students and faculties. It can be access at any time anywhere.

2. E-Learning and Academic Institution

Today ICT has developed so speedily that it is viable to access the classes and resources from anywhere in 24/7 environment and any number of times. This also results in a new trend in academic sector of learning and teaching pedagogy. The exemplary scenario is unfolded by virtual classrooms that facilitate the collaboration and integration

of discussion forums, chat rooms, quiz management, lecture notes and assignment repositories, subscription services, relevant web links, e-mail distribution lists and desktop video-conferencing into a conventional lecturer-based system. The concept of learning adapted in new mode of teaching and learning in academic institution is more interactive and multidimensional, there is a change from lecturer-centered to student-centered/ learner-centered approach in the mode of teaching.

3. E-Learning and Academic Libraries

Academic librarians generally serve the subject academicians to provide information regarding teaching, learning and research. Though not everywhere, yet e-learning has been integrated in the curriculum of most of the university by different faculties. From the library side it has been a great opportunity to integrate the library resources and services in support of learning, research and outreach. In recent years several bold steps have been taken to integrate e-learning with the academic work. Most of the modern academic libraries are digital and e-learning can effectively take place in a digital environment. Academic libraries apply appropriate communication technologies in support of e-learning and e-research by providing seamless access to electronic resources and services. Electronic resources include online catalogues, databases, multimedia, online journals, digital repositories, electronic books, electronic archives and online / electronic services. The utilization of cutting edge technologies by academic libraries to provide access to resources and services in support of learning, teaching and research has benefited both on-campus, part time as well as distance learners. Both students and lecturers can undertake learning and research without being in the library. An academic library, faculty and academic development department managing e-learning may use appropriate technologies to facilitate learning and access to resources and services. It is quite understandable that an e-learning environment can provide both students and faculty with a sustainable infrastructure and seamless access to knowledge, course content, information resources and services, all from integrated service point.

4. Moodle an Integrated LMS

Moodle is an e-learning tool that can offer simple and safe solutions to any institution, no matter how large or small, be it an individual teacher or a huge university. Moodle facilitates online collaborations, which can be teacher-to-student, teacher-to-teacher or student-to-student. With Moodle, we can create learning spaces called 'courses'. Each course has its own set of resources and activities, called 'modules' in Moodle, and can be customized in terms of organization and appearance. We can password-protect courses so that only enrolled students or teachers have access. We can also time limit access to courses. Once a course is set up, then we can fill it with activities and texts, including audio and video. Students are also free to access those texts whenever it suits them. Moodle works particularly well when combined with face-to- face learning – also known as blended learning. Here are some examples of what we can do:

- Enhance the teaching with online supplementary activities
- Provide students with links to websites relevant to a course.

- Upload a series of learning activities created in some authoring software,
- Ask students to reflect on their learning through a blog or a journal.
- Work in teams to co-author a document using a Wiki.
- Set up a list of things for students to do before coming to a lesson.

5. Why Choose Moodle?

Moodle is open-source. This means that the code is freely available. As a result, it is free to download, there is global support for it from enthusiasts and professionals and it is customizable. Figure 1 shows an example of a Moodle based SJCET-LMS. Moodle is similar to its commercial equivalents such as Blackboard, Angel, eCollege and Desire2Learn. One key difference is that Moodle is open-source. This means that the code is freely available. As a result, it is free to download, there is global support or it from enthusiasts and professionals and it is customizable. Here are some reasons for choosing Moodle:

- Easy to use! – no programming knowledge is needed
- Access to resources via the web
- Interaction between learners and tutors
- Collaboration between learners
- Independent learning pathways
- Learner tracking
- Feedback on tasks
- Secure environment
- Automatic backup
- Detailed grade book based on work submitted by students

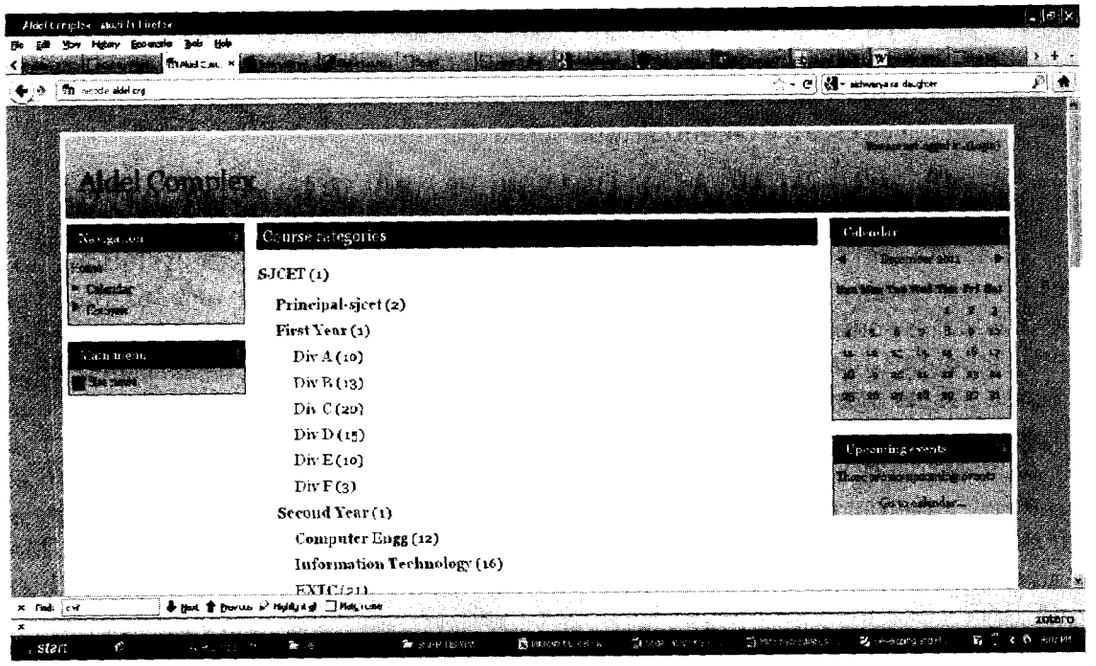


Fig 1: Main user interface of SJCET's Moodle based LMS (http://moodle.aldel.org /)

6. St. John Technical Education Complex: A Profile.

St. John Technical Education Complex comprises of the following institutions:

St. John College of Engineering and Technology (SJCET): St. John College of Engineering and Technology has since 2007 been an integral part of the St. John Technical Education Complex set up in 2007 Palghar, Thane. This offers professional education in 5 branches of engineering viz. Civil Engineering, Computer Engineering., Electronics and Telecommunication Engineering., Information Technology and Mechanical Engineering.

St. John Institute of Management and Research (SJIMR)
St. John Institute of Pharmacy and Research (SJIPR)
St. John Institute of Hospitality and Catering Technology (SJIHCT)

7. SJCET Library and Information Centre (LIC): An Overview

The Library and Information Centre (LIC) is the lung of every educational institute, which breathes knowledge and information into the minds of the students. The SJCET has a well equipped LIC with an elaborate collection of books, journals, project reports, AV-materials and other resources to serve its users. The L&IC is an invaluable resource for students, researchers and faculties of engineering and applied sciences.

8. SJCET's Moodle Based Learning Management System (LMS)

8.1. E-learning support initiative by SJCET faculties

SJCET'S Faculties are playing a vital role in designing and organization of resources for the SJCET-LMS. The work that can do includes: Categorize lesson plans and learning objects at the departmental level, categorize documents by department level in order to create a searchable structures that use descriptions based on those who use those documents. Moodle offers hundreds of optional modules. Let's look in more detail at some of the core ones used in SJCET-LMS Moodle. Figure 2-3 shows an example of a Moodle based SJCET-LMS.

Assignments: Students can upload assignments for teachers to mark. Teachers get an automatic alert when a new assignment arrives. All marks can be stored in the Moodle grade book. You no longer have to worry about losing score sheets!

Database: The database module is good for building searchable repositories. A common use of this module is for storing past exam papers, activities for students to do or print out, or collections of students' work.

Forum: The forum module enables students to have virtual seminars. The teacher provides a text or audiovisual file, which the students respond to, one after another. And in so doing, they are not only reacting to the stimulus file, they are also responding to each other. Of course, Moodle is not the only tool to offer this, but it is one of many modules which all come in one package. This module can also be used for displaying student work.

Lesson: The lesson module allows a teacher to write a series of lesson pages, each one ending with a question. If the students answer it successfully, they may continue.

Otherwise, they can be sent back to review the lesson or directed to a remedial page. This allows students to spend as much time as they want or need on tricky questions.

Journal: The journal module is an online diary – useful for keeping notes and writing reflections on activities.

Quiz: The quiz module offers a wide range of quizzes and tests with which teachers can create revision activities. Moodle stores questions for use in other quizzes, even with other courses. The Moodle grade book records students' results, and provides a detailed breakdown of responses to different questions. The quiz module also allows you to shuffle questions within quizzes and to shuffle distracters within test items. Moodle is a useful tool for running

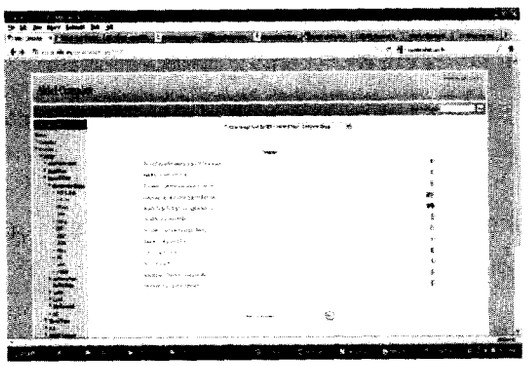


Fig.2. SJCET-LMS Stream wise courses.

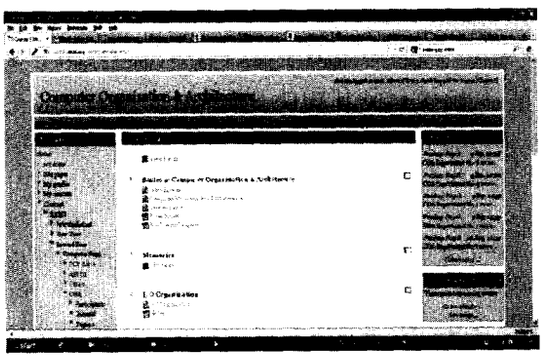


Fig.3. SJCET-LMS Subject wise courses.

(Ex. First Year (Civil, Comp, EXTC, IT & Mech.) (Covers Notes, Assignments, Video Lectures, Test Papers, etc) (http://moodle.aldel.org/course/category.php?id=10) (http://moodle.aldel.org/course/view.php?id=262)

8.2. E-learning support initiatives by SJCET Library

In the SJCET-LMS, library took initiation of creating some courses like institutional repositories, e-books, e-journals (which are freely available on Internet), university question papers and solutions, university syllabus, new arrivals (library books & journals), news paper clippings, dept. wise and some useful websites links, websites, case of libraries what is good for the online student is also useful for the campus based student. By a study it was seen that the librarian facilitating the e-learning are establishing a positive relationship between the academic achievement and use of open shelf library books. Here we try to integrate some e-resources and services in support of learning, teaching, research, and outreach to our faculty and students for their preparation with the help of learning management system (Moodle) in order to speed up the application communication technologies in e-learning. Here are some of the initiatives of SJCET- library and information center are listed below: Figure 4-7 shows an initiatives of a Moodle based SJCET-LIC-LMS.

1. **Department wise details:** Created each departments websites through Moodle and it cover whole details about dept. Ex. Civil- About dept, Faculty profile, Students

details, Lecture notes, Term papers, Laboratories details, journals, subject titles, e-books.

2. **Institutional repositories:** Locus for collecting, preserving, disseminating intellectual of an institution.
3. **Electronic books:** Collection of e-books sites which are freely available on the net
4. **Electronic journals:** Collection of our printed journals and e-journals which are freely available on the net.
5. **Mumbai University question papers and solutions**: It's collection old question papers of the engineering and their solutions arranged year wise.
6. **Newspaper clippings:** Collection of clippings concern to engineering, education, science and technology, AICTE, etc.
7. **Study Temple:** This is a locus of competitive exams like GATE, UPSC, MPSC, and other competitive exams source.
8. **Current Awareness Service:** Books new arrival, Journals new issues & other happenings of the library
9. **Library home page:** It's about library collection and other details like timing etc.
10. **Publisher catalogue:** Listed all the publisher and their catalogues specially concern to engineering and applied sciences etc.

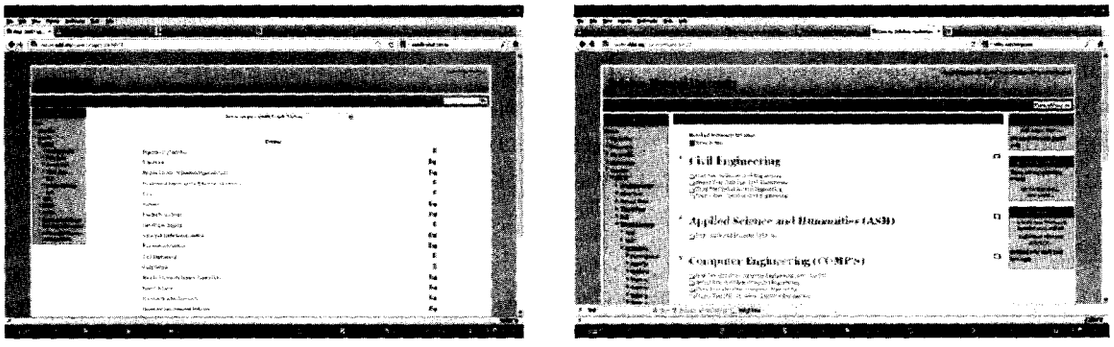


Figure 4-5 shows an example of a Moodle based SJCET-Library LMS. (http://moodle.aldel.org/course/view.php?id=122)

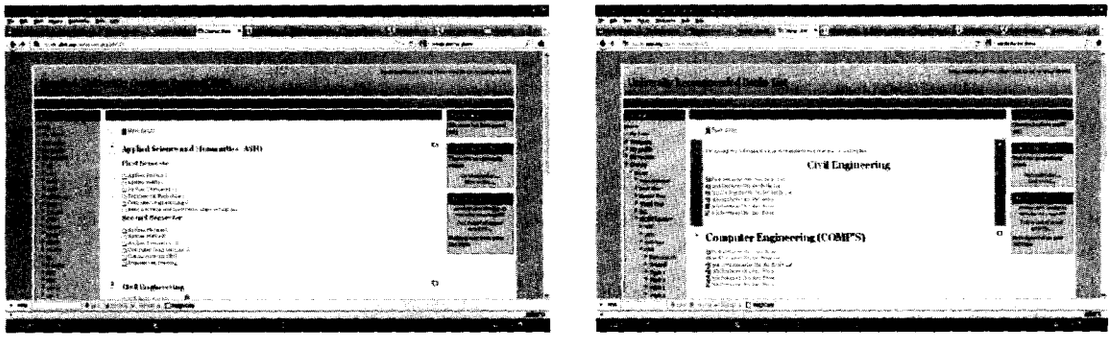


Figure 6-7 shows an example of a Moodle based SJCET-Library LMS. (http://moodle.aldel.org/course/view.php?id=121)

9. Role of Libraries and Information Centre (LIC) and Librarian:

The library, as a knowledge base, is the sum total of all documents, organization, tools, services and environment that actively support the use of records for knowledge creation. The role played by librarian is to tend to this human knowledge base and constantly increase its value for the betterment of society. They provide support for both students and teaching faculty in the process of learning. More specifically, there is want of dedication for student and teacher community in the academia. The most effective support system for teaching faculty is in building up a course contents for the development of advanced teaching methodology. The following are the platform which a librarian provides on building L M S:

- ❖ in the development of collection (contents)
- ❖ in providing value added services.
- ❖ hyperlink the e-courses with the library e-reference resources such as e-books and e- journals as well as with the web-based open-access resources
- ❖ designing integrated web portal to provide friendly access library scholarly e-resources with efficient browsing and research abilities.
- ❖ e-literacy programmes to develop e-learning information search skills;
- ❖ acquisition of core e-collections specifically that recommended by e-learning initiative;
- ❖ promotion of library e-services to the virtual e- learning community; and prompt document delivery and outreach services via electronic transmission 8 efficient helpful tools to support instructor-created e-course.
- ❖ facilitation of scholarly communication and virtual classroom collaboration

10. Conclusion

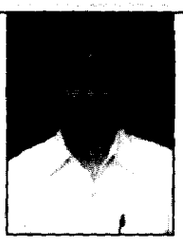
The library is the lung of every educational institute which breathes knowledge and information into the minds of the students. St. John Technical Education Complex has a well equipped library and information center (LIC) with an elaborate collection of books, journals, project reports, AV- materials and other resources to serve its users. Library, as a support department that is a centre of academic learning, is committed to providing access to relevant information for leaning, teaching and research through application of communications technologies like blogs LMS, Library WebPages etc.

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Effective Use of Electronic Journals by the Faculty and Students of Goa Institute of Management: A Survey

Fatte Samir R **Dhuri Keshav R** **Malwankar Vikrant P**

Abstract

The Information and Communication Technologies (ICTs) have influenced in all most all the field more particularly the scholarly publications. Now most of the leading publishers in the world moving from print to electronic resources and services. Therefore libraries are accessing and delivering electronic resources such as e-books, e-journals, e-databases etc. This study highlights the use of electronic journals and experiences of students about various issues relating to electronic journals in their requirements for their post-graduate studies. A self designed questionnaire was distributed among the students. The data was analyzed and presented in the form graphs and charts. The study found that majority of the users is aware of Electronic Journals.

Keywords: ICT, Electronic resources, Users, Goa institute of management

1. Introduction

The development in information technology has created revolutionary changes in all field of knowledge. Libraries being the reservoirs of knowledge are no exception to this development. People seek information for their research, education, references, and guidance from libraries. The boom of information technology has brought about a far-reaching change in the society. Today information is regarded as crucial and vital resource for nationwide development. The materialization of information society has put forth the new challenges and responsibilities before the library. The main aim of every library is to make effective use of the library by any means. Information is important in every field of activity, more so for a Management student an MBA. Students have to be up to date and fully informed about many factors of the economy and business environment of the day. In the light of this, the information sources and services are the most essential components for study and research. Since libraries are the leading place to welcome the forth-coming applications of information technology as well as latest information products, and as a mediator of information communication, library professionals in any Business school should know this and practice it to core.

2. Goa Institute of Management (GIM): An Overview

Goa Institute of Management (GIM) is one of the premier B-schools in India consistently ranked among the top few in most surveys. Goa Institute of Management has one of the best IT infrastructures among business schools. It includes high end servers like IBM Netfinity 5500 & 5000 and IBM X226 Series server. We have 2 MBPS unlimited leased line connectivity from BSNL. We use OS like Linux, windows server 2003 on the servers. The common labs are used to learn advanced software. The entire campus is connected via cat5e backbone on optic fiber with high end switches, which enables the students to get round the clock access to all learning resources from their hostel rooms.

Databases Available and Accessible at GIM

- CMIE
- EBSCO
- PROQUEST
- Mudra Institute of Communications
- VANS (1998-2002)

3. Scope and Limitations of the Study

This study limited to access and effective use of e-journals by the students of users and the geographical area is restricted to faculty and students of Goa Institute of management only.

4. Objectives of the Study

- To find out the frequency and of effective use of E-journals
- To find preferred place for accessing E-Journals.
- To know the usefulness of online information resources of the library
- To know the primary information needs of users from online journal sources
- To know the level of user awareness of online journal access
- To study the usage of online journals and its affect the library usage
- To study whether the users are satisfied with the Electronic journal databases

5. Methodology

In order to collect the comprehensive and relevant data for the study, the questionnaire method was used. List of questions were formulated keeping in view the objectives of study. Data was collected from the 100 users.

6. Analysis and Interpretation of Data

6.1 Access to Computer and Internet

As the chat depicts that there is a percentage difference among all the four options given. 35% of the students find it convenient to access the journals at their hostels. The faculties access the online journals at work place or either at their homes. These come to 22%.Where as 41% say that they access the online journals at their homes, workplace and Institute. Overall it shows that convenience plays a very important role to the user. Hence it is very important that the usability of the resources shall meet the convenience of the users.

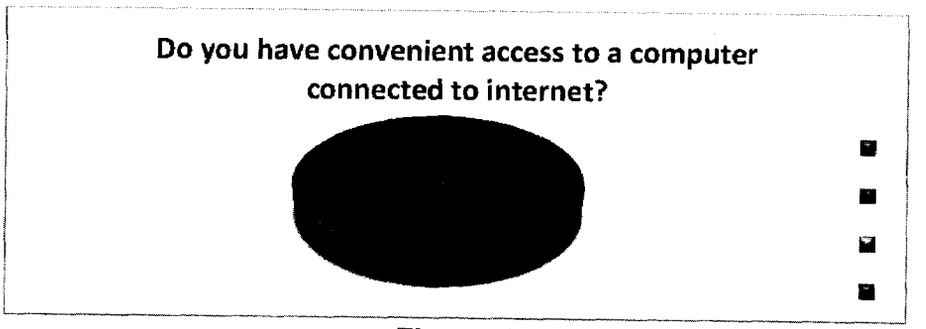


Figure-1

6.2 Frequency of Access to Computer and Internet

As shown in the chart majority of the users like the students and the faculty use or access the computer on a daily basis. Around 62 % of the faculty and the students use the computer daily. While 38% of them use the computer twice in a day. Since the computer is used on a daily basis it becomes very easy for the students and the faculty to access the online journals.

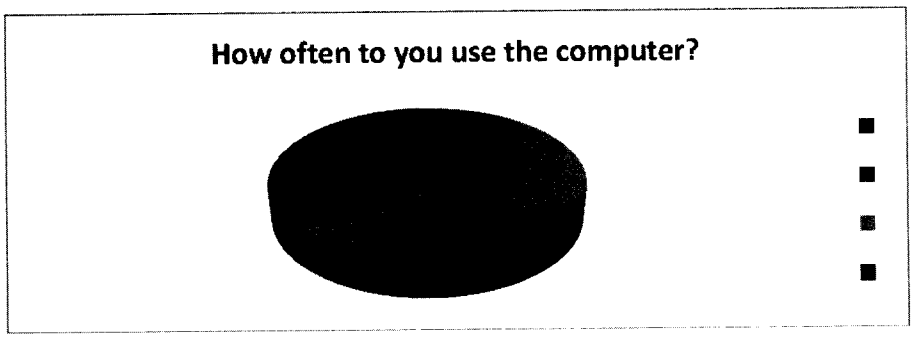


Figure-2

6.3 Awareness about the GIM E-journals Facility

As seen in the chart it says that 86% of the users were aware of the online journal facility. While the rest of the 14% say that they were not aware of the facility. This throws light on the extend of awareness that the faculty and the students have about the facilities in the library. This shows that more orientation programmes have got to be conducted to the faculty and the students and also guides to give instructions as to how the facilities have got to be made use of to the best of their utility.

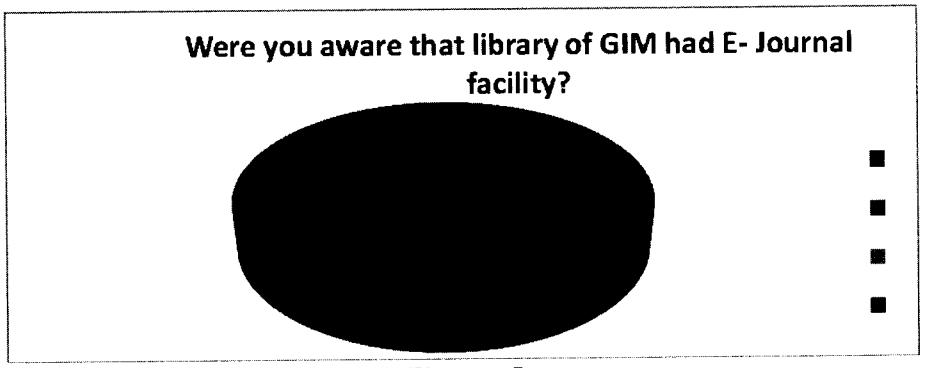


Figure-3

6.4 Searching of Various Databases

In Goa Institute of Management there are a lot of Electronic subscriptions done by the faculty as well as some of the students. Well some of them prefer to access it themselves through the internet. There are 66% of students as well as faculty who access online journals personally. There are 6% who do not access online journals personally but through a librarian. The other 6% access the online journals through a technician assistant or the students. While the other 22% of them do not access online journals due to lack of

interest or due to no time to do so. Therefore most of them access online journals in the institute personally or through the librarian.

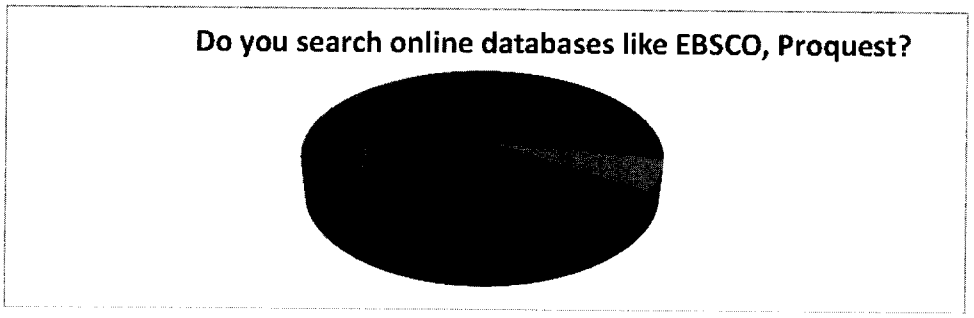


Figure-4

6.5 Location of Access to E-Journals

Since online journals can be accessed anywhere in the campus as in the Institute. The students can access it in their hostel rooms as well. But many of them have their own choices. Some of them access the online journals in the library about 15% of them access the online journals in the library due to convenience. 31% of them access online journals in their offices or in the net labs.51% of them access the online journals at their hostels or the faculty may access them at home. While the remaining 3% have got their own ways and means of accessing online journals may be through their own sources or by taking printouts or reading in the library itself.

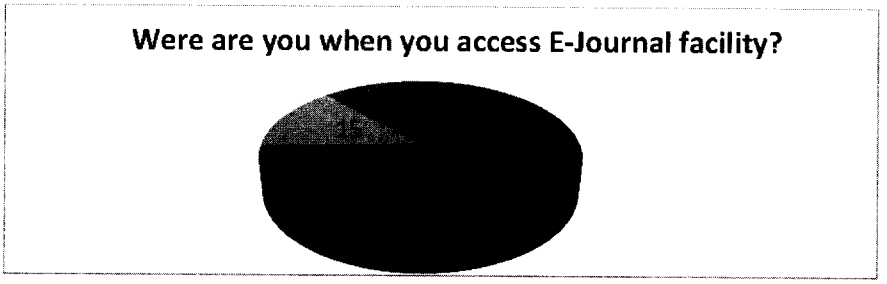


Figure-5

6.6 Access to Various Databases

Well amongst the two Proquest and EBSCO many of them prefer Proquest to EBSCO. 55% of them prefer Proquest and 35% of them Prefer EBSCO. While the rest of them refer to the others like Capitaline, Vans etc.

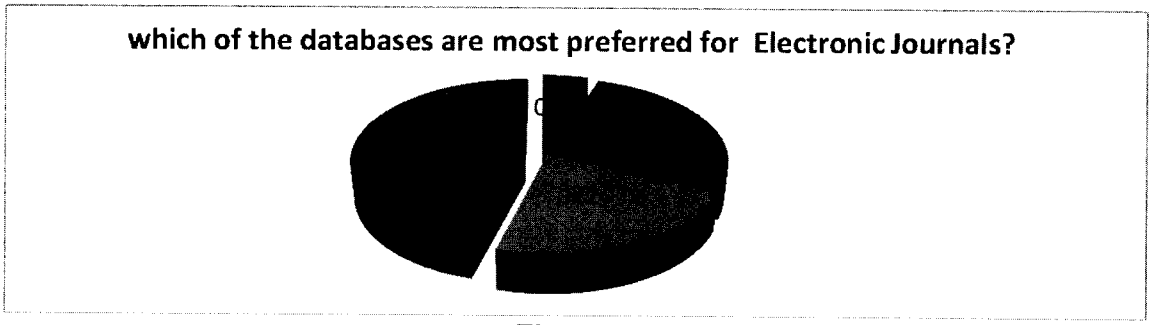


Figure-6

6.7 Level of Access to E-journals

Well 22% of the students as well as the faculty find it tough to access or do not know to access online journals. 22% of them do not find it necessary to access online journals. 16% of them do not find the time to access journals online. 12% say that they do not have any help available to search online journals. 4% of them were not aware of the online journal facility provided to them in the Institute. 8% of the students find it very cumbersome to access online journals. 4% of the students find accessing online journals time consuming. 4% feel that the online version of the journal is not as up to date as the latest print issue.

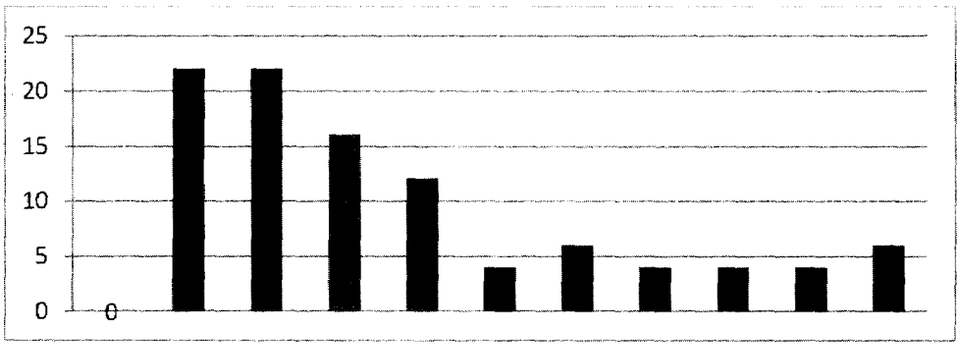


Figure-7

6.8 Reasons of Searching of E-Journals

The reason for searching Electronic journals could be many. As shown in this chart 33% of them search online journals for research purpose, 48% search online journals for class assignments , 9% search online journals for instructional preparations, 4% use for teaching notes and the remaining 6% search online journals for other purposes like reference notes, project reports, dissertation, etc.

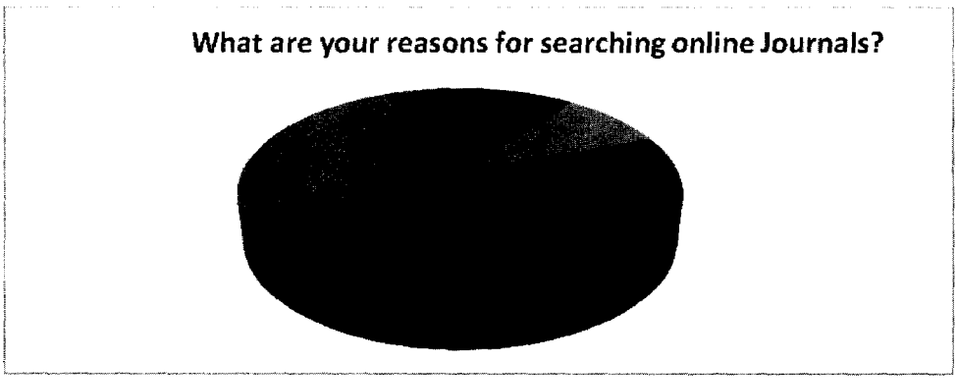


Figure-8

6.9 Awareness about E-Databases

This facility was known to them through different channels. 46% of them came to know about it from the instructor or the faculty. 22% of them came to know about it

through the librarian. 27% came to know through friends and colleagues and the remaining 5% came to know by research literature or journal.

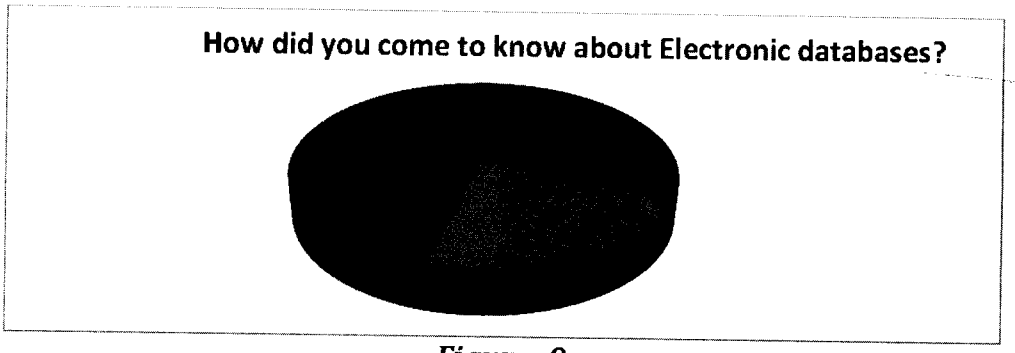


Figure -9

7. Findings

- The frequency of usage of Electronic journals is increasing day by day.
- Most of the users prefer PROQUEST and EBSCO databases to search the information.
- Only few users are unaware of the facilities available in the library.
- Most of the users are satisfied with the information.
- Convenient access of the computer and internet connectivity plays a very important role to the user.
- Most of the users are happy with the databases available.

8. Suggestions and Recommendations

- User training should be given for the proper exploitation of Electronic journals.
- Librarians should have to create more awareness functions to market their E-Journal facility being provided in the library.
- The Library staff should start bulletin board services to inform the students about new additions of online Journals databases.
- The library should organize regular workshops to enhanced usage of Electronic Journals.
- In order to increase use of Electronic Journals by students the faculty should give more assignment related to their research topic, so that they may be forced to exploit online Journals services more efficiently.
- Library staff must be skilled to navigate various Electronic resources especially online Journals by which they could provide better services to the user while they are facing any problem in access of Electronic Journals.
- Introduce proper feedback systems to know about proper use of Electronic Journals facility.
- User's studies should be conducted to know about electronic information needs of users as well as problems they are facing while searching information through Electronic Journals.

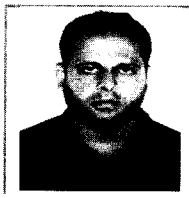
9. Conclusion

The study carried at Goa institute of management reveals that e-journals have become the vital part of information dissemination process. Awareness and convenience seem to be major factors in the selection of resources whether print or Electronic. The faculties and students have access to the computer and a network connection. Interestingly the purpose of use varies even among the students. Users tend to select a limited number of databases and seem to be unaware of the availability of databases other than those they use regularly The need to teach the scope and purpose of resources must be reinforced as a priority in instructional programs. Convenience play a important role when users choose to access Electronic journals but convenience might also play a role while selecting which Electronic database to use. The success of Electronic journals and database will depend on how well these various functions come together to produce a system of immediate and seamless access to electronic information. The findings in this study confirm that a large percentage of users in an academic environment prefer Electronic resources. The study also brings out some major suggestions for improving the use of e-journals. This study will help the library professionals in developing e-journal services to its users.

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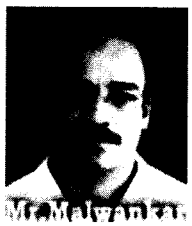
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Effective Use of Library Collection by the Users of Sir M. Vishweswaraya Post Graduate Centre, University of Mysore, Mandya: A Study

Selvaraja A **Umesha M B** **Swamy D** **Mahadevamurthy M**

Abstract

The library and information centers are the living institutions of the progressive society. Library collections are most essential components of the library to provide effective and efficient services to the user's community. The present study discusses the use of library collection by the users of Sir M. Vishweswaraya post graduate centre, University of Mysore, Mandya (Karnataka). The study is focused on the opinion of the library users on different collections of the library and their arrangement and usefulness. Further, it concentrates on the user requirements and role of the library staff in fulfilling their information requirements and concludes by giving some fruitful suggestions to improve the library collection and its use.

Keywords: Library collection, Use, Library users, Mysore University PG centre

1. Introduction

Library is often referred to as a centre for the community, as the heart of a university, or as the laboratory of the humanities, but studies of library use have concentrated heavily on surface phenomena, such as frequency of visit or loan statistics. The library collections, although ordinarily thought of in terms of books and serials, actually contain a very broad range of materials like manuscripts, archives, photographs, recordings, movies, maps, atlas, etc. Now in addition to printed materials the libraries providing electronic resources like e-journals, e-books, e-databases to satisfy the changing needs of the user community.

In general, the purpose of the library is, or should be, to constitute a resource for answering inquiries that arise. The term 'inquiries' used here in a very broad sense, ranging from research concerning what is not known to the individual, to perusing texts for vague curiosity and amusement. The intended outcome is that library users will become better informed. In this connection, an attempt has been made in this study to identify the use and satisfaction of library users with the collection development of Sir M. Vishwesharaya Post Graduate Centre UOM, Mandya.

2. Review of literature

Oluwakemi, Towolawi. K., & Adeyemi, J. A (2010) considered the acquisition and use of library resources in the academic library of Bells University of Technology in Nigeria. On the other hand Martell, Charles (2008) opined that the use of the physical collections and services of academic libraries continues to plummet, with some exceptions, while use of electronic networked resources skyrockets. Pricilla Rani and Geetha (2007) opinioned that the electronic resources are becoming more and more available in the libraries. The print media is now being digitized, which increases the availability of books and journals in the

electronic format. Gowda and Shivalingaiah (2007) made an opinion poll, collected from the respondents and reviled that whether the electronic resources have changed their way in searching the information. Ameen and Haider (2007) aimed mainly to explore some major challenges in the area of collection management faced by university libraries in Pakistan. Lohar and Roopashree (2006) analyzed the use of electronic resources and how the electronic resources are improving the academic carrier of the faculty members of college and universities. Varalakshmi (2004) analyzed in her study about the present collection development procedures under the impact of electronic information environment.

3. Need for the study

Knowing "Users" view is necessary to evaluate the library collections, reader expectations, reading interest and to identify their information requirement. For this purpose through an user's survey one can identify the information requirements and reading interests and also can identify what actions can be taken to make effective utilization of library collections. The investigators felt that it is very necessary to conduct user study in order to have optimum utilization of available collections. The present study focuses on use of library collection by the users of Mysore University PG centre library at Mandya.

4. Objectives of the Study

The main objectives of the study are

1) To find out the use of library collection by students and faculty members.
2) To access the satisfaction level of users with present library collections and services.
3) To examine the opinions about arrangement of the library collections and the library staff co-operation in locating information from these collections.
4) To give some fruitful suggestions to improve maximum utilization of present library collections.

5. Scope and Limitations of the study

This study covers Sir. M. Vishweshwaraya Post Graduate Centre, University of Mysore, Mandya. In this center there are five departments namely Kannada, English, Economics, Polymer Science and Sugar Technology. The research has covered all students and faculty members of these departments. Further the study limits to the use of library collection and its use. The study covers only user population and does not concentrate on librarian's opinion about collection management aspects.

6. Methodology

In order to find out the use of library collection by faculty and students of Sir M. Vishweswaraya Post Graduation Centre UOM, Mandya, a survey method has been employed for the collection of the required data. A questionnaire was designed and

distributed to 200 users, out of which 144 filled in questionnaires were received back and used for analysis purpose.

7. Analysis and Discussion

Around 200 questionnaires were distributed to the users of this Post Graduate Center, out of which 144 filled in questionnaires were received back with 72 percent response rate and same were used for analysis purpose.

7.1 Gender wise distribution of respondents

Table 1 shows that out of 144 respondents, 82 (56.94%) of them are male respondents and remaining 62 (43.06%) are female respondents.

Table 1 - Gender wise distribution of respondents

Sl. No.	Gender	No. of respondents	%
1	Male	82	56.94
2	Female	62	43.06
Total		**144**	**100**

7.2 Frequency of Library visit

Figure 1 - Frequency of Library visit

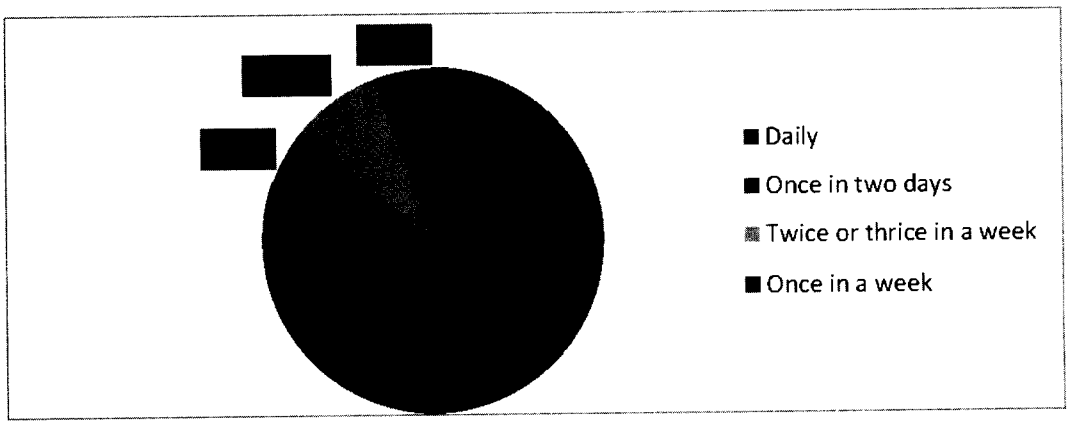


Figure 1 reveals that, out of 144 users, majority of the users i.e. 116 (80.56%) of them visit the library every day, whereas 12 (8.33%) of them visited once in a week and 8 (5.56%) of them visited library once in two days or once in a week. Thus the result shows that users are regularly visiting library to use the library collection.

7.3 Purpose of Library Visit

Table 2 shows that out of 144 respondents, maximum number of respondents 110(76.39%) visited the library for the study purpose. This is followed by 70% of the respondents who visit the library to read newspapers and to prepare notes for classes. Another 92(63.89%) of the respondents visited the library to locate information on books and journals, 62(43.06%) of them visited the library to prepare for competitive exams and

only 2(1.39%) of them visited the library to other purpose i.e. to use internet and E-journals.

Table 2 - Purpose of Library Visit

Sl. No.	Use of purpose	No. of respondents N=144	%
1	To read news papers and magazines	104	72.22
2	For Study Purpose	110	76.39
3	To Locate Information on Books and Journals	92	63.89
4	To Prepare Notes	102	70.83
5	To Prepare for competitive Exams	62	43.06
6	Any other	2	1.39

7.4 The users' opinion about the arrangement of library collection

Table 3 shows that out of 144 respondents, more than half of the respondents expressed that the arrangement of the books, journals and newspapers and magazines in the selves were good.

Table 3 - Users opinion about arrangement of library collection

Sl. No.	Users Opinion	Excellent N=144	Good N=144	Poor N=144
1	Books	18 (12.50)	96 (66.67)	22 (15.28)
2	Journals	10 (6.94)	86 (59.72)	22 (15.28)
3	Newspapers and magazines	44 (30.56)	78 (54.17)	08 (05.56)

7.5 Use of Library Catalogue

It is evident from the table 4 that most of the users i.e. 94 (65%) of them use the catalogue for finding required documents from the library, whereas 50 (35%) of them not using the catalogue.

Table 4 - Use of Library Catalogue

Sl. No.	Use of Library Catalogue	No. of respondents	Percentage
1	Yes	94	65.00
2	No	50	35.00
Total		**144**	**100**

7.6 Satisfaction with Library Collection

The table 5 shows that majority of the respondents i.e. 106 (73.61%) feel that the library collection is satisfactory for their study and remaining 38(26.39%) of them feel dissatisfied with the present library collection.

Table 5 - Satisfaction with Library Collection

Sl. No	Opinion	No. of respondents	Percentage
1	Yes	106	73.61
2	No	38	26.39
Total		**144**	**100**

7.7 Level of Satisfaction with Library Collection

Table 6 reveals the user satisfaction level with library collection. Out of 106 respondents, 42 (39.62%), 48(45.28%) and 36(33.96%) of them replied that the text book collection, subject books, reference books and journals collection is only moderately satisfying. In case of news papers and magazines, 60(56.60%) of the respondents replied that they are fully satisfied. Whereas maps, atlases, charts and electronic resources are concerned, the respondents mentioned that they are not much satisfied. From this table we can observe that still electronic resources have to be improved to a great extent.

Table 6 – Users Satisfaction Level

Sl. No.	Library Collection	Fully satisfied N=106	Moderately satisfied N=106	Satisfied to a little extent N=106
1	Text Books	40 (37.73)	42 (39.62)	8 (7.54)
2	Subject Books	40 (37.73)	48 (45.28)	6 (5.66)
3	Reference Books	34 (32.07)	36 (33.96)	6 (5.66)
4	Journals	28 (26.41)	36 (33.96)	10 (9.43)
5	News Papers and magazines	60 (56.60)	22 (20.75)	2 (1.88)
6	Maps, Atlases and Charts etc.	10 (9.43)	18 (16.98)	26 (24.52)
7	Electronic Resources	16 (15.09)	16 (15.09)	22 (20.75)

7.8 Recommendations for procurement of books and journals

The table shows that out of 144 respondents, 94 (65%) of them opine that they recommend for required books and journals to be procured to the library collection and remaining 50 (35%) replied that they had never recommended for any books and journals for the library.

Table 7 - Users recommendation to procure books and journals

Sl. No.	Opinions	No. of respondents	Percentage
1	Yes	94	65
2	No	50	35
Total		**144**	**100**

7.9 Users opinion about the library services

Table 8 shows the users opinion about different library services. Out of 144 respondents 84 (58.33%), 78(54.1%), 64 (44.44%), 58 (40.28%) and 50 (34.72%) of the respondents replied that reference, referral services, current awareness services,

newspaper clipping services and selective dissemination of information were good. Whereas book loan service, reprographic service and internet browsing facility are concerned, 52 (36.11%), 42 (29.17%) and 72 (50%) of the respective users replied that these services were poor.

Table 8 - Users opinion about library services

SL	Library Services	Excellent	Good	Poor
1	Reference service	12 (8.33)	84 (58.33)	24 (16.67)
2	Referral Service	10 (6.94)	78 (54.17)	22 (15.28)
3	News Paper Clipping Service	36 (25)	58 (40.28)	20 (13.89)
4	Selective Dissemination of Information(SDI)	2 (1.39)	50 (34.72)	36 (25)
5	Current Awareness Service	6 (4.17)	64 (44.44)	28 (19.44)
6	Library Book Loan Service	2 (1.39)	46 (31.94)	52 (36.11)
7	Reprographic Service	2 (1.39)	48 (33.33)	42 (29.17)
8	Internet browsing service	4 (2.78)	16 (11.11)	72 (50)

7.10 Users' opinion about furniture and equipments provided in the library

Table 9 shows that the users' opinion about furniture and equipment for long reading, 74% of the respondents reply that they are not comfortable and only 26% of them reply comfortable for long hours reading.

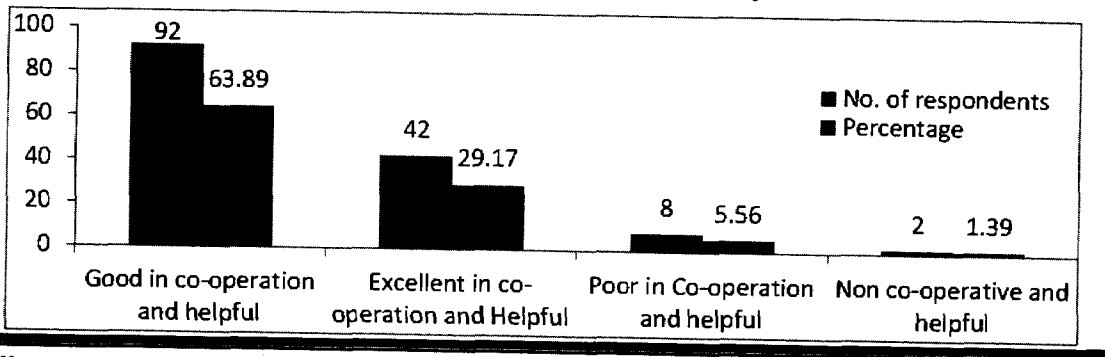
Table 9 - Opinion about furniture and equipments

Sl. No.	Furniture and Equipments	No. of respondents	Percentage
1	Comfortable	38	26
2	Not comfortable	106	74
Total		**144**	**100**

7.11 Users' opinion about the library staff

Out of 144 respondents surveyed, 92 of the them replied that the library staff is good in co-operation and helpful in finding required information, 42 of them replied of the same as excellent, 8 of them complained of poor in co-operation and only 2 of the respondents criticized of the non co-operation by the library staff in helping to find required information from the library.

Figure 2 - Opinion about the library staff



8. Major Findings of the Study

1. Almost 80 percent of the users visit library every day.
2. Out of 144 respondents, 106 (73%) of them are satisfied with library collection.
3. More than 50 percent of the respondents agree that the arrangement of the library books, journals and newspapers are good.
4. Another 50 percent of the respondents reply that Internet browsing facility is poor
5. Almost 70 percent of the users state that they require multiple copies of books related to their respective syllabus.
6. Out of 144 respondents 82 of them replied that they face difficulties in finding required information from the library collection.
7. Most of the users agree that the library staff is co-operative and helpful in finding required information from the library collection.

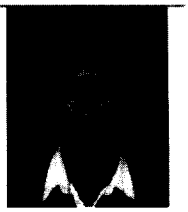
9. Conclusion

Information needs and expectations of library users are continuously changing in the age of electronic environment. Hence the librarian has to understand the users' requirement in this environment. Further on the basis of the study I suggest that the center has to improve the internet searching facilities and electronic resources collection. The library also has to furnish more furniture and other equipment for comfortable of long hours of reading.

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Effective Utilization of Electronic Information Sources by the Academics: A Comparative Study

Eralingappa G E **Kumar G T**

Abstract

This paper examines the effective use and utilization of different types of electronic information resources by academics community. The study results show 53% of respondents in Tumkur city very good awareness & 70% of respondents in Bangalore city are aware of electronic information sources. Equally good number of respondents related to Bangalore city 58% & Tumkur city 60.76% opined that they can do better research because of availability of electronic information sources.

Keywords: Electronic information sources, Academic staff, Students

1. Introduction

The 21st century, library automation and the Internet had revolutionized information access and library operations around the world. The effect of this revolution has been profound, especially on academic institutions. Libraries in such institutions can now provide information access to off-campus faculty and students wherever they are located – even to sites hundreds and thousands of miles away. To meet the ever-increasing demands from users for remote access to information, academic libraries now subscribe to electronic resources such as e-books, full-text e-journals and online bibliographic databases, in addition to housing these resources in their printed formats. While the availability of these electronic resources enables remote access to needed information, they concomitantly present issues and challenges.

2. Previous Studies

According to Cramford and Daye(2000)[1], students find CD-ROMs less user friendly with a less intuitive interface; only 18 per cent used CD ROMs and 13 per cent used online databases. Herring, Susan Davis (2002)[2], the radical changes in information seeking behaviour and use of information resources are taking place as the scholars and researchers have become more comfortable and familiar with the resources available through web. A major survey of literature was carried out by Tenopir (2003)[3]. He analysed the results of over 200 studies of the use of electronic resources in libraries published between 1995 and 2003. Key study in this field is by Bar-Ilan and Fink (2003)[4]. Mishra and others (2005)[5] conducted a research study to learn the Internet utilization patterns of undergraduate students at the G B Pant University of Agriculture and Technology, Pantnagar. Robinson (2005)[6] examined the Internet use among African-American college students. The respondents were surveyed by using the 43-item questionnaire to determine the frequency of Internet. Recent study by Asemi (2005)[7] shows that all the respondents were using the Internet frequently because all faculties were provided connection to the Internet. In the year 2005 another comprehensive study on use of internet by students and faculty of university by Biradar and Sampath Kumar [8] clearly shows that the internet is

primarily used by the users for academic purpose. Majority of users opined that the major obstacle for Internet use is the lack of Internet facility in the university environment. Razaand, M-Masoom and Upadhay (2006)[9] carried out a survey at Aligarh Muslim University to study the usage of e-journals by researchers. To know the awareness and usage of e-journals among the students and faculty a survey was conducted by Verma, Rama and Baljinder[10] in the year 2007 in four prestigious institutes of Engineering and Technology of India.

3. Objectives of the Study

- To identify the use of different types of resources for accessing/locating information by the students and faculty in college setup.
- To find out the awareness of electronic information sources and also to know the opinion about electronic information sources.
- To study the purpose of use of the electronic information sources by the students and faculty.
- To know the comparison of electronic information sources with print sources.
- To know the methods of learning to make use of electronic information sources by the academics.

4. Methodology

The present study is confined to only the students and faculty members of Engineering and Management studies in Bangalore and Tumkur city. A well-designed questionnaire was used to gather the data required for the study. Questionnaire was prepared keeping in view of objectives of the study. The questions are simple and open ended including number of options with assurance that the data collected was kept confidential and was used only for study purpose. Thus all possible efforts were made to collect free and frank opinion from the students as well as faculty. The questionnaires, which were prepared, were distributed to students and faculty. The duly filled questionnaires were used for further data analysis and the analyzed data has been presented in the form of table and graphs.

5. Data Analysis

Table-1: City-wise Distribution of Respondents

		City		
		Bangalore (n=300)	**Tumkur (n=260)**	**Total (n=560)**
Respondents		300 (100)	260 (100)	560 (100)
Gender	Male	150 (50)	163 (62.69)	313 (55.89)
	Female	150 (50)	97 (37.31)	247 (44.10)
Designation	Faculty	131(43.67)	45 (17.31)	176 (31.42)
	Students	169 (56.33)	215 (82.69)	384 (68.57)

Age	< 25	162(54)	210 (80.77)	372 (66.42)
	26 - 30	87(29)	27 (10.38)	114 (20.35)
	31 - 35	35(11.67)	10 (3.85)	45 (8.03)
	36 - 40	8(2.67)	3 (1.15)	11 (1.96)
	41 - 50	5(1.67)	6 (2.31)	11 (1.96)
	> 50	3(1)	4 (1.54)	7 (1.25)

Table 1 reveals the city-wise distribution of respondents. It shows that in Bangalore city 300 respondents & Tumkur city 260 respondents from Engineering & Management studies are considered for the study. Equal number of male & female respondents (150) is selected in Bangalore city. 163 male & 97 female respondents are selected in Tumkur city. Total 55.89% male & 44.10% female are selected. 66.42% of respondents come under the age group of below 25 years. 20.35% of respondents come under the age group of 26-30 years.68.57% of respondents are students & 31.42% of respondents are faculty members.

Table-2: Frequency of visit to the Library

City	Frequency			
	Daily	Twice a week	Fortnightly	Monthly
Bangalore (n=300)	165 (55)	100 (33.33)	22 (7.33)	13 (4.33)
Tumkur (n=260)	166 (63.85)	55 (21.15)	4 (1.53)	35 (13.46)
Total (n= 560)	331 (59.10)	155 (27.67)	26 (4.64)	48 (8.57)

Table 2 shows the frequency of visit to the library. Overall majority of respondents (59.10%) visit the library every day, and only (27.67%) of respondents visit the library twice in a week. Majority of respondents (63.85%) related to Tumkur city visit the library daily whereas (33.33%) of respondents related to Bangalore city visit the library twice in a week.

Table-3: Frequency of Visit to the Library (sex-wise)

Frequency	Sex		
	Male	Female	Total
Daily	214(68.37)	117(47.36)	331 (59.10)
Twice a week	70(22.36)	85(34.41)	155 (27.67)
Fortnightly	5(1.59)	29(11.74)	26 (4.64)
Monthly	24(7.66)	16(6.47)	48 (8.57)
Total (n=560)	313(55.89)	247(44.10)	560 (100)

Note: Number given in parenthesis represents the percentage

Table 3 shows the sex-wise frequency of visit to the library. Majority of male and female respondents 68.37% & 47.36% respectively visit the library every day, and only (1.59%) of male respondents visit the library fortnightly.

Table-4: Use of Different Information Source for Accessing Information

City		Sources					
		A	b	c	d	e	f
Bangalore (n=300)	1	152 (50.67)	57(19)	105 (25)	17 (5.67)	29 (9.67)	38 (12.67)
	2	84 (28)	121 (40.33)	108 (36)	49 (16.33)	77 (25.67)	74 (24.67)
	3	39 (13)	73 (24.33)	51 (17)	106 (53.33)	107 (35.67)	88 (29.33)
	4	25 (8.33)	49 (16.33)	36 (12)	128 (42.67)	87 (29)	100(33.33)
Tumkur (n=260)	1	176 (67.69)	94 (36.15)	128 (49.23)	21 (8.07)	47 (18.07)	42 (16.15)
	2	64 (24.62)	116 (44.62)	95 (36.54)	89 (34.23)	108 (41.54)	91 (35)
	3	16 (6.15)	43 (16.54)	31 (11.93)	130 (50)	85 (32.69)	108 (41.54)
	4	4 (1.54)	7 (2.69)	6 (2.30)	20 (7.69)	20 (7.69)	19 (7.31)
Total (n=560)	1	328 (58.57)	151 (26.96)	233 (41.60)	38 (6.78)	76 (13.57)	80 (14.28)
	2	148 (26.42)	237 (42.32)	203 (36.25)	138 (24.64)	185 (33.03)	165 (29.46)
	3	55 (9.82)	116 (20.71)	82 (14.64)	236 (42.14)	192 (34.28)	196 (35)
	4	29 (5.17)	56 (10.00)	42 (7.50)	148 (26.42)	107 (19.10)	119 (21.25)

1- To Full Extent, 2 - To Some Extent, 3 - To Little Extent, 4 - Not at all

Note: 1. *Number given in parenthesis represents the percentage*
2. Total number is more than 100 percent because multiple choice questions
3. a - Print Sources, b- Electronic Resources (CD's, DVD's), c- Online resources (e-journals /Databases / e-books), d – Microforms, e - Audio visual materials, f- Electronic theses & Dissertations

It is evident from the table 4 that to full extent majority of respondents (58.57%) used print sources, and to some extent the respondents used micro forms (42.14%) & audio visuals materials (34.28%). Only 21.25% of respondents not at all used electronic theses & dissertations. Study also shows city-wise use of different sources and it is evident from the table that to full extent (67.69%) of Tumkur city respondents & 50.67% of Bangalore city respondents used the print sources.

Table-5: Purpose of Use of Information Sources

City	Purpose					
	a	b	c	d	e	f
Bangalore (n=300)	177 (39)	210 (70)	58 (19.33)	99 (33)	71 (23.67)	51 (17)
Tumkur (n=260)	44 (16.93)	211 (81.15)	34 (13.07)	89 (34.23)	73 (28.07)	46 (17.69)
Total (n= 560)	221 (39.46)	421 (75.17)	92 (16.42)	188 (33.57)	144 (25.71)	97 (17.32)

Note: 1. *Number given in parenthesis represents the percentage*
2. Total number is more than 100 percent because multiple choice questions
3. a – Teaching, b- Study, c- Research, d- Project work, e-Paper presentation, f- Course work

Table 5 shows that 75.17% of respondents used the sources for study purpose, & 39.46% of respondents used the sources for teaching purpose. Only 33% of respondents & 34.23% of respondents used the sources for project work in Bangalore & Tumkur city respectively.

Table-6: Awareness of Electronic Information Sources

City	Awareness		
	Very Good	Good	Poor
Bangalore (n=300)	62(20.67)	210(70)	28(9.33)
Tumkur (n=260)	138 (53.07)	117 (45)	5 (1.92)
Total (n= 560)	200 (35.71)	327 (58.39)	33 (5.89)

Note: Number given in parenthesis represents the percentage

Table 6 reveals that awareness of electronic information sources. It is clear from the table that 58.39% of respondents are aware of electronic sources of information. Only 5.89% of respondents are not aware of electronic information sources. 53% of respondents in Tumkur city very good awareness & 70% of respondents in Bangalore city are aware of electronic information sources.

Table- 7: Opinion about Electronic Information Sources

City		Opinion					
		A	b	c	d	e	f
Bangalore (n=300)	1	110 (36.67)	67 (22.33)	18 (6)	15 (5)	62 (20.67)	45 (15)
	2	174 (58)	171 (57)	94 (31.33)	100 (33.33)	194 (64.67)	211 (70.33)
	3	10 (3.33)	52 (17.33)	165 (55)	14 (47)	33 (11)	32 (10.67)
	4	6(2)	10(3.33)	23(7.67)	44(14.67)	11(3.67)	12(4)

Tumkur (n=260)	1	97 (37.30)	81 (31.15)	51 (19.61)	62 (23.85)	64 (24.61)	66 (25.38)
	2	158 (60.76)	168 (30)	156 (27.85)	128 (23.03)	184 (32.85)	181 (69.61)
	3	3 (1.15)	8 (3.07)	48 (18.45)	52 (20)	9 (3.46)	9 (3.46)
	4	2 (0.77)	3 (1.15)	5 (1.92)	17 (6.54)	3 (1.15)	4 (1.54)
Total (n=560)	1	207 (36.96)	148 (26.42)	69 (12.32)	77 (13.75)	126 (22.5)	111 (19.82)
	2	332 (59.28)	339 (60.53)	250 (44.64)	229 (40.89)	378 (67.5)	392 (70)
	3	13 (2.32)	60 (10.71)	213 (38.03)	66 (11.78)	42 (7.5)	41 (7.42)
	4	8 (1.42)	13 (2.32)	28 (5.00)	61 (10.89)	14 (2.5)	16 (2.85)

Note: Number given in parenthesis represents the percentage

1-Strongly Agree, 2- Agree, 3- Disagree, 4- Strongly Disagree

a. I can now do better research because of availability of electronic information resources
b. Some of the research information in need is now only available online
c. It is more difficult to find needed Information while using online resources
d. I have to rely on others more when searching electronic information resources
e. I would still prefer access to print as well as electronic information resources
f. More comprehensive information is available

The opinion of respondents about electronic information sources. It is evident from table 7 that, (70%) of respondents opined that electronic information sources provides more comprehensive information followed by they prefer still access to print as well as electronic information sources (67.5%), 59.78% of respondents agreed that they can now do better research because of availability of electronic information sources & 60.53% of respondents opined that some of the research information in need now only available online. Equally good number of respondents related to Bangalore city 58% & Tumkur city 60.76% opined that they can do better research because of availability of electronic information sources.

Table-8: Comparison of Electronic Information Sources with Print Sources

City		Most Easier	Slightly Easier	Slightly Difficult	Most Difficult	Not Responded
Bangalore (n=300)	1	149(49.67)	116(38.67)	32(10.67)	3(1)	0
	2	127(42.33)	148(49.33)	24(8)	2(0.67)	1(0.33)
	3	134(44.67)	128(42.67)	35(11.67)	2(0.67)	1(0.33)

Tumkur (n=260)	1	126 (48.46)	103(39.62)	18 (6.92)	9 (3.46)	4 (1.54)
	2	115 (44.23)	103(39.62)	24 (9.23)	15(5.77)	3 (1.15)
	3	120 (46.15)	97 (37.31)	24 (9.23)	15(5.77)	4 (1.54)
Total (n=560)	1	275 (49.10)	219(39.10)	50 (8.92)	12(2.14)	4 (0.71)
	2	242 (43.21)	251(44.82)	48 (8.57)	17(3.03)	4 (0.17)
	3	254 (45.35)	225(40.17)	59 (10.53)	17(3.03)	5 (0.89)

Note: Number given in parenthesis represents the percentage

1- Information locating and identifying is,
2- Accessing Information is, 3- Using Information is

Table - 8 describes the comparison of electronic information sources with print sources. It is clear from the table that 49.10% of respondents opined information locating is easier while 44.82% of respondents opined that accessing information in electronic format is slightly easier. In case of Bangalore city 49.67% of respondents 48.46% of Tumkur city respondents opined that information locating & identifying is easier.

Table-9: Methods of learning to make use of Electronic Information Sources

Skills	Bangalore (n=300)	Tumkur (n=260)	Total (n=300)
Guidance from library staff	74(24.67)	63 (24.23)	137 (24.46)
Guidance from teachers	82(27.33)	64 (24.62)	146 (26.07)
By the advice of friends	150(50)	94 (36.15)	244 (43.57)
By trial and error	161(53.67)	115 (44.23)	276 (49.28)
By attending courses / Training offered by the college	35(11.67)	30 (11.54)	65 (11.06)

Note: 1. Number given in parenthesis represents the percentage

2. Total number is more than 100 percent because multiple choice questions

Respondents were asked to indicate the skills used for making use of electronic information sources. The data is presented in the table-9 and it is evident from table that 49.28% of respondents learnt by trail & error method and 43.57% of respondents learnt by the advice of friends. Methods of learning to make use of electronic information sources are varied from subject to subject. In case of Bangalore city 53.67% & Tumkur city 44.23% of respondents learnt by trail & error method.

6. Suggestions

Some of the suggestions are as follows

- From the present study it is found that the majority of respondents used information sources for their academic (Teaching, Study and Project) work. It is necessary to enhance the facilities and also create awareness among users about information sources and services offered in the libraries.

- It is observed from the study that good numbers of respondents are aware of electronic information sources. Opinion about the electronic information sources also clearly shows that, the users are more relay on the electronic information sources. In this regard library initiative to create awareness about the electronic information sources and library should acquire more number of electronic information sources, which are very much useful to the users.
- Regarding the comparison between the electronic information sources and print sources the majority of users opined that the electronic information sources are easier to locate and access information as compared to print sources. So equal priority should be given to acquire both sources.
- Most of the respondents learnt about the electronic information sources from their friends or by trail and error method. So library should conduct some orientation programmers to the users to create awareness about the electronic information sources.

7. Conclusion

Access to electronic information sources particularly the Internet and e-journals have already influenced and changed the way that the students and faculty used it to retrieve and disseminate information for their academic work. Electronic information sources attacking reader's attention in today's networked environment. Among these e-journals, Internet, CD-ROM databases open up many exciting opportunities and potentials for librarians. Libraries may have to face the duel problems of increasing costs and the desired to utilize the new and ever changing technologies. In this regards the librarian should be aware of the advantages and disadvantages of electronic sources of information and they should identify and balance facts that would make electronic sources of information a success in their libraries.

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E-learning 2.0 and Promotion of Reading: An Evaluation of the Library Community in Edublogs

Dineshan Koovakkai

Abstract

E-learning 2.0 which supports asynchronous social learning is the offshoot of computer supported collaborative learning. Blogs form a very important Web 2.0 tool in e-learning 2.0 environments. Edublogs is a platform for the blogging community especially in the academic field for interactive learning. The library community in Edublogs provides various library services including promotion of reading through interaction. There are several library blogs in Edublogs which promote reading of children through their posting in the blogs and providing space for comments and interaction. The present paper is an evaluation of Edublogs with an aim to disclose their role in the promotion of reading.

Keywords: E-learning, E-learning 2.0, Edublogs, Library Community Promotion of reading

1. Introduction

E-learning is essentially computer and web based learning which is variously named as computer-based learning, web-based learning, virtual learning, Internet based learning etc. The content delivered can be self-paced or instructor-led and includes media in the form of text, image, animation, streaming video and audio **[1]**. The traditional Cartesian view of knowledge and learning which assumes that knowledge is a kind of substance and that pedagogy concerns the best way to transfer this substance from teachers to students is now being substituted by the social view of learning which focuses on the learning activities and human interactions around which the content is situated. This perspective also helps to explain the effectiveness of study groups. Students in these groups can ask questions to clarify areas of uncertainty or confusion, can improve their grasp of the material by hearing the answers to questions from fellow students **[2]**.

2. Edublogs

A blog typically provides the possibility for comments and trackbacks, links back from other sites and forms part of the blogosphere by way of distributed, collective and interlinked blogs. Blogs are a personal form of publishing content. As far as the educational benefit is concerned a number of possible uses such as promoting critical and analytical thinking, promoting creative, intuitive and associational thinking, promoting analogical thinking, providing potential for increased access and giving exposure to quality information, and to have combination of solitary and social interaction **[3]**.

They provide three types of blogging services as:

- *Edublogs Free –Entirely free with basic options*
- *Edublogs Pro- A blog package for individual teachers-Payment required*

- *Edublogs Campus- Designed for institutions, manage and control as many blogs as they need - from a single class to 10,000+ blogs-Payments required.*

It is easy even for a school student to create a blog on Edublogs platform. Like other blog platforms, Edublogs also provides custom templates to make the task of blogging easier. The home page of Edublogs is shown in Figure 1.

Edublogs are used mainly for group projects, ePortfolios, school newspapers, reflection journals, class websites etc. The most important uses of Edublogs include:

- To share materials, news, downloads and links
- For online discussions and collaboration
- To create a class publication that students can easily publish to and teachers can easily edit
- To stay in touch with parents about what is going on in class
- To share the work and thoughts of the students
- To Share lesson plans
- To integrate videos, podcasts, and other media
- To create blogs for clubs, student groups, events, sports teams, or just about any type of group
- To create a fully functional website

3. Edublogs Communities

The blogs in the Edublogs platform are categorized into the following as per the Edublogs blog directory [6].

- Professional/Personal Blog
- Elementary/Primary Blog
- English/Language Arts
- Foreign Languages
- History/Social Studies
- Mathematics/Sciences
- English as Second Language
- Technology Education
- Art, Music and Theater
- Library Blog
- School News Blog
- Vocational Education and Training
- Student Blog
- Miscellaneous

The blog owners can include their blogs in any of the above communities according their preference.

4. Library Community in Edublogs

Under the community 'Library Blog' there is 109 blogs created from different counties. The country wise details are given in Table 1.

Table 1: Country wise Details of Library Community Blogs in 'Edublogs'

Country	No. of Blogs	%
Australia	21	19.27
Canada	6	5.50
China	2	1.83
Denmark	1	0.92
India	4	3.67
New Zealand	1	0.92
Phillippines	3	2.75
Romania	1	0.92
Russia	1	0.92
Samoa	1	0.92
Spain	4	3.67
Tanzania	1	0.92
UK	5	4.58
US	58	53.21
Total	**109**	**100.00**

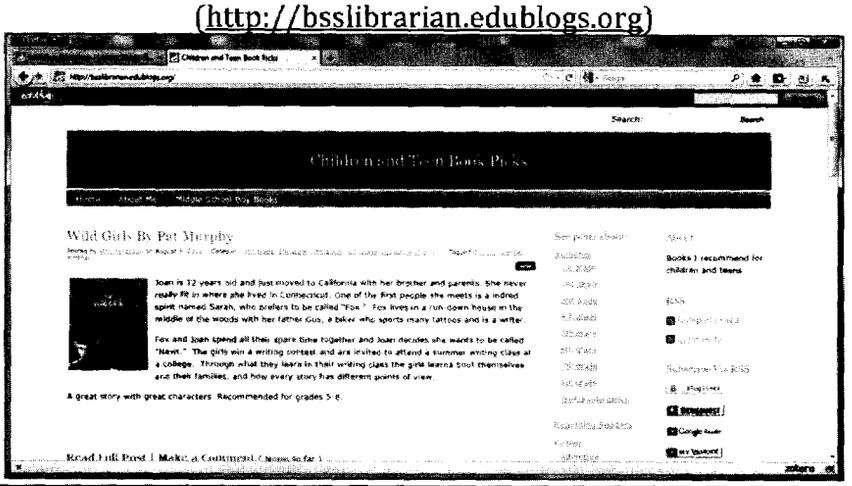
5. Promotion of Reading through Edublogs

The blogs in the Library Blog community in Edublogs utilize the possibilities of e-learning to communicate with the students and for making the blogs a discussion forum. Many of the blogs in this community promote reading by introducing a book to the students and leaving space for comments. The following are a few among them.

5.1 Children and Teen Book Picks

This is a blog created by Ms. Kerry Ferguson **[7]**, Librarian at Blessed Sacrament School, a PreK-8th grade Catholic school in the US for promoting reading among students of Grade 1 to 8. Figure 1 shows the screen shot of the blog which introduces a book (Wild Girls by Pat Murphy) recommended for students of Grade 5 to 8.

Figure 1: The Blog created by the Librarian at Blessed Sacrament School (http://bsslibrarian.edublogs.org)

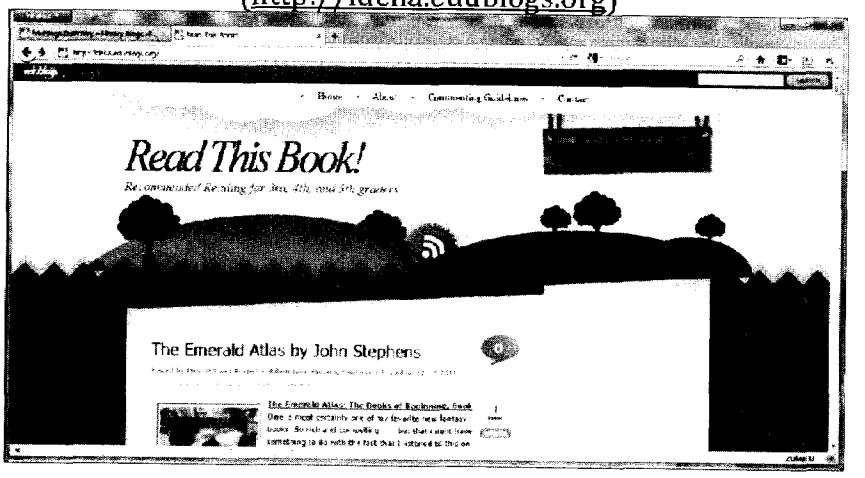


The posting gives a gist of the story of the book and recommends for reading. It also provides space for leaving comments.

5.2 Read This Book

This blog owner is Mrs. D'Elia a teacher-librarian in an elementary school in the US **[8]**. Through this blog she shares the book she has read with the students. The blog also provides video to make reading more interesting. Figure 2 shows the home page of the blog with an introduction to a book she wishes to share with the students.

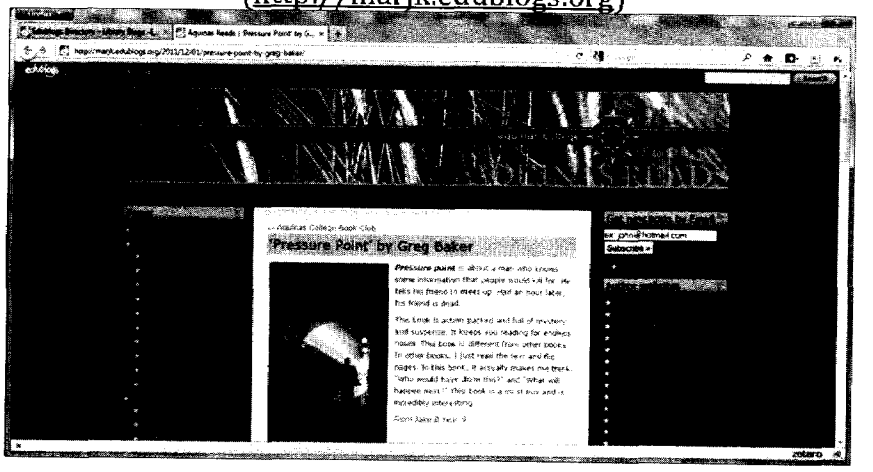
Figure 2: Home Page of the Blog 'Read this Book'
(http://ldelia.edublogs.org)



5.3 Aquinas Reads

This is the blog maintained by Aquinas College Library Book Club, Australia. It is a place to discuss books the members are reading together, books they have read from the library, and books they should get for the library. This is a private group and members must be invited or approved by the group's moderator to join the discussion forum **[9]**. Figure 3 shows the home page of the blog maintained by Aquinas College Library Book Club, Australia.

Figure 3: Aquinas College Library Book Club Blog
(http://marjk.edublogs.org)



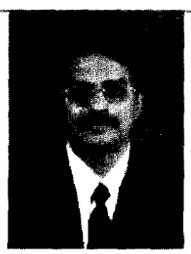
These only a few examples of the blogs maintained by the library community to promote reading by the application of the latest technology in information sharing. It shows how keen and fast the librarians are in adopting technology to enhance library use.

6 Conclusion

The catch word in modern information society is '2.0' and every human activity through electronic media is becoming interactive and user centred applying the concept of 2.0 in all their activities. Learning 2.0 breaks the conventional teacher student relationship in which the teacher is more important. In learning 2.0 especially e-learning 2.0 it is the content which is more important and students get more opportunity to interact with fellow students and teachers. The benefits of interaction and social learning are well utilized by the librarians to go to the learners and to provide them opportunity to read more and learn more through more interaction.

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E- Learning of PG and PhD Students of Colleges of Veterinary and Animal Sciences of Kerala

Ambili K S **Gokul Adarsh N**

Abstract

E-learning has provided a new platform for education and research. It is a gate way to new vistas of information at any time without geographical barriers. The paper defines E-learning, points the merits and limitations of e-learning. Summarizes the study conducted among postgraduate and PhD students of Veterinary and Animal Sciences colleges to find out their e-learning habits, types of resources used, their satisfaction in e-learning, difficulties faced by them in its exploitation and suggestions for improvement of e-learning.

Keywords: E-learning, E- resources, User study, KVASU, Jyothi Engineering College

1. Introducation

E-learning has provided a new platform for education and research. It is a gate way to new vistas of information at any time without geographical barriers. E-learning takes many forms, and common instantiations in e-learning delivery and approaches include flexible learning, technology supports for learning any time, anywhere; blended learning, varying mixes of technology with conventional learning usually in conventional settings; and online learning, where technology provides the means for the implementation and delivery of learning programmes totally distinct from face-to-face teaching[1]. E-learning has brought out rapid change in higher education institutions. The impact of e-learning on the teaching and learning process is uneven and has to be evaluated for better prospects.

2. Objectives of the study

1. To examine the level of e- learning among P.G and PhD students.
2. To analyze the satisfaction among the students while utilizing e-resources.
3. To find out the problems if any faced by the students in e-learning and to suggest ways and means for improvement.

3. Hypothesis

- The existing infrastructure facilities provided by KVASU Library and Information System are not fully adequate to meet the E-learning of PG and PhD students.
- The existing E-publications provided by KVASU Library and Information System could not be fully utilized due to inadequacy of professional library staff and sufficient working hours of library beyond teaching hours.

4. Methodology

The methodologies used for collecting data are Questionnaire and Interview. A properly designed questionnaire is capable of yielding valuable and highly revealing data and hence 2/3rd of each group ie Research Scholars and PG Students was selected randomly

using simple random sampling. A well structured questionnaire was distributed to them who were familiar with computer and the Internet facilities and collected for analysis. Selected students were interviewed to corroborate information revealed through questionnaires and to ascertain the problems hampering e-learning and to suggest ways and means for improvement.

5. Significance of the Study

To the extend of the knowledge of the investigator only few studies have been undertaken so far to examine the use, acceptance and impact of E-publications in research and educational activities and to find out the level of satisfaction while using it and to know the problems faced by users. Veterinary and Animal Sciences libraries being the nerve centre of all educational, research, training and extension activities, it has to render maximum service to the policy makers, specialists, scientists, teachers, students, researchers, and farmers at minimum cost. It has VetCD from 1973-to Aug 2008 and good collection of E-thesis and Books. The Veterinary colleges of Kerala have access to Consortium for e-Resources in Agriculture (CeRA). It is an e-Consortium of Agricultural Libraries under the Indian Council of Agricultural Research (ICAR) for National Agricultural Research System libraries. To maximize discipline-wise coverage, relevance of journals to users, number of users relevant to publishers, economics of pricing models given by publishers for using additional advantages like unlimited access, unlimited downloads, easy accessibility, anywhere at any time accessibility, full-text downloads, etc., made the authorities of ICAR to think about formation of e-Consortium under the Project of NAIP.[4] CeRA was launched successfully on 30 April 2008 at its headquarters at IARI and now provides access to 2894 journals and other e-resources. This study will be helpful in assessing the present needs of users while using E-publications and suggest the ways and means for improvement and to suggest additional facilities to be provided.

6. Limitations of the study

The main purpose of the study was to get a clear picture of the use acceptance, effectiveness and impact of E-Learning of Research Scholars and PG Students. The study was limited only to Research Scholars and PG Students of two Veterinary Colleges of Kerala due to time limit and financial constraints.

7. Analyses and results

7.1 Use E-Learning

The respondents were asked to indicate whether they are used with E-Learning facility and if so to indicate the frequency. All the respondents are used with E-Learning facility.

Table1: Familiarity with E-Learning facility

Opinion	Category of Students		
	PhD Scholars	PG Students	Total
Yes	20(100)	57(100)	77(100)
No	0(0.00)	0(0.00)	0(0.00)
Total respondents	20(100)	57(100)	77(100)

Table 2: Frequency of E-Learning

Frequency	Category of Students		
	PhD Scholars	PG Students	Total
Daily	0(0.00)	2(3.51)	2(2.59)
2 to 3 days in a week	4(20.00)	5(8.77)	9(11.69)
Once in a week	10(50.00)	12(21.05)	22(28.57)
Twice a week	6(30.00)	32(56.14)	38(49.35)
As and when required	0(0.00)	6(10.53)6	7(7.80)
Total respondents	20(100)	57(100)	77(100)

In order to assess the frequency of e-learning, the time gap has been classified into five different categories. It has been found that 2.59% PG students utilize e-learning facility daily while 20.00 per cent, 50.00 per cent PhD scholars and 8.77% and 21.0577% PG students avail it 2 to 3 days in a week and once in a week respectively. About 50% respondents engage in e-learning twice a week while7.80% avail it as and when required.

7.2 Preferred Place for accessing E-Resources

Out of 77 respondents 96.10% access E-Resources from College while 23.38% access it from home and 3.51 from Café. Cent percent PhD Scholars use the facility from College and 19.48% access E-Resources both from college and home.

Access to Internet and e-journal consortium facility in all departments may be the main reason for high utilization of e-learning.

Table 3: Preferred Place for accessing E-Resources

Opinion	Category of Students		
	PhD Scholars	PG Students	Total
Home	8(40)	10(17.54)	18(23.38)
College	20(100.00)	54(94.74)	74(96.10)
Cafe	0(0.00)	2(3.51)	2(3.51)
Total respondents	20(100)	57(100)	77(100)

7.3 Criteria for preference of e-learning

Table 4: Criteria for preference of e-learning

Criteria	Category of Students		
	PhD Scholars	PG Students	Total
Time saving	15(75)	41(71.93)	56(72.73)
Availability of Current Information	10(50.00)	38(66.67)	48(62.34)
Less Expensive	0(0.00)	0(0.00)	0(0.00)
Exhaustive Information	14(70)	43(75.44)	57(74.03)
Total respondents	20(100)	57(100)	77(100)

Exhaustive Information availability was ranked as most important Criteria with top priority for preference of e-learning with 74.03%. Time saving and availability of current information were ranked as second and third with 72.73% and 62.34% respectively. None of the respondent favored less expensive criteria. This may be because of the fact that they are receiving e-resources in colleges free of cost.

7.4 Preference of E-learning Platforms

Table 5 Preference of E-learning Platform

Opinion	Category of Students		
	PhD Scholars	PG Students	Total
Blog	7(35.00)	18(31.58)	25(.32.47)
Wikis	4(20.00)	21(36.84)	25(32.47)
E-mail	5(25.00)	9(15.78)	14(18.18)
Messenger	2(10.00)	5(8.77)	7(9.09)
Web forum	4(20.00)	12(21.05)	13(16.88)

Wikis and Blog are most used platforms and they are being used by 32.47 percent each respondent while E-mail and Web forum occupies third and forth position with 18.18 percent and 16.88 percent respectively.

7.5 Use of Search Engine

Table 6: Use of Search Engine

Preferred search engine	Category of Students		
	PhD Scholars	PG Students	Total
Google	14(70.00)	44(77.19)	58 (75.32)
Yahoo	9(45.00)	23(40.35)	32(41.56)
Ask.Com	5(25.00)	21(36.84)	26(33.77)
AllTheWeb	4(20.00)	5(8.77.00)	9(11.69)
AltaVista	2(10.00)	2(3.51)	4(5.19)
Any Other-Lycos	1(5.00)	00.00	1(6.49)
Total respondents	**20(100)**	**57(100)**	**77(100)**

The findings reveal that Google occupies the top most position (75.32%) followed by Yahoo (41.56%). While 45 (58.44%) respondents use both Google and Yahoo, 12 (15.58%) respondents use Google and Yahoo and Ask.Com simultaneously. AltaVista and Lycos are used by only by 5.19% and 6.49% respondents respectively.

7.6 Preference of use of E-publications

Table7: Preference of use of E-publications

Preference of use of E - publications	Category of Students		
	PhD Scholars	PG Students	Total
E-books	17(85.00)	40(70.18)	57(74.30)
E- journals	20(100.00)	57(100.00.)	77(100.00)
E-Thesis	9(45.00)	35(61.41)	40(51.95)

E- Conference Proceedings	11(55.00)	25(43.86)	36(46.75)
E-Technical Reports	2(10.00)	3(5.26)	5(3.85)
E-Newspaper	12(60.00)	34(59.65)	46(59.74)
Other (Specify)-Vet CD	8(40.00)	21(36.82)	23(29.87)
Total respondents	**20(100)**	**57(100)**	**77(100)**

All the students use E-journals as the colleges have access to latest journals through CeRA E-consortium. E-books rank second in its use with 74.30% and E-News papers in the third position with 59.74%. E-Theses are used by 51.95 and E-conference proceedings are used by 46.75%. Vet CD is used only by 29.87% respondents. The low percent of use of Vet CD may be because of the dropping of its current subscription. Availability of E- publications is a major criterion for high percent of utilization.

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7.7 Level of Information Satisfaction through E-learning

Another question was asked to ascertain the level of information satisfied through E-learning. It has been found that 10.00 per cent Ph.D scholars and 8.77% PG students are fully satisfied with the facilities provided while 90.00% Ph.D scholars and 91.23% PG students are only partially satisfied.

Table 8: Level of Information Satisfaction through E-learning

Opinion of Level of Information Satisfaction	Category of Students		
	PhD Scholars	PG Students	Total
Fully	2(10.00)	5(8.77)	7(9.09)
partially	18(90.00)	52(91.23)	70(90.91)
Least satisfied	0(0.00)	0(0.00)	0(0.00)
Total respondents	20(100)	57(100)	77(100)

7.8 Problems of e-learning

Table 9: Problems of e-learning

Opinion	Category of Students		
	PhD Scholars	PG Students	Total
Lack of required Data base	9(45.00)	46(80.70)	55(71.43)
Unawareness to use	0(0.00)	0(0.00)	0(0.00)
Difficulty in finding relevant information	0(0.00)	4(70.02)	4(5.19)
Slow accessibility	15(75.00)	43(75.44)	58(75.32)
Total respondents	**20(100)**	**57(100)**	**77(100)**

Slow accessibility was showed as the major problem by 75.32 percent respondents and lack of required Data base was indicated by 71.43 percent.

8. Major Findings

- All the postgraduate students are engaged e-learning and about 50 per cent respondents engage in e-learning twice a week.
- As Internet and e-journal consortium facility are available in all departments students make use of this facility to a great extent in general and Cent percent PhD Scholars use the facility from College. Among the respondents 96.10 cent percent access E-Resources from College.
- Wikis and Blog ware ranked as first, the most used platforms for academic purpose and they are being used by 32.47 percent each respondent while E-mail and Web forum occupies third and forth position with 18.18 percent and 16.88 percent respectively.
- The findings reveal that most favored search engine Google occupies the top most position (75.32 per cent) followed by Yahoo (41.56per cent). While 45 (58.44 per cent) respondents use both Google and Yahoo, 12 (15.58 per cent) respondents use Google and Yahoo and Ask.Com simultaneously
- All the students use E-journals as the colleges have access to latest journals through CeRA E-consortium. E-books rank second in its use with 74.30 percent and E-News papers in the third position with 59.74 percent. E-Theses are used by 51.95 and E-conference proceedings are used by 46.75 percent. Vet CD is used only by 29.87 percent respondents. The low percent of use of Vet CD may be because of the dropping of its current subscription. Availability of E- publications is a major criterion for high percent of utilization.
- Exhaustive Information availability was ranked as most important Criteria with top priority for preference of e-learning with 74.03 percent. Time saving and availability of current information were ranked as second and third preference with72.73 percent and 62.34 percent respectively. None of the respondent favored less expensive criteria and this may be because of the fact that they are receiving it free of cost from departments and library
- It has been found that only 10.00 per cent PhD scholars and 8.77per cent PG students are fully satisfied with the facilities provided while 90.00 per cent PhD scholars and 91.23 per cent PG students are partially satisfied. This point towards the need for additional facilities.
- Slow accessibility was showed as the major hindrance to e-learning by 75.32 percent respondents and lack of required Data base was indicated by 71.43 percent.

9. Recommendations

- A library web site which provides easy navigation has to be created.
- The home page of the library should have links to database, electronic reserve readings, bibliographies, reference guides, and contact information etc.

- On-line interactive information literacy modules have to be created to encourage the students in e-learning. A cooperative learning technology team with the librarian, teachers, scholars, information technologists, and Extension and instructional developers etc has to be developed.
- Virtual classes for teaching and learning has to be designed.
- A collection of videos in the library has to be created through the open sources on various fields of subjects for the e-learning teaching purpose.
- Veterinary Science database of CABI formerly VetCD has to be continued.
- Facilities of CeRA has to be improved by including more society/ institutional peer reviewed journals as well as more Indian Journals, taking necessary strong steps to get the photocopies of articles at least within two days of request and providing archival facility of journals from the date of publication of the journal or at least for last 15 years.
- Library working hours has to be extended to twelve hours a day and more number of computers have to be provided.
- Well trained efficient professional staff has to be appointed in two colleges with Life Science background for expert advice and training of users as per UGC / ICAR norms to improve the use of e-learning.

10. Conclusion

E-learning enable the capturing of recent information, creation of new knowledge, its distribution and future application through a variety of online delivery mechanisms. Regardless of high level of awareness in e-learning, it has many constraints and limitations. The results of the study clearly substantiate the validity of hypotheses formulated in the study. The fundamental hindrances to the growth of e-learning are slow access and lack of sufficient necessary technology infrastructure. The infrastructure support and its maintenance, and appropriate training of staff have to be taken care of to enable e-learners to get maximum benefit of technology.

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Institutional Repository (IR): Need for Knowledge Preservation and Resource Sharing

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Dahibhate Nandkumar B

Abstract

Institutional Repository is an emerging practice in the ICT era to preserve institutional intellectual property. It is a substitute for digital libraries in which material is captured and preserved at institutional and organizational level in digital form for use. This paper covers the basics of IR and its proper development. An overview of few efforts at global level is also discussed in this paper.

Keywords: IR, Resource sharing, Information preservation, Open source software's

1. Introduction

Institutional Repository is an electronic archive of the scientific and scholarly outputs of an institution; the data is stored in a searchable digital format and also retrieved for later use internally, nationally, and worldwide. A Repository supports mechanisms to import, identify, store, preserve, retrieve, and export an institution's digital assets, usually in the form of web pages. It is a type of content management system that holds the core intellectual assets of a university or college, and enables them to be used in a flexible way to support a variety of business processes. These intellectual assets include research and scholarly outputs, such as journal articles and theses, but may also include teaching and learning materials, presentations, research datasets, audiovisual records, and e-learning objects. (www.ugr.es/~afporcel/guidelines.doc)

2. Factors supporting for developing IR

Rajashekar (2010) pointed out that due to availability of digital publishing tools and technologies, internet usage and need for fast scholarly information communication and preservation, IR emerged as a solution for digital library for meeting the requirement. Apart from this following issues are supportive to IR initiation

- Development of integrated library systems, use of metadata standards for digital objects
- Development of Web and portal environment
- Number of IR demonstration projects developing globally
- Availability of free software's to build IR
- To protect IPR and share resources

PALS (2004) report stated that universities and research libraries around the world use institutional repository in the following ways:

- Scholarly communication, storing learning materials and courseware's
- Electronic publishing and preserving digital materials for the long term
- Adding to the university's prestige by showcasing its academic research

- ❖ Knowledge management and research assessment
- ❖ Encouraging open access to scholarly research

Each university has a unique culture and assets that require a customized approach. The information model that best suits to institution would not fit to another campus.

3. Contents in IR

The repository consists of:

- ❖ Published material like e-books, e-Journal articles, chapters from books, newspaper articles, conference papers (preprint from) in digital form
- ❖ Unpublished materials like rare documents, manuscripts, theses, reports, manuals, guides presentations, speeches of guests and subject experts, photographs, project reports, standards, patents, internal circulated documents, workshop, conference material, proceedings
- ❖ Any digital assets developed in institute in grey form like data sets, models and simulations
- ❖ Audio, Video files, films and images of distinguished staffs, visitors, monuments and buildings
- ❖ Conferment of Honorary degrees, working papers, conference proceedings, Preprint articles, workshop materials
- ❖ Institutional publications like magazines, annual reports, newsletters, notices, circulars
- ❖ Television broadcasts, interviews, tutorials, etc.

Rajashekar (2010) indicated that the content is in digital form might be born or digitized and in different file formats developed by members of the institutions. The nature of access to these content is either free or registration based or membership based to anyone.

4. Tools for IR development

Basically the hardware technology is made available by the institutions which has the configuration, computer workstation with one data server of capacity 2.8-3.5 GHz (Quad core) RAM = 8 to 16 GB, HDD = 1TB to 2 TB. Other equipments like scanners, digital and movie cameras, UPS, printers, CD drives or tape drives etc. with Operating System Linux (Red Hat) RHEL 4/5. But availability of free open software's for development of IR, helped institutes to develop IR. Among many any of the following is preferred and commonly used for creation of IR.

- ❖ E-prints (University of Southampton, UK)http://software.eprints.org
- ❖ D-space (MIT + HP USA) http://www.dspace.org
- ❖ Fedora (Cornell University and Virginia university USA) www.fedora.info
- ❖ i-tor (Netherland Institute fro scientific information services) www.i-tor.org
- ❖ Green Stone (New Zealand digital library project Uni. of Waikato) www.greenstone.org
- ❖ Digital Commons http://www.bepress.com/ir/

- ❖ CDSware (CERN document server software, Geneva Switzerland) http://cdsware.cern.ch.

Out of these Eprints, fedora, Greenstone, D-space are very popularly used. Apart from above software's following freely available software's also useful while developing IR

- ❖ OCR software
- ❖ Scanning software
- ❖ Adobe acrobat reader
- ❖ CD read/write software
- ❖ PageMaker, paint brush
- ❖ Digital library software (D space, Green stone, Fedora-print etc.)
- ❖ Windows-NT networking software, SQL server software, Database management software.
- ❖ Web designing software like JAVA, Front page, XML etc.
- ❖ RDBMS supporting the variety of digital database like ORACLE, My SQL etc.
- ❖ Full text search engine to index and provide access

The approximate initial cost required for the initiation of this activity varies form institute to institute but minimum Rs 3-4 Lack at the initial level is required to develop the IT platform required for the IR. The process of development also includes: material Selection and submission, development of metadata (Fix the elements), Access control, information discovery support (Index building), distribution of the information and preservation

5. IR and Librarians role

Jain et al (2009) is of the opinion that activity and responsibilities relating to IRs are assumed by different people in various institutions. But this activity could be undertaken collaboratively by officers within the library in partnership with research and development, and information technology sections... Nixon (2002) also rightly observed that "Reference librarians are a library's eyes and ears. They understand user's needs and perceptions. They are the library's primary liaison with faculty in their subject areas and its most visible representatives. For an IR to succeed, it is essential that they be involved in its planning, implementation, and operation." So librarians have critical roles to play in both establishing and maintaining an IR like

Advocacy: Librarians need to know all about the IR, its principles, benefits and operational processes in order to promote it and act as 'IR evangelists'.

Building content: Librarians can employ advocacy and marketing strategies to promote engagement with faculty members and help to generate content. They assist by proactively searching for content independently.

Collection administrators and metadata specialists: Librarians have potential roles as collection administrators and metadata specialists. For effective implementation of IR, libraries will need to recruit or train librarians with digital collection management and provide a mediated deposit service for reluctant 'self-archives'.

Training: Librarians able to train staff and students to use the IR and help them to prepare their digital products.

6. Global review of IR

Rajashekar (2010) reviewed the development worldwide and pointed out that several universalities and research organizations from developed countries have set up IRs. Few of them are listed below

- Australian National University (http://eprints.anu.edu.au)
- CERN Scientific Information Service (http://cds.cern.ch)
- University of Glasgow (http://eprints.lib.gla.ac.uk)
- MIT (http://hpds1.mit.edu/index.jsp)
- University Nottingham (http://eprints.nottingham.ac.uk)

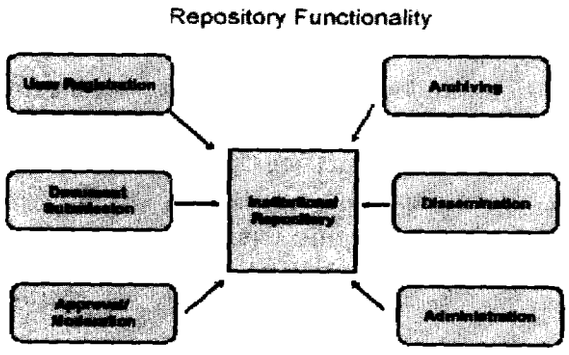
7. Indian Efforts

In India efforts are made towards this direction and many universities, research organizations like CSIR, institutes are developing IRs.

- IIT Mumbai (http://dspace.library.iitb.ac.in)
- NIO Goa (http://drs.nio.org)
- NCL Pune (http://dsapce.ncl.res.in)
- INFLIBNET (http://www.inflibnet.ac.in/gsdl)
- IISc Bangalore (http://eprints.iisc.ernet.in)
- NAL Bangalore (http://nal-ir.res.in)
- NISCAIR online periodicals repository (http://nopr.niscair.res.in)
- Open MED@NIC (http://openmed.nic.in)
- IIM Kozhikode (http://eprints.iimk.ac.in)
- URDIP Pune (http://oa.csirexplorations.com/)
- Institutional Repository of North-Eastern Hill University: An Evaluative Study

8. How to develop IR?

IR consists of repository server for storing institution publications, including metadata and full text documents (not merely bibliographic records). This need high capacity storage computer work station which act as server for hosting data. IR needs repository software for managing access to repository content and this s available free. The administrator has to monitor registration of users for putting document on the server as well as document submission process. The aspects like dissemination of information, administration of IR, document submission policies, legalities, etc., to be framed properly.



Source: Narayana Poornima (2009), Institutional repositories

A successful IR activity depends on setup policies and technical components the policies may cover issues related to scope of contents i.e. types of publications, subject and time period etc. In addition to this document formats for preservation, metadata formation, copyright issues, and maintenance of quality are few aspects to be covered.

Rajashekar T B (2010) detailed out the complete process of IR which covers orientation phase planning phase, Implication Phase and operational / maintenance phase. In orientation phase what and why IR to be establish and services provide through it IR. Planning phase covers areas Institutes to be covers, survey of Stakeholder develop policies and agreements as well as methods of submission i.e. Centralize or decentralize collection of user groups, Responsibilities involve, selection of IR software and Hardware etc. Implementation phase startup the activities like selection of objects for institutional repository, IR maintenance and harvesting services etc. to be looked in to.

9. Best Practices

Drake (2004) pointed out some hidden secrets about the development of the IR including different policies to be developed for the smooth functioning of the IR which covers scope, contents, access, standards, sustainability and funding as well as legality aspects.

- Institution should choose a unique institutional domain that can be used by all the websites of the institution. Well known acronyms should be used including descriptive word, like the name of the city, in the domain name
- A large web presence is made possible only with the effort of a large group of authors. One can allow a large proportion of staff, researchers or graduate students to be potential authors and maintain their own websites. A distributed system of authoring can be operative at several levels.
- Important resources in non electronic format that can be converted to web pages for easy access
- The Web (IR) is a hyper textual corpus with links connecting pages. So interlinking of WebPages should be done properly

- Web audience is global so language should be globally accepted. All pages should be mandatory in English
- Although html is the standard format of web pages, sometimes it is better to use rich file formats like Adobe Acrobat PDF or MS Word doc as they allow a better distribution of documents. Sometimes postscript format is also difficult to open then PDF format is recommended.
- IR design should be search engine friendly so avoiding cumbersome navigation menus based on Flash, Java or JavaScript that can block the robot access is advisable.
- IR Popularity and Visit statistics should be maintain.
- For enriching site the use of meaningful titles and descriptive Meta tags can increase the visibility of the pages. There are some standards like Dublin Core that can be used to add authoring info, keywords and other data about the web sites.
- It is necessary and mandatory to maintain a copy of old or outdated material in the site. Sometimes relevant information is lost when the site is redesigned or simply updated and there is no way to recover easily the vanished pages.

10. Issues related to IR

Among the many few prominent are:

- Copy right and legality
- Customization of Open source software
- Content of the IR (Classified or open)
- Formulating different policies for long sustainability
- Efforts to change mindset of Authors towards depositing literature in IR
- Continuous monitoring and additional manpower.

11. How to meet out the challenge?

Barton et al (2005) has pointed out many problems and hurdles faced while implementation and building a repository includes:

- Proper development of policies and its sustainability
- Managing intellectual property rights for common use and awareness
- Management or institutional support as well as users support
- Digital preservation and identifying key stakeholders

It also needs personalized efforts of library staff to collect, scan and preserve and make it available on demand. This needs extra skills of maintaining IR.

12. Conclusion

Institutional repositories are one of the most promising developments that utilize new web technologies to offer a viable and sustainable alternative to the current model of scholarly publishing. The repositories also serve as a comprehensive publications database of the parent organization. The aim of institutional repositories is to aid the management and dissemination of the scholarly electronic resources produced by academics.

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Library Website: A Mirror of the Library

Sangeeta N Dhamdhere

Abstract

Use of Web 2.0, cloud computing technology and its use in library websites and making academic libraries also to provide best services with blogs, RSS, instant messaging, social networking services, wikis, and social tagging applications, which are normally provided by the research and university libraries of developed countries. For developing country libraries are still in search of such tool for their library and information center. This article gives guidelines and tips for developing effective library website using new ABCD an open source tool for the same activity.

Keywords: Library website, Cloud computing, Web & Lib. 2.0, Best practices, ABCD software

1. Introduction

The library website may be the library's own domain, or it may be places within the institution's/community's website. Initially institution websites were maintained by the other agency but as there is constant need of updating in the website and also size of contents to be accessed through library webpage is more many library websites are maintained in housed by the librarians. To some users the library web site is the library as many libraries provide even contents of library too on the library website through OPAC and search options. The library web site is part of the public image of the library in the community therefore library website can be a mirror of library which shows its collection, services, facilities, communication media and other information. Library users expect value from a web site: good performance, reliability, durability, quality, appealing appearance -- and a wide variety of features and options that enhance access to library resources and increase availability and accessibility.

2. General features of ABCD Site

2.1 Access: The administration area is available through the main address of ABCD-Site. After downloading the ABCD software type URL http://localhost:9090/site/admin/ to enter to the ABCD administration area.

2.2 Initial Screen for the ABCD-Site Administration System: The ABCD-Site currently has interfaces in 4 (four) languages and it is possible to work in any number or combinations of the languages. The content of each interface is managed separately with the use of a code and a password. There are two types of users on the ABCD-Site administration system:

- ❖ Administrator: with full access to all areas of the ABCD-Site
- ❖ Content: restricted Access to Components area

Standard the passwords subject to change by administrator is:

user: adm

password: x

Note: The same password can be used on the interface of any language.

2.3 Main menu: The main allows management of the content of an ABCD-Site with identification of sources, topics, links with other sites, etc. It is divided into 3 main areas: Structure, Components and Access.

2.4 Structure: Structure refers to the management of the ABCD elements: nomenclature, labels, languages, content access control (information sources, topics and communities) and to annexes (highlights and notices) etc.

2.5Components

Components refer to content management (information sources, topics and communities) which will be available in the ABCD interface.

Access: Access refers to the access mode of the producers responsible for information, updates and validations of the content of the site.

3. Tools

3.1General tools

These relate to features available in any ABCD content management window, whether in Structure, Components or Access. In the example below, we select the SERVICE box. Each service box help us to design website as per our need and to add items according to the type of contents existing that section, modify content, delete content and save the changes made in that section and records them into the interface files. Items list lists items according to the type of content existing in the section. It shows the information on a hierarchical level determining how it is displayed in the ABCD site. Up and Down arrow enables us to change the sequence.

3.2 Specific tools

Structure Area Management

- ABCD Logo: adds URL of the logo and URL for the responsible organization providing ABCD
- Identification: Identifies the ABCD name that will be displayed in the banner and at the top of the administration system page.
- Contact: enables to add E-mail to contact the person(s) responsible for ABCD. More than one address can be registered, which in the public interface will be selected via a box, in the form.
- Version: makes available public interfaces in other languages. English, French, Spanish and Portuguese language interfaces are available currently in the administration module. One can add other languages too
- Institution: enables to add institutions name, image/logo and link for reference
- Metasearch: identifies and enables changing labels of research services available on the public interface.
- Responsible institution: enables to enter data for contacting the institution in charge of the Site, address and phone no.,etc on the site footnote.

- Meta information of the site: is the space for ABCD's brief description, which will allow the ABCD to be indexed and retrieved by web browsers. Enables description by author, keyword and description,etc. figure shows how easy to add information in the site
- Texts: manages the list comprising all labels and image URLs that identify common actions and areas of the ABCD site, other than the search services.
- File manager: allows the uploading of local files to a dedicated are of the server. ABCD site is configured to load files under /abcd/www/htdocs/local. The administrator of the server should give read/write access to the folder.

4. Components

It enables administration of the system via "columns" subdivided into components (or boxes) displayed in up to three (3) columns, with no limits as to the number of component inside each one of them in that:

Column 1 – links to other Libraries or related portals.

Column 2 – collection of ABCD information sources.

Column 3 – space available for highlights, news, etc.

Each component of the column is represented by a title with the type of function that will make working on the content shown below:

Sources collection

It enables registration of each information resource, as well as its configuration to take part in the Met search.

- **Met search:** This mechanism enables the user to conduct a free query or a query by subject over different information resources included in the Site.
- **Communities:** Enables the registration of a specific Community information resource such as virtual communities, forums, etc.,
- **Portals:** Collection of links to other web portals related to ABCD.
- **RSS:** Creates a link with news agencies that make the RSS feature available to users.
- **Access area management:** It refers to the management and control of users, passwords and those responsible for the administration of ABCD. In this section, one may add, edit or delete the registration of users and passwords to limit the management of the Interface.

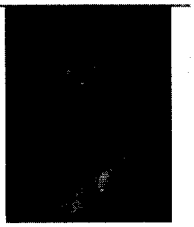
5. Conclusion

The ABCD site tool is boon for all types of libraries in developed and developing countries. The example of Virtual Health Library and their allied libraries mentioned above gives its excellent functionality. As this tool is for libraries and any institutes and easy to manage and create it can be used for all types of libraries to provide library information and library services. It supports web 2.0 applications too like social networking, RSS, Chat and Email facility too its need of present libraries.

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Open Access Digital Institutional Repository of Raman Research Institute

Vrinda J. Benegal

Abstract

Digital Institutional Repository is a vehicle to showcase the research output of an institution. It becomes important as it is a natural extension of the academic/Research Libraries responsibility as a promoter of primary research, seeking to preserve and patronage and build up its intellectual assets. This paper illustrates the role of RRI Digital Repository in supporting and enhancing research work in RRI. The Digital Repository of RRI (http://dspace.rri.res.in) is a place where the library, collects, curates, preserves and provides access to scholarly literature of RRI Academia.

Keywords: IR, Open access, Core features, Benefits, Contents

1. Introduction

The RRI Digital Library is institutionally defined, has locus on Scholarly material in digital formats, which is Cumulative and perpetual, open access and Interoperable providing access via multiple search engines and discovery tools. Institutional Repository (IR) is a service that a Research Organization offers to its community to maintain and circulate online research materials generated by its community members. Institutional Repository of RRI is known as the "Raman Research Institute Digital Repository".

2. Digital Repository of RRI

The RRI Digital Repository, after considering its importance, significance and advantages, was launched in early 2006. The repository contains all the research papers published since the institute was established in 1948 till date. Sir C.V. Raman, the Nobel Laureate and the founder of RRI has published 514 articles in various journals. In order to bring global visibility to all his intellectual creations and the research work carried out since the institute was established in 1948. This repository was designed using DSpace, an open source software package that provides tools for management of digital assets. DSpace, is jointly developed by MIT Libraries and Hewlett-Packard Labs. While building this repository strict adherence to copyright clearance was considered.

3. Contents of RRI Digital Repository

RRI Repository is the digital archive of the research output of the institute scientific community. This knowledge base covers

- **Published Research Materials like**: Journal articles, Conference papers, etc.,
- **Unpublished Research Materials**: Ex: Technical reports, patents, preprints, theses and audio/video clips.
- **Others like**: Newspaper clippings of Sir C.V. Raman

One can browse the documents by communities & collections, date, author, title, subject and document type. Both simple and advanced search facilities have been provided thus making it user friendly.

4. The different communities under which repository are built up

- Archives
- C. V. Raman and his work
- Science at the Raman Institute: 1948-1970
- Astronomy and Astrophysics
- Light and Matter Physics
- Soft Condensed Matter
- Theoretical Physics
- Patents
- RRI Science News
- Miscellaneous

- **Archives:** Comprises of annual reports; Gandhi memorial lectures and newspaper clippings. Gandhi Memorial Lecture is an annual event held on October 2nd, the Gandhi Jayanthi. It is a popular lecture series and eminent people from different walks of life are invited to share their thoughts. Audio/Visual format of this lecture series are a part of this institutional repository. All the news items covered in newspapers on Sir C V Raman and RRI are uploaded in the archives. All these are of historical importance and needs to be preserved in digital format and also at the same time show cased to the entire world.
- **C. V. Raman and his work:** include the scientific papers published by him; lectures delivered by him in text format; biographical sketches on him and articles published on him and his work by others. C V Raman had published about 514 articles.

- **Science at the Raman Institute: 1948-1970** includes all the articles published by Raman's students working under his guidance from the inception of the institute until his demise.
- **Community 04 – 07** comprises of the research articles and theses published by the different research groups at RRI namely Astronomy and Astrophysics, Light and Matter Physics, Soft Condensed Matter and Theoretical Physics.
- Under the community **Patents**, there are 4 patents to which RRI gets credit.
- **RRI science news** covers those aspects of RRI research information covered by news items.
- **Miscellaneous** publication includes popular articles submitted by research scholars

5. Institutional Repository Services

An Institutional repository is a digital scholarship of an important area within the intellectual Landscape. IR is an effective scholarly communication channel and is a service that a Research Organization offers to its community for the management and dissemination of research materials created by the community members. It provides tools

that help faculty, students and researchers to disseminate their work to the community outside the institution. IR facilitates long-term preservation through centralized planning, support and funding.

6. Core features

The prominent Institutional repository shows that the following core features should form an integral part of a typical Institutional repository - Deposit and withdrawal services, access control and rights management, administrative and metadata services, user support and feedback mechanisms, storage space, file naming service, search engine, preservation and migration.

Other unique features of RRI Digital Repository are:

1. Contains all the research publications of our institute
2. Rich source of information on C.V. Raman and his work;
   - C.V. Raman's collected papers
   - C.V. Raman's lectures and miscellaneous writings
   - Newspaper clippings from the Raman archives
   - Rich source of information on C.V. Raman and his work
   - Biographical sketches and articles on Raman

7. Uses of Institutional Repository

There are many benefits IR hold for academic institutions and their libraries. IR provides institution with the opportunity to collect, store and disseminate institutional output, while bringing visibility to the Institution. The IR movement is still gaining momentum and there are still many challenges affecting those creating and operating IR's today. The main challenge for IR is staff and faculty participation. To create the IR, the staff will willingly offer up their time and work to the self-archival process.

8. Challenges encountered

Some of the challenges the staff members faced operating an IR are: The Content development is one of the biggest challenges. Authors do not come forward in posting their papers voluntarily. The support and collaboration efforts are essential in creating a successful cord between IR library staff and the faculty.

Reasons for poor response from authors

- Authors are not willing to take on additional work;
- They are afraid of violating copyright. They do not read the copyright transfer form
  - fully before they sign and are not aware of their rights;
- Fear of plagiarism;
- Benefits not immediately obvious – why deposit in an institutional archive when their papers can be found on arXiv?

9. RRI Institutional Repository and Open Access

- The earliest open-access RRI paper in arXiv.org is dated 1993!
- We provide open access to the full-text of papers wherever the publisher gives permission to do so.
- Where this is not possible, we restrict access to the full-text and make only the bibliographic details available. If possible, we also provide a link to an alternative location, e.g. on a publisher's site
- In case an open-access version is available at arXiv.org or at any other website, we give a link to it.
- Many RRI authors have been following the self-archiving tradition established in the fields of physics and astronomy by depositing their papers in arXiv.org. Hence many of our papers are already open access.
- After seeking and obtaining permission from the publishers we have made, open access to all the C.V. Raman's collected papers , C.V. Raman's lectures and miscellaneous writings, Biographical sketches and articles on Raman, Newspaper clippings from the Raman archives.

10. Advantages of an IR

10.1 For the researcher

- Wider distribution increases citations of an author
- More citations to author means more visibility to the work
- And quality assessment of an individual work
- Acts as Value added services like; hit counts on papers; personalised publications lists; citation analyses
- Increase the dissemination and impact of his/her research work
- Increases profile of an author on world- wide basis and in subject domain
- Repository provides an author with central archive of his/her work

10.2 For the institution

- Acts as a promoting channel to funding sources, potential fresh graduate students, new faculty and many more.
- Repository showcases all the research publications and grey literature of the institute
- Enhances the prestige of the institute and the visibility of the faculty
- Stewardship of scholarly output
- Efficiencies through centralization
- It supports the open access movement and plays a role in the scholarly communication process.
- Adds a new dimension to the role of "librarianship"
- RRI IR provides information about our founder and his work, additional and important specialized information services. Thus it plays as an historic record in showcasing C.V. Raman's legacy and the RRI's history.

11. RRI Digital Institutional Repository -Vision 2015

The RRI Institutional Repository is a storehouse of digitized information of documents of its scientific community. The emphasis given is more largely on the collection of its founder Sir C.V. Raman, which has a large collection of newspaper clippings about Raman dating back to the 1930s. All these documents are made accessible not only on our Intranet but also on the Internet. It serves as a Resource Sharing Tool simply because many of Raman's papers are on open Access. Thus RRI Institutional Repository acts as an incredible historical source of information.

We need to add lot more information which may be of interest to science historians such as: Hand written manuscripts of Sir C V Raman; his correspondences; grey literature; audio and videos of lectures delivered elsewhere by RRI faculty; students in-house meetings; lectures; colloquia; conferences; seminars etc. are the other sources which needs to be digitized and uploaded on the repository. Photo gallery-Raman's photographs from the archives; Audio recordings of lectures by Raman; Audio and photographs of events held at RRI will be the other components of this repository. It is suppose to digitize these archival materials and make them accessible through RRI digital repository.

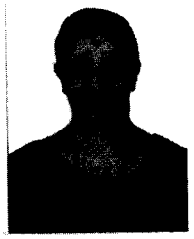
12. Conclusion

RRI Repository now presents potentially rich sources of information, data, images, and valuable research results. The future will bring greater innovation and technologies through open access and institutional repositories.

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Open Access Initiatives in Health Sciences: Use and Awareness of Open Access Journals - A Study

Shashikala K

Abstract

This paper is the pilot study about open access journal's use and awareness among the faculty and post graduate students of A.B. Shetty Memorial Institute of Dental Sciences, Mangalore. In the present digital era the availability of scholarly information on the web has been increased and the consumption of these resources by the academicians also increased to a greater extent. These resources have influenced greatly on their teaching, learning and research activities. Among these resources online journals play a vital role in Health care sector because the journals are the primary sources of information and acts as the basis for the evidence based practice in the treatment of the patients.

Keywords: Dentistry, e-journals, Health Science, Internet, Open Access

1. Introduction

The Information Communication Technology (ICT) has made drastic changes in the production, dissemination and retrieval of information globally. The present era is known as digital era and most of the information sources are available in digital form. The digital technology made significant effect on mass information production and make them available to the globe through internet. Hence Internet and World Wide Web (WWW) have become the part and parcel of the society. Now the academic communities also mainly depend on Internet and WWW to fulfill their information needs. The health care providers also no exception to this and in fact they are in the fore front to embrace and adopt the new technology. The digitization of information resources also increasing day by day in health sciences also and the health care professionals are opting the latest technology for their academic, research and also for the patients care.

2. Open Access in Academic and Research

Journals are the primary sources for information retrieval in academic and research sector in the society. Most of the researchers intended to publish their research articles to be published in a reputed International journal with high impact factor so as to make their research known to the world. But the journals are monopolized by the publishers with high cost of subscription rate and also the publishers have the sole right on that article (copy right) once it is published. Even if the researcher needs his own article for his use in future he has to pay the subscription amount in foreign currency such as dollars /pounds etc for it. So it's difficult to access the same article by the author himself and he has to depend upon publisher for his own article. In these circumstances Open Access is the noble concept introduced all over the world for better access of information at the doorsteps of the academicians and researchers.

3. Open Access and Health Science

OA initiatives brought drastic changes in information communication system and free access to scholarly communication become the recent trend in Health Science sector. "Information is the life blood of medical practice and universal access to biomedical information will have a profound effect upon public health, health education, and economic development of low and middle income countries" (Yamey G, 2009).[1] The scholarly literatures or information are freely available through internet and most of the European countries are in favor of open access to scholarly communication. The OA initiatives were impressed the availability of biomedical literature and playing as a crucial bricks to the evidence based practice in health care (Godlee F et al, 2004).[2] Many international funding agencies for biomedical research like the Welcome Trust in UK, National Institute of Health in USA etc., have made mandatory policies to publish the research articles in OA. The National Library of Medicine (NLM) in USA offers large amount of research articles through its open access gateway PubMed central the repository of journal articles. The new concept which has already entered to the scientific community i.e. Open Access to scholarly information which originated from Budapest Open Access Initiatives (2002) is widely accepted by the Health Science community in developed counties. **Weinberg J M**[3] quoted "Open access journals are a novel concept in the medical literature. They offer accessible information to a wide variety of individuals, including physicians, medical students, clinical investigators, and the general public. They are outstanding sources of medical and scientific information." But developing countries like India open access is not flourished due to lack of awareness among the potential users, absence of standard policy, broadband connectivity etc.

4. Literatures Reviewed

A research study was carried out on scientist's awareness and attitude towards OA at Library of Chinese Academy of Sciences (LCAS), Beijing and reported that 59.2% respondents were prepared to publish in OA journals; 8.1% have already published in OA journals; 30.5% of respondents were not ready to publish in OA journals and the remaining 2.2% have not responded. (Chu and Li, 2005).[4] A web based survey was made at Centre for Information and the Evaluation of Research, School of Library, Archive and Information Studies, University College London, regarding the author's attitude of publishing in OA journals(Nicholas D et al,2005).[5] It is found from the study conducted to find out the use of Indian digital libraries by biomedical practitioners in West Bengal region, with special emphasis on the use of Indian biomedical information resources that biomedical professionals of West Bengal region use 'IndMed' the Indian bibliographic database more comprehensively than the 'Medline' the International bibliographic database (Chakraborty S et al, 2006).[6] The emerging infectious diseases like malaria, swine flu, HIV/AIDS etc can be prevented through the co-operative effort of the researchers (Chan, et.al, 2009).[7] It was found from the usage statistics that the usage of OA journals were increasing both from the developing countries and from the wider international communities. Some of the western countries made mandatory to deposit/publish the research articles funded by the public that promotes OA(Chan L et al, 2009)[8]

5. Need for the Study

The Library and Information centre is hub of every education centre, which provides knowledge and information into the minds of the patrons. The Library and Information centers of Nitte University are well equipped with standard books, National & International Journals & back volumes, CD ROMs, and other resources to serve its patrons. Most of the subscribed International journals online versions are available for the print subscribers, so that the academicians are having the benefit of accessing the journals immediately after publishing as the print copies reaches to the Library a couple of weeks/months later. But in recent years most of the publishers discontinued the service of access to online version at no extra cost and started charging 5% -12% extra amount along with print subscription for each journals. The developing countries like India 5% -12% in dollars/pounds really counts for the libraries to balance their constraint budget. These problems are solved to some extent by HELINET consortia of Rajiv Gandhi University of Health Science, Bangalore since 2003 onwards. But in the year 2010 very less journals were getting accessed that also only from August which created problems to the users and the journals are not sufficient to any academic institutions having Post Graduate (PG) courses. So, it was felt to search for the availability OA journals in health sciences and its use by the academic community of the constituent colleges of Nitte University for their teaching, learning and research.

6. Objective of the study

- To examine the awareness and usage of about e-journals, journals @HELINET consortia and mainly about OA journals among academicians.
- To identify the users preference for print and electronic journals.
- To study the familiarity with the OA initiatives by the academicians
- To collect the opinion regarding the publication in OA initiatives.

7. Methodology

To investigate the awareness and usage of OA structured questionnaires were distributed to the faculty and PG students at A.B. Shetty Memorial Institute of Dental Sciences and the information obtained by them were analyzed with simple statistical method. As it was a pilot study the questionnaires distributed only for 22 faculty members and 30 post graduates i.e. above 20% of the population under study in the college.

8. Scope and limitations

Though the academicians of the institute includes faculty, students (U.G. & P.G.), Para dental staff, non teaching staff etc., but the study was restricted only to the faculties with post graduate qualification (MDS) and PG students. The faculties with under graduate (BDS) qualification, UG students, Para dental staff and non-teaching staff were excluded as because it was observed that they are not using specialty scientific journals in dentistry for their academic activities and therefore might not have been able to provide valid data.

9. Analysis and Findings

9.1 Awareness and preference for e-journals

A structured 52 questionnaire were distributed, 22 to faculty and 30 to PG students of the institution with personal interactions to know their opinion regarding OA journals. As HELINET consortia is playing a role in providing access to e-journals to the library patrons in the college, the questions were asked about the awareness & use about it also. The study showed that all the respondents (100%) have the awareness about e-journals.

Table 1: User's preference for types of journals

Users	Print	Electronic	Both equally
Faculty	9 (41%)	1 (4.5%)	12 (54.5%)
PGs	2 (6.7%)	4 (13.3%)	24 (80%)
Total	11(21.2%)	5(9.6%)	36(69.2%)

9.2 Awareness and use of HELINET and OA Journals

The following tables depict the awareness and use of journals @HELINT and OA journals by the users.

Table 2: Use and awareness of HELINET consortia (e-journals)

Users	aware	Not aware	using	Not using
Faculty	21 (95.5%)	1 (4.5%)	16 (72.7%)	6 (27.3%)
PGs	29 (96.7%)	1 (3.3%)	24 (80%)	6 (20%)
Total	50 (96.2%)	2 (3.8%)	40 (76.9%)	12 (23.1%)

Table 3: Use and awareness of OA journals

Users	Aware	Not aware	Using	Not using
Faculty	20 (90.9%)	2 (9.1%)	16 (72.7%)	6 (27.3%)
PGs	30 (100%)	-	27 (90%)	3 (10%)
Total	50 (96.2%)	2 (3.8%)	43 (82.7%)	9 (17.3%)

It is revealed from the above tables that PGs are more aware about e-journals under HELINET consortia as well as Open Access journals and their usage also more compared to that of faculty.

9.3 Need for Awareness campaign/ pregame

Though majority of faculty and P.G.s are aware of OA journals still they are lacking in proper knowledge about URL of these journals and how to access them and how many journals are available in each specialty etc. A list of sources with number of journals available along with address of websites was listed in the questionnaire, but most of the respondents were aware of PubMed only and very few were aware of Medknow publications and rests of the sources were not known by them. They were asked whether they need any awareness progamme about OA journals and it was found that majority of them 77.27% faculty and 80% of PGs are in need of awareness programme to enhance the usage of OA journals.

9.4 **Publication in OA journals:**

Table 4: Publications in OA journals

Users	Published	Not Published	Agree to pub.	Not agree
Faculty	6 (27.3%)	16 (72.7%)	18 (81.8%)	-
P.G.s	26(86.7%)	-	22 (73.3%)	1(3.3%)

The above table gives clear picture about publication in OA. Regarding publication in OA journals it is observed that majority of the PGs have published in OA where as faculties are lagging behind in this criteria and 4 PGs (13.3%) have not answered for the query may be due to uncertainty. The answer for the willingness to publish in OA journals was found very interesting that more than three fourth of the faculty and nearly 73% of P.G.s were ready to publish in OA journals and 4 faculty (18.2%) have not answered for the question.

9.5. Difficulties to access OA journals

It was found from the survey that nearly 36.4% of the faculty and 43.3% of the P.G.s were facing some problems while accessing open access journals and 31.81% of the faculty and 40% of the PGs were not finding any difficulties and rest of them not answered for the query. The main problem is less awareness and knowledge about publishers website, how to access and also opined that the OA journals are less useful.

10. Discussions

The pilot study conducted at the institution revealed that most of the respondents have not clearly understood the concept of OA journals. It has been found that all the respondents were searching the required articles through search engines instead of publisher/journal's websites. Most of them were aware about online journals which could be accessible freely to the print subscribers with user ID or IP authentication activated for the benefit of patrons of the library and HELINET journals. They were not even aware about number of journals freely available in their specialty branches of dentistry. Some of the respondents collected the website addresses of journals listed in the questionnaire and this study may enhance the awareness among them about the OA journals. Most of them are in need of proper guidance to access these journals through various sites. An interesting point is revealed from the survey that one of the PG student among the respondents got an award for her research paper by using open access journals and the title of the award is "Commodore B.K. Gupta award for Best Clinical Periodontics Paper - 2009"

11. Suggestions

Some of the suggestions received by the respondents are:

- More number of journals should be made available freely.
- It is highly useful for the students and staff, but they should be made aware of various resources for free access journals.
- Various sites of OA journals should be displayed boldly in the library.

- More awareness to be created among students and staff by providing list of OA journals.
- OA journals need to be accessed more by the Indians.
- Every staff members should be trained in the ICT and how to access various journal's sites and articles.
- Free access to articles required especially with well known journals including international journals.

12. Conclusion

The OA journals have rapidly established as a viable publication media in all fields particularly in Health Sciences like dentistry and are the best sources of information on current research and development for the evidence based dentistry in 'chair side' which in turn benefit the oral health care of the public to bring "Healthy Smiles for Life". The lack of proper knowledge regarding OA journals is the main drawback among the respondents to access through various sources. It is felt that the usage promotion of OA journals in dentistry requires aggressive and sustained training and campaign activities to the academicians of the institution. More number of OA journals should to be made available and encouragement should be given to the academicians to publish their research articles in OA journals. The Government and University authorities should take some initiatives for the promotion of OA by making some mandatory policies to publish in OA for the benefit of overall global health. Weinberg J M rightly quoted "Open access journals are a novel concept in the medical literature. They offer accessible information to a wide variety of individuals, including physicians, medical students, clinical investigators, and the general public. They are outstanding sources of medical and scientific information".[8]

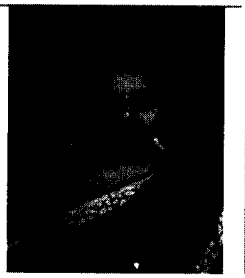
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Open Access Initiatives in India: An Overview

Maya Devi **Maneesh Kumar Bajpai**

Abstract

In this paper, we would like to highlights the trends in open access publishing in India. Some institutions / universities of India have also taken initiatives to provide their scholarly journal on the open access platform. To know the position of India publishing in open access journals, data was collected from directory of open access journals (DOAJ). It was found that India held the 5th position among the top open access publishing countries who especially engaged in publishing open access journals.

Keywords: Open access, DOAJ, Scholarly publishing, Repository

1. Introduction

Open Access (OA) movement has been a thrust area of major debate and interest around the world, in the developing countries it has been seen as an unprecedented opportunity to provide equality of access to essential research information and raising awareness of national research. Open Access (OA) is a knowledge-distribution model by which scholarly, peer-reviewed journal articles are made freely available to anyone, anywhere over the Internet. In the era of print, open access was economically and physically impossible. Indeed, the lack of physical access and the lack of knowledge access were the same—if one did not have physical access to a well-stocked library, knowledge access was impossible. The Internet has changed all of that, and Open Access is a movement that recognizes the full potential of an open world metaphor for the network.

2. Open Access E-Journal Publishers and Hosts

There are several publishers are now taking part in open access publishing. Here is the list of the some publishers/hosts who are engaged actively in open access activities.

S. No.	Publisher	URL/Web Address
1.	Africa Journals Online	http://www.inasp.info/ajol/indexfr.html
2.	BioMed Central	http://www.biomedcentral.com
3.	High Wire Press	http://www.highwire.org/
4.	Public Library of Science	http://www.publiclibraryofssience.org
5.	Pub Med Central	http://www.pubmedcentral.nih.gov
6.	SciELO	http://www.scielo.org

3. Open Access Journals in India

The Indian Institute of Science, Bangalore, was the first to set up an institutional repository in India. Prof. M S Valiathan, former President of the Indian National Science Academy has taken first initiatives to make open access four journals published by INSA. It

was observed that initially most of the open access journals available in the field of science and technology but thereafter, a revolution have taken place in the availability of the open access journal in other major subject groups. Some of the major contributors in the science and technology subject

- Open-J-Gate (9908 journals as of January, 2012)
- DOAJ (372, Indian journals)
- Indian Academy of Sciences (11 journals)
- Indian Medlars Center (MedIND programme 40 bio-medical journals)
- MedKnow (More than 70 journals)
- Indian National Science Academy (04 journals)
- Calicut Medical College (03 journals)
- NCERT(08 journals)
- NOPR (NISCAIR Online Periodical Repository)..... etc.

However, such types of efforts have been started in other subjects. NISCAIR is providing fifteen (15) open access journals through online periodical repository. Out of which one is in the field of library and information science. DESIDOC has recently started providing the Open access of its one of the journal namely 'DESIDOC Journal of Library & Information Technology'.

4. Advantages

Open access movement is certainly has given a open space to the researchers to get the desired information without any restrictions like financial, legal and technical. Open access publishing has divergent advantages over limited access---

- Open Access scholarly publishing is providing unrestricted access of information than the commercial publications where a very rigid module of access is available.
- Open access scholarly publishing is available to your doorstep at the rate of internet access cost whereas commercial publications are very costly.
- Open access scholarly publishing is free from the legal issues like copyright and licensing issues and may be distributed to the others without any hesitation whereas it can't be done with the commercial publications.
- Open access scholarly publishing is in the reach of the very financially weak user which is never possible with the commercial publications.
- Open access scholarly publishing is easy to use due to its simpler access and search platform which is quite tough with the commercial one.

5. Limitation

Open access scholarly publishing has certain limitations also. Finance is required everywhere to run any project. Here also, if everything is free even material, software etc but at the same time peer review cost plays a vital role in a good quality publishing. Budapest open access initiatives report shows that the peer review cost of the Open Access Journals is much lesser than the commercial peer review journals. It needs more hands to come and stand together to promote such great initiatives by minimizing the cost of the publishing of Open Access Scholarly materials.

6. Issues and Challenges

- **Revenue Loss:** There is always a fear that if the journals become open access, the revenue loss will be observed by the print publishers. But at the same time it increases readership and circulation of the material which increases the quantity of knowledge.
- **Lack of Infrastructure:** The biggest challenge among the open access publishers is the lack of Information technology (IT) Infrastructure and appropriate funds to develop the open access repositories for making it more efficient online tools of managing and publishing journals.
- **Legal Issues:** The other very important issue is copyright and licensing with the lack of managerial support and clientele support. Therefore, author may give their article to the publisher but must have their copyright which he/she may publish on Open Access platform for the education and research purpose.

7. Conclusion

There are two major problems that developing countries always experienced. First is inability to afford subscriptions to journals and the other one is inability to integrate national research into the global knowledge pool. Solution is open access. What we should do for expansion of open access in India:

- Need to create OA awareness.
- Need to encourage scholars/ scientists to publish their research/ output in open access journals or Open Access Platform.
- Need to generate/create open access platform
- Need to follow the recommendations of the National Knowledge Commission of India.

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Open Access Journals in the Discipline of Chemistry: A Study

Ashwini HS **Manjunath M**

Abstract

The Directory of Open Access Journals (DOAJ) which lists the open access scientific and scholarly journals in various subject disciplines was selected to analyse the open access availability of the Chemistry Literature. In the study it is found that 100 open access e- journals are published in the area of General Chemistry by various publishers of the world. These 100 e-journals have been analyzed based on the year of publications, periodicity, publishing country, language and subject headings of e-journals.

Keywords: Open access, Open access journals, DOAJ, Chemistry, E-journals

1. Introduction

Libraries are hyperaware of the economic issues besetting the scholarly communication system; as the costs to purchase or license scholarly publications rise, libraries explore ways to manage those costs [1]. This situation has leaded both the librarians and other professionals to depend on open access journals for scholarly contents.

2. Objectives

- To study the discipline wise availability of e-journals in DOAJ.
- To enumerate the free e-journals in General Chemistry on DOAJ.
- To find out the trend of periodicity of open access journals in Chemistry.
- To identify the contributions of various countries in publishing of open access journals in Chemistry.
- To know the usefulness of Chemistry e-journals to other disciplines.

3. Methodology

For the present study the open access journals in the area of General Chemistry were selected from Directory of Open Access Journals (DOAJ). The further data required for the analysis were collected by visiting website of each open access journal.

4. Limitations of the study

Total 149 open access journals are listed under the broad discipline Chemistry out of which 100 journals belongs to General Chemistry, 14 journals are from Analytical Chemistry, 16 journals are related to Chemical Engineering, 4 journals belongs to Inorganic Chemistry and another 14 journals are related to Organic Chemistry. For the present study the only open access journal which comes under General Chemistry are considered and others are excluded from the study.

5. Directory of Open Access Journals (DOAJ)

DOAJ is a freely available directory of open access electronic journals on internet. This directory includes 7743 journals as on November 11, 2011 on 17 different subject disciplines.

Table-1: Discipline wise availability of e-journals

Sl. No.	Discipline	No. of journals
1	Agriculture and Food Sciences	376
2	Arts and Architecture	191
3	Biology and Life Sciences	667
4	Business and Economics	403
5	**Chemistry**	**149**
6	Earth and Environmental Sciences	528
7	General Works	168
8	Health Sciences	1170
9	History and Archaeology	224
10	Languages and Literatures	471
11	Law and Political Science	292
12	Mathematics and Statistics	241
13	Philosophy and Religion	261
14	Physics and Astronomy	139
15	Science General	116
16	Social Sciences	1519
17	Technology and Engineering	828
Total		**7743**

6. Analysis of Data

Table-2: Periodicity of e-journals

Sl. No.	Periodicity	No. of Journals
1	Weekly	2
2	Fortnightly	2
3	Monthly	9
4	Bi-Monthly	10
5	Quarterly	36
6	Annual	7
7	Bi-Annual	10
8	Tri-Annual	3
9	Five issues in a year	1
10	As and when available	20
Total		**100**

This table shows the periodicity of open access journals in the area of Chemistry. Table-2 shows the highest journals i.e. 36 are being published quarterly. 20 journals are published as and when the articles are available for publication.

Table-3: Year-wise distribution of e-journals

Sl. No.	Year	No. of e-journals
1	1932	1
2	1949	1
3	1980	1
4	1990	1
5	1996	2
6	1997	3
7	1998	4
8	1999	4
9	2000	6
10	2001	2
11	2002	11
12	2003	1
13	2004	6
14	2005	7
15	2006	6
16	2007	9
17	2008	8
18	2009	9
19	2010	9
20	2011	9
	Total	**100**

Table-3 represents the year-wise distribution of e-journals according to the initial year of publication of all open access journals of Chemistry. The table shows that 11 journals started its publication in 2002 and 9 journals are being published since 2010 and 2011. It is interesting to note that 1 open access e-journals was started it's publication in 1932.

Table-4: Country-wise distribution of e-journals

Sl. No.	Country	No. of Journals
1.	Argentina	1
2.	Brazil	7
3.	Canada	2
4.	Chile	2
5.	Croatia	1
6.	Czech Republic	2
7.	Egypt	1

8.	Ethiopia	1
9.	Germany	6
10.	India	14
11.	Indonesia	2
12.	Iran	1
13.	Japan	3
14.	Macedonia	1
15.	Mexico	2
16.	Nigeria	1
17.	Pakistan	1
18.	Peru	1
19.	Poland	1
20.	Romania	4
21.	Russia	2
22.	Serbia	4
23.	Slovenia	2
24.	South Korea	2
25.	Switzerland	4
26.	Turkey	2
27.	Ukraine	1
28.	United Kingdom	7
29.	United States	21
30.	Venezuela	1
Total	100	

Table-5: Top five ranking of countries

Sl. No.	Country	No. of e-journals	Rank
1	United States	21	1
2	India	14	2
3	United Kingdom, Brazil	7	3
4	Germany	6	4
5	Romania, Serbia, Switzerland	4	5

Table-4 shows that 100 open access Chemistry journals are published from 30 different countries around the world and Table-5 shows the top five ranking of countries according to the highest number of publications. From the tables it can be noted that highest number of open access journals i.e. 21 are published from United States which takes the first rank. It is interested to note that India takes the second rank by publishing 14 open access journals.

Table-6: Language-wise distribution of e-journals

Sl. No.	Language	No. of journals
1	English	73
2	Portuguese	1
3	Russian	1
4	Spanish	2
5	Turkey	1
6	In two languages	18
7	In three languages	3
8	In four languages	1
	Total	100

Table-6 depicts the language-wise distribution of open access journals. From the table it can be noted that 73 journals are published in English Language, 18 journals are published in two languages and only 1 journal is published in four languages.

Table-7: Analysis of subject headings of e-journals

Sl. No.	Subject Heading	No. of e-journals
1.	Biochemistry	9
2.	Biology	11
3.	Chemical Engineering	1
4.	Chemistry (General)	81
5.	Computer Science	1
6.	Earth Sciences	2
7.	Environmental Sciences	3
8.	General and Civil Engineering	2
9.	Geology	2
10.	History	2
11.	Meteorology and Climatology	2
12.	Optics and Lights	1
13.	Philosophy	1
14.	Physics (General)	5
15.	Therapeutics	1

Table-7 shows the interdisciplinary scope of the e-journals in Chemistry. These e-journals can also be used for reference in various subject disciplines such as Biochemistry, Biology, Chemical Engineering, Computer Science and so on. Out of 100 e-journals 81 e-journals are published exclusively on General Chemistry, 11 e-journals are useful for Biology scholars and 9 e-journals are useful for Biochemistry researchers.

7. Findings and Conclusion

From the study it is found that most of the e-journals i.e. 24 are published from USA and India take the second place in open access publications by publishing 11 open access e-journals. English is the most commonly used communication language which is used by 73

e-journals out of 100. It is also observed that General Chemistry e-journals are interdisciplinary in nature.

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Open Source Software - A Gift for Library and Information Science Functions and Activities: Some Observations

Suresha GP **Shivarama J**

Abstract

The proprietary or commercial software company's products has given rise huge expenditure on licensing fee, growth of gray market in pirated software, troublesome environment in local software industries and most importantly discouraged innovation in the software industry at global level. In this background a development, which is attracting the interest, is the freedom of research and development offered by Open Source Software (OSS). In this article an attempt was made to explain the conceptual framework of OSS and delineated OSS rights and requirement in the networked environment. The authors of this paper personally visited and observed various open source websites to know the features and functionality of various OSS software for library functions and activities such as library automation, content management, digital library, e-learning, and design and development of institutional repositories.

Keywords: Open Source Software (OSS), Library automation, CMS, Digital library

1. Introduction

OSS has grown tremendously in scope and popularity over the last several years, and is now in widespread use. The growth of OSS has gained the attention of research librarians and created new opportunities for libraries. OSS can benefit libraries by lowering initial and ongoing costs, eliminating vendor lock-in, and allowing for greater flexibility. In the phrase *open source, source* refers to source code, the human-readable computer code which is the origin, or source, of the computer application. *Open* refers to the terms of access to that computer source code. So *OSS* is software for which the source code is freely available. The most important aspect of the open source movement is the participation of users. When a user or users what a feature or bug fix for a program, they have traditionally been at the mercy of the software vendor. However, with open source they can modify the program to their own needs or fix what is broken. Many users will help develop the program for free, simply to improve the product and benefit the community. OSS is any software whose code is available for users to look at and modify freely. All Open Source projects have an owner, all Open Source projects are governed by some type of license agreement: GPL, BSD, etc

The term **'software'** refers to two different but related things:

- ***Source code:*** a set of human readable and understandable instructions that comprise the 'recipe' from which an executable program can be made
- ***Object code***: the actual executable program which is compiled of machine readable source code. It is fed into a computer's microprocessor to perform various operations.

2. Open Source Software: A conceptual framework

"Open Source Software" (OSS) is a marketing name for Free Software, coined in Feb 1998 as an attempt to overcome the confusion over the word "free" in the English language. Open Source refers to the fact that the source code of the software is open to and for the world to take, to modify and to reuse. Open Source Software, as used in this article, refers to software distributed in source form which can be freely modified and redistributed, i.e. Open Source Software is freely modifiable and redistributable software. More precisely, it refers to four kinds of freedom, for the users of the software:

- The freedom to run the program, for any purpose,
- The freedom to study how the program works, and adapt it to users' needs. Access to the source code is a precondition for this.
- The freedom to redistribute copies so one can help another.
- The freedom to improve the program, and release the improvements to the public, so that the whole community can get the benefits.

The word 'open' never refers to freedom. However, this author has no intention to discuss the differences of these two terms. OSS is copyrighted and distributed with General Public License (GPL) terms to design to ensure that the source code will always be available.

3. Open Source Software and Rights

These rights fall into three broad categories:

1. **Rights to use without discrimination:** Unlike commercial software, OSS may be used for any purpose, by anyone, at any time. For example, the same OSS used to run an academic website can also be used to run an e-commerce business. There are no annual license fees, restrictions on the numbers of users or systems, restrictions for noncommercial use, restriction to a particular country, expiration-dates, or other artificial limits on use.
2. **Full rights to create derived works:** OSS not only permits one use the software, but permits one to create new software from it.
   - ***Source Code Availability.*** The source code for the software is made on the same terms as the binaries used to run it.
   - ***Free modification and redistribution.*** Consumers not only have the right to examine the source, but to freely modify and redistribute modified (or unmodified) copies.
   - ***Integrity of authorship.*** OSS may require that previous authors be acknowledged, and that modifications be clearly labeled, and separately packaged and named from the original software when redistributed. This maintains integrity of software.
3. **No trap:** Modified copies of OSS must be redistributable under the same license as the original. The license cannot be restricted to a single product, and it must not restrict the distribution of other independently licensed software.

4. Open Source Software Requirement

- **Operating Systems** - Linux (or GNU/Linux), FreeBSD/OpenBSD, NetBSD, GNU/Hurd, etc.
- **Windowing Systems** - The X Window System, XFree86, etc.
- **Desktop Environments** - GNOME, KDE, GNUStep, XFce, etc.
- **Languages** - GNU C/C++ , Perl , Python , Tcl, etc.
- **Web Browsers** - Mozilla (Netscape 6), etc.
- **Server-type software** - Samba, Apache, PhP, Zope, MySQL, PostgreSQL, etc.
- **Office Suites** - Open Office, KOffice, etc.
- **Productivity Applications** - ABIWord, GNU Image Manipulation Program, Dspace, GSDL, KOHA, etc.
- **General Utilities** - GNU Utilities, etc.

5. Open Source Software (OSS) for Libraries

The changing information environment dominated by Internet technologies has given libraries new choices in meeting the information needs of their users. Libraries are taking up OSS as a way to reduce the costs of expensive commercial products and as a viable alternative to the often expensive proprietary library automation systems. The benefits of OSS can potentially reduce costs, give users more control and increase software performance (Courant & Griffiths, 2006). OSS certainly appears to give libraries more control over technological choices and an ability- to bring library values to software. Mukhopadhaya (2005) identified the advantages in the use of open source software for library automation in India.

- OSS is an economical alternative to libraries' reliance upon commercially supplied software.
- OSS is essential if libraries are to develop software and systems that meet their patrons' needs.
- OSS ensures that library systems and online services will be more functional for patrons.
- OSS democratizes the use of software applications in libraries irrespective of the type or size of the library.

The Some new innovative Library Software's

Library Management Software's	
Software's	**Specialized Feature**
ADLIB Information System	Specializes in library management systems and software; archive and records management systems; document management and control systems; membership systems and image database applications
Auto-Graphics, Inc	Suppliers of library automation software, electronic content management, and electronic publishing solutions, including thelibrarycard.net

Bailey Solution Ltd	Developers of PenLib, KnowAll, Konduct and PenWeb integrated library management systems, built on Microsoft Access and SQL.
BookWhere	Software package allows the user to search hundreds of library databases via the Internet and capture MARC records using the Z39.50 protocol. Free evaluation is available
Book personal Lib management	A book is an open-source personal library management tool that runs on Mac OSX.
CDS/ISIS database Software	Micro CDS/ISIS is an advanced non-numerical information storage and retrieval software developed by UNESCO since 1985
ElvisDL	ElvisDL is an open-source e-Library with semantics based on a J2EE platform and XML database.
ExLibris	Developers of integrated library system software
Geac Library Solutions	Library management software from Vubis.
IS Oxford	Information about the Heritage Library Management System.
Libdata.com	Fully Internet based library automation system. Does not require any software installation as it works with your browser across the Internet. Mainly for Churches and small private schools. Demonstration site.
Libero	Library management system is used in public and corporate libraries, academic as well as government libraries. Australian-owned and designed.
Libertoy	Toy library management system designed to manage users, collections, loans, renewals, fines, accounting, statistics and includes bar code support.
MC2 Systems	Low cost library management solutions for every type of library
Minisis	Database management software. Product information and support
Talis	Provides library management systems to the UK and Ireland. Includes information about the company, its products and services, and user support.
Library Automation Software's	
Software's	**Specialized Feature**
Access-It software Ltd	Library automation program designed for schools and small businesses with both Macintosh and Windows platforms.
Acumen & Scope e-Library	Functional Solutions is WEB based Library Automation software - z39.50 compliant, RFID enabled.
Andrew Osborne's Lib auto. pages	Offering information to systems librarians on a variety of library systems and vendors.
Book System, Inc	Library automation software developer, library cataloging services, data conversion, MARC record support, z39.50 modules, and other library automation software add-ons.
EOS International Lib. Automation	Library automation software and knowledge management for libraries.

Endeavor Info. System, Inc	Developers of Voyager integrated library systems and other library automation products.
Follett Software	Offers library automation software, library cataloging services, union catalog, data conversion, MARC records, Winnebago Spectrum, Athena, reading programs, scanners, WebManager.
Knowledge Integration Ltd.	Knowledge Integration Ltd. create and maintain open-source software for information and resource sharing--particularly those found in the library automation and public information domains. Their projects include OpenHarvest, OpenRequest, OAIFeeder, and OpenQuestions.
LibSuite	Libsuite is a Application Service Provider for Library Automation software LibSuite.
Library Concepts	Providers of PC Card Catalog, a library automation system for smaller libraries. Product information and demo download
LibraryCom	Online library automation service. With a standard Web browser one can search, catalog, or circulate from any location on the Internet. Data is always available, backed up and secure.
New Generation Technologies Inc.	Library automation software that includes catalog, circulation, OPAC, MARC, and report generator.
Perpustakaan Library Software	For school, company, and institutional libraries. With cataloging, circulation, past-due tracking, and bar-coding.
Pustaka	An automation system for managing library and resource centre.
SirsiDynix	Library automation, archives, and Z39.50 resources software.
Surpass Software	Offers library automation products and services that can be used either as a fully-integrated automation package,
The Library Corporation (TLC)	Native Windows NT fully integrated library automation system. Cost effective access to current information technology.
Autolib LibraryIMS	Web-enabled library systems, based on XML technology, that operate over an intranet and/or the internet. Ideal for educational, corporate or highly specialized resource centers.
Consortia base Library software's	
Software's	**Specialized Feature**
Bibliomodo Inc	Vendor that provides software for digital collections for library consortia
Cadomel Lib Management System	UK supplier of library automation systems for school and other small libraries, including barcode labels and scanners.
Church Related Online Software Systems (CROSS)	Library 1.7 online cataloging automation software for books, videos, tapes, CDs; and Inventory 1.3 asset management and tracking for clergy, churches, schools, businesses, and personal applications. Windows 3.x/9x/NT.
Data Research Association, Inc	DRA provides library automation systems, electronic networking services and other related services for libraries

Innovative Interfaces Inc.	Information about Millennium, a Web and Java library system.
KLAS, Keystone Library Automation System	Provides full service software, hardware, and support solutions for library automation. KLAS is a fully integrated solution applicable to many types of libraries, particularly those serving geographically diverse patron communities
Library Automation Management	Provides a combination of consulting, implementation, and integration services specifically for the small and medium-sized school, special, or public library.
Lib.Technology Guides	Guides to library automation in a number of specialized categories.
LibraryTools.com	Makers of LC Easy and Dewey Easy, library skills training tutorials which run on Mac OS X and all Windows versions above 3.1.
Mandarin Library Automation, Inc.	Software developer and hardware supplier offering Mandarin M3, authority control, web gateway, Z39.50 modules, serials and acquisitions, barcodes, web hosting, union catalog, and data conversion
Open Source Schools	Schoolforge's mission is to unify independent organizations that advocate, use, and develop open resources for primary and secondary education
Open Source Software and Libraries Bibliography	Compiled by Brenda Chawner. Includes announcements, journal articles, web documents, and articles that describe specific open source applications used in libraries, in particular dSpace, Koha, Greenstone, and MyLibrary.
OpenSiteSearch	A java-based Z39.50 portal system used for libraries to build search interfaces to one or more Z39.50 targets, such as library catalogue Z39.50 servers, vendor database/ejournal Z39.50 servers, or local digital collections
Public-Library.com	Offers several software applications marketed at libraries
ResourceMate	Library cataloging, searching, and circulation software for churches and schools.
VTLS, Inc.	Produces integrated solutions for managing library collections and creating digital libraries.
Lending Library Software	Library automation software information including features and pricing.
Remote User Authentication in Libraries	Links to reports on remote authentication in libraries, to software that supports authentication and to user authentication in general. Maintained by Steve Hunt, Santa Monica College Library.
Open Source Software's	
Software's	**Specialized Feature**
Evergreen	Open-source ILS currently being developed by the Georgia Public Library Service. Includes background information about the project, relevant links, a regularly updated progress weblog,

	documentation, and links to mailing lists and downloads.
Fedora	Fedora is a general-purpose, open-source digital object repository system.
Greenstone	Greenstone is a suite of open-source software for building and distributing digital library collections.
Katipo Communications	Katipo develops and supports open-source applications for libraries, notably Koha ILS and Kea Content Management.
Open DLib	An extensible software toolkit that can be used to create a digital library by either loading or harvesting the content to be managed
OpenBiblio	OpenBiblio is an open-source ILS containing OPAC, circulation, cataloging, and staff administration functionality.
Ringgold	Electronic journal covering library automation, software, library computerization, text retrieval, electronic publishing and digital libraries reviews
Tapir for DSpace	The Theses Alive Plug-in for Institutional Repositories developed at Edinburgh University Library (EUL) provides the ability within DSpace to operate a supervised authoring facility.
Virtual Data Center (VDC)	VDC provides a complete open-source, digital library system for the management, dissemination, exchange, and citation of virtual collections of quantitative data.
iBookshelf	iBookshelf is an open-source application for cataloging your book collection and designing bookshelves based on this data.

6. Conclusion

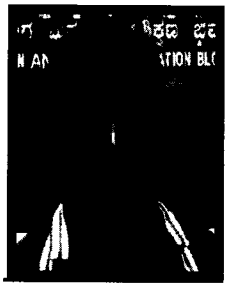
Developments m electronic and communication technology have affected every profession in the past decades and libraries are no exception. Libraries of all types are challenged to provide greater information access and improved levels of service, while coping with the pace of technological change and ever-increasing budget pressure. Faced with the increased commodification of information resources and services and the encroaching dominant logics of business/corporate culture, today's libraries are in search of innovative technological solutions to provide greater information access and improved levels of service, while coping with the pace of technological change and ever-increasing budget pressure. In response to this situation, a growing segment of the library profession is promoting Open Source Software.

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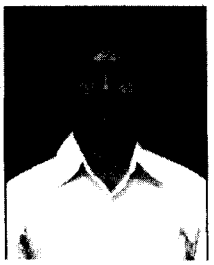
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Resources, Facilities and Services Available at Library of Mangalore Refinery Petrochemical Limited (MRPL), Mangalore: A Case Study

Ravi K B Yashodamma A Kannappanavar B U

Abstract

The MRPL library has a good collection of books and the users are very much satisfied about this. This facility is able to meet the requirements of the knowledge seeking users, which shall be a successful endeavourer in leading the users towards the path of light of knowledge. The present good collection needs to be enriched further by the acquisition of sufficient number of multiple copies of text books, back volumes of journals etc. It may be noted that the present procedure of acquiring book could be improved by taking suggestions formally users. The findings have been reported that open access system, reprographic services, full time librarian and services of employers of MRPL and many more.

Keywords: Library collection, facilities, services, building, Library resources

1. Introduction

Mangalore Refinery Petrochemical Limited (MRPL) is the latest entrant in India's Oil Refining Industry. The 3 million tons per annum/mmtpa refinery, situated near Mangalore in the southern coastal state of Karnataka is the first grassroots refinery to come up in the country in the last fifteen years. It is also the first refinery to be set up as a joint venture between a public sector company and private sector group. MRPL is jointly promoted by Hindustan Petroleum Corporation Limited (HPCL) and Indian Rayon and Industries Ltd., belonging to the Aditya Birla Group. HPCL is India's second largest refining corporation with two operating refineries at Mumbai (in the western state of Maharashtra) and Vishankapatnam (in the southern state of Andra Pradesh) both coastal based.

2. Library Collections

The collection comprises books, reports, journals, directories both internal an external technical manuals, drawings, maps specifications and standards, audiovisual materials and special collections like conference reports, documents etc. The overall collection in MRPL is only about 20,252. Hence the library space is also small. It is only extension of administrative building. As per as user is concern, the MRPL library is basically a collection of technical materials so itself 55% of total users are technical staff and 20% are Administrative staff and 25% are account staff.

Library Collection

S.No	Materials	Nos.
a	Books	3000
b	General Periodicals	3
c	Subject Periodicals	27
d	Reports	100
e	CD-ROM	200
f	Engineering Drawings	3,00,000

2.1 Use of Library

The ultimate test of quality of library collection is the extent an mode of its use. Past use is good indicator of present use; a present use may well be a good predictor of future use. All these factors are will depends on the user's frequent visit to the library.

Frequency of visit

Frequency	No. of Users	%
Daily	10	25%
Once in a Week	41	51.25%
Twice in a week	23	28.75%
Occasionally	6	7.5%

From the above table it is clear that only 25% of the total members come to MRPL library daily and the members who come daily are mostly trainees who come for their study purpose. Most of the users visit library only once or twice a week and minority only occasionally.

2.1. Extent to which the MRPL fulfills your study/reference requirements

User is the most important component of the library without which there is no meaning to existence of the library. Such users satisfaction is very much essential factor for an each an every library. The following table shows the respondents opinion regarding the extent to which the library satisfies their requirements.

Satisfaction with collection

Satisfaction	No. of Users	%
Below 25%	-	-
Between 25% & 50%	30	37.5%
Between 50% & 75%	40	50%
Above 75%	10	25%

It is evident from the above table that library fulfils users requirements in a most significant way. About 50% users feel that the library fulfils their requirements at the range of 50% and 75%. The responses of 37.5% users are that the extent is 25% and 50%. The responses of 25% users are of opinion that the library fulfils their requirements above 75%.

2.2. Purpose of users visit to the library

Purpose of visit

Purpose	No. of Users	%
Borrowing books for home use only	13	16.25%
Reference in the library	47	58.75%
Both	20	25%

The above table reveals that majority of the respondents visits the library for the purpose to use the books reference. This indicated by their responses that is 58.75% of user visit the library for the purpose to the books for reference. A small number of respondents visit the library to borrow books for home use only that is 16.25%. The remaining respondents visit the library for the purpose of both.

2.3. Borrowing/Loan services available in MRPL

Borrowing/Loan service is one of the important services which should be provided by the library to serve it users better

Adequacy of borrowing loan services

Opinion	No. of Users	%
Adequate	26	30%
Moderately adequate	44	55%
Inadequate	10	25%

The above table shows that the borrowing loan services is moderately adequate for 55% of users an adequate for 30% of users. The numbers of users who consider it to be inadequate are very less that is 25%.

3. Library Collection

3.1. Adequacy of Journals/Periodicals

Adequacy of Periodicals

Opinion	No. of Users	%
Yes	64	80%
No	16	20%

The above table reveals that a big percentage of respondents i.e. 80% of users feel that the periodicals are adequate for their study. A small portion i.e. 20% of users expressed their opinion regarding the inadequacy of periodicals.

3.2. Periodicals satisfying the user's requirement in MRPL

Overall availability of periodicals

Opinion	No. of Users	%
Adequate	46	57.5%
Moderately adequate	32	40%
Inadequate	2	2.5%

The above table indicates that 57.5% of the users opinion that the periodicals available in the library is adequate for them 40% of the users have the opinion that they are moderately adequate an 2.5% of users have opinion that they are inadequate for them.

3.3. Availability of periodical in time

Availability of Periodicals in time

Opinion	No. of Users	%
Yes	66	82.5%
No	14	17.5%

The above table reveals that 82.5% of users have expressed their opinion regarding the availability of current issues of the periodicals, in time in the library. Further about 17.5% of users have complained about the non-availability of current issues of periodicals in time in the library.

3.4. User approach to documents

Users approach to the documents in the Library

Category	Users	%
By consulting card catalogue	-	-
By consulting library staff	36	45%
By consulting abstracting an indexing periodicals	15	18.75%
By searching in computer	29	36.75%

From the library survey it is clear that 45% that is more than half of MRPL users take librarians help in locating their documents. Then 36.25% that of users using computer an 18.75% of users refer abstracting and indexing to find their journal.

3.5. Collection of Library

User's opinion about collection in the Library

Opinion	Users No	%
Good	40	50%
Fair	38	47.5%
Poor	2	2.5%

The above table shows that more than half 50% of users find the library collection good and 47.5% of the total users find it good there are only very minorities 2.5%. Who also think that MRPL collection very poor and that does not satisfy their needs.

3.6. Adequacy of Library resources

MRPL Resources

Library Resource	Adequate No	%	Moderately Adequate No	%	Inadequate No	%
Subject book	55	68.75%	21	26.25%	4	5%
Journals	43	53.75%	31	38.75%	6	7.5%
Reports	61	76.25%	13	16.25%	6	7.5%
Magazines	23	28.75%	40	50%	17	21.25%
Other materials viz., map	69	73.75%	19	23.75%	2	2.5%

The analysis of the responses furnished by respondents shows that subject books are adequate 68.75% users and moderately for 26.25% and inadequate for 5% users of the library. Journals are adequate for 53.75% moderately adequate for 38.75% and inadequate for 7.5% of users. Reports are adequate for 76.25%, moderately adequate for 16.25% and inadequate for 7.5% of users. Magazines are adequate for 28.75%, moderately adequate for 40% an inadequate 21.25%. Though there are much collection of maps, charts etc it is understandable from table that majority that is 73.75% of users find is sufficient and 23.75%find it moderately sufficient and only a very minority 2.5% users say that it is inadequate which can be neglected because map collection is rather insignificant in MRPL.

4. Library Services

4.1 Opinion about the Services Offered By the MRPL Library

Opinion about service

Service	Satisfactory	%	Not Satisfactory	%
Book lending	74	92.5%	6	75%
Reference services	67	83.75%	13	16.25%
Enquiries	50	62.5%	30	37.5%
Retrieval of information	53	66.25%	27	33.75%
Reader guidance	70	87.5%	10	12.25%
New additional list	63	78.75%	17	21.25%
Reminder	59	73.75%	21	26.25%

The above table reveals that majority of the users that is 92.5% of users are satisfied with book lending service. Majority of the users 75% of user are also satisfied with reference service. There is no news paper clipping service is provided by the MRPL.

4.1. Opinion about the staff

Opinion about staff

Satisfaction	Users	%
Most co-operative	63	78.75%
Co-operative	13	16.25%
Moderately co-operative	4	5%
Least co-operative	-	-

From the above table it is clear that majority of the users are very satisfied and find their library staff very helpful and most co-operative in giving their services. Further 16.25% of users were of the opinion that library staffs are co-operative. Only 5% of users were of the opinion that library staffs are most moderately co-operative.

5. Library Facilities

Working Hours

Convenience	No. of Users	%
Convenient	78	97.5%
Non-convenient	2	2.5%

From the above table it is clear that majority of the users find the MRPL timing suitable and convenient for their use.

5.1. User's opinion about library facilities

MRPL Library facilities

Facilities	Satisfactory	%	Unsatisfactory	%
Space of reading	70	87.5%	10	12.5%
Lighting	74	92.5%	6	7.5%
Cleanliness	79	98.75%	1	1.25%
Furniture	76	95%	4	5%
Ventilation	68	85%	12	15%
Drinking water	67	83.75%	13	16.25%

It is evident from the table that MRPL does not have drinking water facility and almost all the employees are dissatisfied with it. But those the users are satisfied with the space for reading, lighting, cleanliness, furniture and facilities provided by MRPL.

5.2. Opinion about MRPL Library Furniture

MRPL Library furniture

Furniture	Satisfactory	%	Unsatisfactory	%
Table	73	91.25%	7	8.75%
Chairs	60	75%	20	25%

It is evident from the table the majority of the users are comfortable with the furniture in the library for their study purpose that is 91.25% of users with regard to reading table and 75% of users with regard to chairs.

5.3. Library Orientation Programme

Need of orientation programme

Opinion	Users No	%
Yes	62	77.5%
No	18	22.5%

It is evident from the table that, about 77.5% of users expressed their opinion that they need orientation regarding the use of the library. Only 22.5% of users expressed their opinion that they do not need orientation regarding the use of the library.

6. Major Findings of The Study

- The MRPL was established 1991. The organization is managed by P.S.U and it is a government institution.
- The library is headed by one full time librarian.
- The central library serves employees of MRPL.
- About 30% of users visit the library daily. Daily use of library is more among engineered compared to other employees.
- The library follows open access system.
- The library does not have any library committee.
- The library does not possess an independent building.
- Periodicals are the primary sources information. The study has revealed that the industrial library subscribes for adequate number of periodicals.
- It is observed that the working hours of the library is convenient to most of the readers.
- It is found, that the library had provide reprographic service.
- Though now a days much information is coming in the form of non-book materials the users has shown that the library possess non-book materials these are adequate.
- The library is well equipped with benches and tables.
- Most of the users are satisfied with the assistance given by the library staff.
- The library does not possess a spacious reading room.
- Fans, ventilation fan, lightings facilities and other equipment's are adequate.
- The library provides the title announcement service as current awareness service.

7. Suggestions

- There should be separate building for library. The structure of the building should be having provision to accommodate the future expansion.
- Newspaper clipping service should be provided.
- The metal racks should be properly painted, dusted and maintained neatly.
- A better organization and proper indexing of materials would facilitate users to get speedy and efficient service.
- The sufficient quantity of equipments and other requirements should be provided.
- Borrower's tickets should be increased in number.
- The collection of the library should be increased and updated reference collection should be maintained.
- The users suggested that, the library should be provided with drinking water facility and toilet facility.
- More space is required in the library.
- Majority of users are of opinion that the library staffs are co-operative, but they suggest that library staff should be trained in new technologies of the information for easy to handle with users.

- Most of the users are of opinion that the current issues periodicals are not made available in time in time in the library. They suggest more number of foreign periodicals on related discipline should be subscribed by the library.

8. Conclusion

The MRPL library has a good collection of books and the users are very much satisfied about this. This facility is able to meet the requirements of the knowledge seeking users, which shall be a successful endeavourer in leading the users towards the path of light of knowledge. The present good collection needs to be enriched further by the acquisition of sufficient number of multiple copies of text books, back volumes of journals etc. It may be noted that the present procedure of acquiring book could be improved by taking suggestions formally users. Latest editions of books should be made available as soon as possible.

Finally, it can be concluded that the drawbacks of library organizational activities that are found from the present survey should be reviewed by the host organization and try to overcome with these the necessary possible efforts should be taken by both the management and the librarian in this regard.

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The above table shows that the borrowing loan services is moderately adequate for 55% of users an adequate for 30% of users. The numbers of users who consider it to be inadequate are very less that is 25%.

3. Library Collection

3.1. Adequacy of Journals/Periodicals

Adequacy of Periodicals

Opinion	No. of Users	%
Yes	64	80%
No	16	20%

The above table reveals that a big percentage of respondents i.e. 80% of users feel that the periodicals are adequate for their study. A small portion i.e. 20% of users expressed their opinion regarding the inadequacy of periodicals.

3.2. Periodicals satisfying the user's requirement in MRPL

Overall availability of periodicals

Opinion	No. of Users	%
Adequate	46	57.5%
Moderately adequate	32	40%
Inadequate	2	2.5%

The above table indicates that 57.5% of the users opinion that the periodicals available in the library is adequate for them 40% of the users have the opinion that they are moderately adequate an 2.5% of users have opinion that they are inadequate for them.

3.3. Availability of periodical in time

Availability of Periodicals in time

Opinion	No. of Users	%
Yes	66	82.5%
No	14	17.5%

The above table reveals that 82.5% of users have expressed their opinion regarding the availability of current issues of the periodicals, in time in the library. Further about 17.5% of users have complained about the non-availability of current issues of periodicals in time in the library.

3.4. User approach to documents

Users approach to the documents in the Library

Category	Users	%
By consulting card catalogue	-	-
By consulting library staff	36	45%
By consulting abstracting an indexing periodicals	15	18.75%
By searching in computer	29	36.75%

From the library survey it is clear that 45% that is more than half of MRPL users take librarians help in locating their documents. Then 36.25% that of users using computer an 18.75% of users refer abstracting and indexing to find their journal.

3.5. Collection of Library

User's opinion about collection in the Library

Opinion	Users No	%
Good	40	50%
Fair	38	47.5%
Poor	2	2.5%

The above table shows that more than half 50% of users find the library collection good and 47.5% of the total users find it good there are only very minorities 2.5%. Who also think that MRPL collection very poor and that does not satisfy their needs.

3.6. Adequacy of Library resources

MRPL Resources

Library Resource	Adequate No	%	Moderately Adequate No	%	Inadequate No	%
Subject book	55	68.75%	21	26.25%	4	5%
Journals	43	53.75%	31	38.75%	6	7.5%
Reports	61	76.25%	13	16.25%	6	7.5%
Magazines	23	28.75%	40	50%	17	21.25%
Other materials viz., map	69	73.75%	19	23.75%	2	2.5%

The analysis of the responses furnished by respondents shows that subject books are adequate 68.75% users and moderately for 26.25% and inadequate for 5% users of the library. Journals are adequate for 53.75% moderately adequate for 38.75% and inadequate for 7.5% of users. Reports are adequate for 76.25%, moderately adequate for 16.25% and inadequate for 7.5% of users. Magazines are adequate for 28.75%, moderately adequate for 40% an inadequate 21.25%. Though there are much collection of maps, charts etc it is understandable from table that majority that is 73.75% of users find is sufficient and 23.75%find it moderately sufficient and only a very minority 2.5% users say that it is inadequate which can be neglected because map collection is rather insignificant in MRPL.

4. Library Services

4.1 Opinion about the Services Offered By the MRPL Library

Opinion about service

Service	Satisfactory	%	Not Satisfactory	%
Book lending	74	92.5%	6	75%
Reference services	67	83.75%	13	16.25%
Enquiries	50	62.5%	30	37.5%
Retrieval of information	53	66.25%	27	33.75%
Reader guidance	70	87.5%	10	12.25%
New additional list	63	78.75%	17	21.25%
Reminder	59	73.75%	21	26.25%

The above table reveals that majority of the users that is 92.5% of users are satisfied with book lending service. Majority of the users 75% of user are also satisfied with reference service. There is no news paper clipping service is provided by the MRPL.

4.1. Opinion about the staff

Opinion about staff

Satisfaction	Users	%
Most co-operative	63	78.75%
Co-operative	13	16.25%
Moderately co-operative	4	5%
Least co-operative	-	-

From the above table it is clear that majority of the users are very satisfied and find their library staff very helpful and most co-operative in giving their services. Further 16.25% of users were of the opinion that library staffs are co-operative. Only 5% of users were of the opinion that library staffs are most moderately co-operative.

5. Library Facilities

Working Hours

Convenience	No. of Users	%
Convenient	78	97.5%
Non-convenient	2	2.5%

From the above table it is clear that majority of the users find the MRPL timing suitable and convenient for their use.

5.1. User's opinion about library facilities

MRPL Library facilities

Facilities	Satisfactory	%	Unsatisfactory	%
Space of reading	70	87.5%	10	12.5%
Lighting	74	92.5%	6	7.5%
Cleanliness	79	98.75%	1	1.25%
Furniture	76	95%	4	5%
Ventilation	68	85%	12	15%
Drinking water	67	83.75%	13	16.25%

It is evident from the table that MRPL does not have drinking water facility and almost all the employees are dissatisfied with it. But those the users are satisfied with the space for reading, lighting, cleanliness, furniture and facilities provided by MRPL.

5.2. Opinion about MRPL Library Furniture

MRPL Library furniture

Furniture	Satisfactory	%	Unsatisfactory	%
Table	73	91.25%	7	8.75%
Chairs	60	75%	20	25%

It is evident from the table the majority of the users are comfortable with the furniture in the library for their study purpose that is 91.25% of users with regard to reading table and 75% of users with regard to chairs.

5.3. Library Orientation Programme

Need of orientation programme

Opinion	Users No	%
Yes	62	77.5%
No	18	22.5%

It is evident from the table that, about 77.5% of users expressed their opinion that they need orientation regarding the use of the library. Only 22.5% of users expressed their opinion that they do not need orientation regarding the use of the library.

6. Major Findings of The Study

- The MRPL was established 1991. The organization is managed by P.S.U and it is a government institution.
- The library is headed by one full time librarian.
- The central library serves employees of MRPL.
- About 30% of users visit the library daily. Daily use of library is more among engineered compared to other employees.
- The library follows open access system.
- The library does not have any library committee.
- The library does not possess an independent building.
- Periodicals are the primary sources information. The study has revealed that the industrial library subscribes for adequate number of periodicals.
- It is observed that the working hours of the library is convenient to most of the readers.
- It is found, that the library had provide reprographic service.
- Though now a days much information is coming in the form of non-book materials the users has shown that the library possess non-book materials these are adequate.
- The library is well equipped with benches and tables.
- Most of the users are satisfied with the assistance given by the library staff.
- The library does not possess a spacious reading room.
- Fans, ventilation fan, lightings facilities and other equipment's are adequate.
- The library provides the title announcement service as current awareness service.

7. Suggestions

- There should be separate building for library. The structure of the building should be having provision to accommodate the future expansion.
- Newspaper clipping service should be provided.
- The metal racks should be properly painted, dusted and maintained neatly.
- A better organization and proper indexing of materials would facilitate users to get speedy and efficient service.
- The sufficient quantity of equipments and other requirements should be provided.
- Borrower's tickets should be increased in number.
- The collection of the library should be increased and updated reference collection should be maintained.
- The users suggested that, the library should be provided with drinking water facility and toilet facility.
- More space is required in the library.
- Majority of users are of opinion that the library staffs are co-operative, but they suggest that library staff should be trained in new technologies of the information for easy to handle with users.

- Most of the users are of opinion that the current issues periodicals are not made available in time in time in the library. They suggest more number of foreign periodicals on related discipline should be subscribed by the library.

8. Conclusion

The MRPL library has a good collection of books and the users are very much satisfied about this. This facility is able to meet the requirements of the knowledge seeking users, which shall be a successful endeavourer in leading the users towards the path of light of knowledge. The present good collection needs to be enriched further by the acquisition of sufficient number of multiple copies of text books, back volumes of journals etc. It may be noted that the present procedure of acquiring book could be improved by taking suggestions formally users. Latest editions of books should be made available as soon as possible.

Finally, it can be concluded that the drawbacks of library organizational activities that are found from the present survey should be reviewed by the host organization and try to overcome with these the necessary possible efforts should be taken by both the management and the librarian in this regard.

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Role of Institutional Repositories and ETDs in Teaching, Learning and Research

Khaisar M Khan **Pooja R**

Abstract

An Institutional Repository (IR) consists of formally organized and managed collections of digital content generated by staff and students at an institution. The world's universities, museums, governments, and other organizations house treasures that have been hidden in archives, basements, print formats, and a variety of storage devices. These treasures include scientific, technological, cultural, original and historical materials generally unavailable to searchers and the public. Institutional repositories are now being created to manage, preserve, and maintain the digital assets, intellectual output, and histories of institutions. Librarians are taking leadership roles in planning and building these repositories, fulfilling their roles as experts in collecting, describing, preserving, and providing stewardship for documents and digital information. Establishing an institutional repository enables a university to publish its research and teaching programs by enabling access to the work of its staff and students. The academic work of an institution can be presented in one place rather than just spread amongst hundreds of journals, so increasing visibility and prestige. The quality of a university's academic output forms an effective advertisement for the institution, attracting external revenue streams, new faculty, and students. Indian universities play a major role in generation and dissemination of knowledge by conducting research works and producing Ph D theses as a unique type of information sources. A growing number of institutions are initiating new programs in electronic theses and dissertations (ETDs). This paper gives a brief description about Institutional Repositories, software used for IR, advantages and disadvantages of IR and the ETDs, their uses and the role of INFLIBNET in ETDs.

Keywords: Institutional repository, Open access, Copyright, Scholarly publishing, Intranet, ETDs, INFLIBNET

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Scholarly Communications through Institutional Repository: Issues and Challenges

Roopa E **Krishnamurthy M**

Abstract

The long-term preservation of information in digital form is one of the most important problems faced by the cultural heritage professions in the early twenty first century. This paper is reviewing of recent development relating to digital preservation of metadata. It introduces digital preservation problems and notes the importance of metadata in Institutional Repositories. The creation of metadata for digital resources is an important part of a digitization and is incorporated in to the projects workflow. In this paper, it will be discussed how essential elements of metadata created to simplify the process of submission and repository management of the program.

1. Introduction

The Open access movement has gained increasing power as the part of global scholarly communication by enabling researcher's access information that is freely available and sharable online. Institutional Repositories (IR s) are practical cost effective and strategic means for institution to build partnership with their faculty to advance scholarly communication. Recent advances in IT have provided new ways of dealing with information in academic libraries. The explosion of the web, the Internet in general has created challenges and has provided huge opportunities for those working at library. It has enabled many countries around the world to develop digital library systems and the open access movement provided researchers and students the ability to read current literature and research outputs.

2. Scholarly Communication

Scholarly communications is the transformation, dissemination and preservation of created knowledge or new knowledge by teachers, researchers and scholars either in print or nonprint form for future endeavors. The scholarly communication may be of two broad categories – formal and informal. Formal scholarly communication includes journals, technical papers, conference proceedings, white papers, research reports etc. Informal scholarly communication includes blogs, wiki, list serves other social software contents which are being increasingly used now a days. Improvements in computing and network technologies, digital data capture techniques, and powerful data mining techniques enables research practices that are highly collaborative, network-based, and data-intensive. These dramatic changes in the technology has helped researcher and scholars to publish or communicate their research work easily in machine readable form/non print form. Machine-readable content has the great advantage of enabling easy, cheap, space saving and fast production, reproduction and dissemination and it is estimated that there is 40% of the knowledge/information is lost during the paper publishing and text mining cycle, over the life cycle of a print document (De Roure D 2010). This revolutionary trend has demanded for scholarly communication system, so building institutional repositories in machine readable format is necessary.

3. Open Source Software

The Open Source Initiative (www://opensource.org) defines open source software not only in terms of the free availability of the source code, but also in the provision for the future use of the code in modification and derived works without discrimination against person or groups or fields of endeavor. The Open Source Initiative is a non-profit corporation formed to educate about and advocate for the benefits of OSS and to build bridges among different constituencies in the open source community. The phrase "OSS" has captivated the popular vocabulary of computer enthusiasts for over 20 years and the open source initiative has become a certificates group to determine which software licenses quality as OSS under a commonly agreed upon definition. The definition for OSS is access to the actual source code, often available under a GNU public license, which allows programmers to alter the software and redistribute it, with the requirement that they make these changes available to other developers (Muir 2005)

4. Digital Library Software

Digital Libraries provide an integrated set of service for capturing, cataloguing, storing, searching, protecting, and retrieving information, which provide a coherent organization and convenient access to typically large amounts of digital information. Developments in information and communication technologies hold great potential for the advancement of knowledge and the good human kind through the open access of scholarly literature. Due to the fast growth of information value, proper description of distributed information is essential for effective information retrieval and filtering. Many proposals have emerged among these institutional repository, which promises to be extremely advantages to scientists and scholars, particularly in the developing world.

5. Institutional Repository

An institutional repository is a relatively new model for storing research output of institute or organization. The application of Institutional repositories provides ways of capturing, storing, indexing, preserving and disseminating digital objects. In its primary role as an institutional repository package this is the intellectual output of institution when such out put is in digital format. This can include, but is not limited to research papers, conference papers, book chapters, datasets, learning objects and E-thesis.

5.1 Benefits with reference to academic Institution

For Institution

- A means of increasing visibility and prestige: as it may be used to support marketing activities to attract high quality staff, students and funding agencies
- A means for the centralization and storage of all types of institutional output, including unpublished literature or preprints
- A supporting tool for learning and teaching
- A mechanism to keep track of and analyse research performance
- Due to a peer review system in place the repository would also lend its academic credibility to start up new journal.

For Authors

- Increased dissemination and impact of scholarship
- Provides longer term accessibility compared to personal website
- Central archiving of the research works
- Feed back and commentary when pre-prints deposited
- Flow of information facilitates in improved decision making and knowledge transfer and creation
- Self archiving is an service to scholarship

5.2 IR Software

The leading software packages, for IT are DSPACE, EPrints and Greenstone. These are available free under open source licenses. According to Lynch(2006) "making a decision can be complex and involves careful thought about factors such as what the repository will contain, how it will be used, the features that are wanted and local technical environment. It is also important to select software with the right features, however even the best software may not have every feature an institution wants".

5.3 DSpace

Dspace is designed to help capture and organize everything produced by faculty an staff-digitized versions of lecture notes, video, papers and data sets-in to an "institutional repository" that will make available to future generations in its original form (M. Krishnamurthy 2006). This can include articles, papers, conference papers, book chapter, database, e-thesis. Database created by Dspace can contain unlimited number of records. The objective was to create a scholarly communication system, which could provide an institutional repository that solves the problem of digital preservation as a central theme.

6. Metadata Representations

The long-term preservation of information in digital form is one of the most important problems faced by the cultural heritage professions in the early twenty first century. According to Hedstorm "digital preservation method and technology necessary to ensure that digital information of capturing value remains accessible and valuable". In technical terms, the successful long term preservation of digital information will be dependent upon organization, identifying and implementing suitable presentation strategies. Collections and services facilitating the acquisition and improvement of cognitive skills for scientific reasoning and it's an important components of Institutional Repositories.

6.1 Metadata

Metadata is structured information that describes, and organizes resources. The easiest way to understand the concept is to think about library catalog card. The card describes it resources listing its title, author, location, and other information. Lynch (2003) describes the function of some of this metadata; with in an archive, metadata accompanies and makes reference to each digital object and provides associated description, structural, administrative, rights management, and other kinds of information.

6.2 Metadata in DSpace

The creation of metadata for digital resources is an important part of a digitization and is incorporated in to the projects workflow. Metadata in Dspace is of three types, such as (a) Descriptive metadata (b) Administrative metadata (c) Structured metadata. Basically it is implementation of the Metadata Encoding and Transmission Standard (METS). It is partially implemented in Dspace. Retrieval is a simple web browser transaction to locate and other display or down load needed files. Qualified Dublin Core metadata assists in the location of files. This concept has been adopted by the many libraries and they undertook the constitution of Institutional Repositories.

Within the database formed in the scope of the concept above, the access is being enabled to the material with different access points such as author name, title, key term and other elements. For this purpose Dublin Core metadata has been developed. There were two options in place for the contribution of the metadata records, first one was the constitution of the description of the records by the authorized person, and the second one was the constitution of the metadata records by the authors. The metadata elements have been transferred automatically from the "submit describe item" from within the Dspace interface and submitted to the Dublin Core (DC) schema. Metadata elements grouped in three classes in DC schema, which facilitates access points related to deposited materials. Therefore, the form ensured that all the records produced contained metadata for the mandatory elements. These include publisher and rights metadata, which have fixed values, and are automatically generated via the DC form and, and title, audience, author/contributor, subject, date, created, date modified, URL, language, type, and format, which require author input. By this way, metadata was using in Dspace to meet the criteria of the OAI-PMH protocol, has been registered to OAI. Submission also entails agreeing to a license that grants the library a non-exclusive right to store, preserve, and distribute the item is retained by the author ore institution (M.Smith) Minimal technical metadata about item is captured during submission, and its automatically generated from the physical file.

DC Metadata Elements

Content Elements	Intellectual Property Elements	Instantiation Elements
Title	Creator	Date
Subject	Publisher	Format
Description	Contributor	Identifier
Type	Rights	Language
Source		
Coverage		
Relation		

6.3 Interoperability Standards

Adoption of an interoperable standards/protocol for metadata has become the de fato standard for metadata harvesting. Open archive initiative has developed such a protocol to facilitate efficient dissemination of repository metadata. This protocol is

known as open access initiative protocol for metadata harvesting or simply OAI-PMH. Under this model, metadata is harvested/ extracted from repositories/data provider by search engines/service provider (Singh et al, 2008). The Open Archives Initiative-Protocol for OAI-PMH compliance is facilitated by Dspace. Apart from OAI-PMH there are other interoperability standards such as Metadata Encoding and Transmission Standard (METS) and Open URL.

6.4 Issues

Despite of the numerous benefits of an IR, there are implications and potential barriers to its success as summarized below (Pickton & Barwick, 2006).

- **Cost**: The initial financial cost was less as open source software adopted for creating IR. Cost towards staff (e.g. time spent drafting policies, developing guidelines, publicising, training, specialist IT consultancy) and hardware was matter of concern.
- **Difficulties in Generating Continent:** There are acknowledged difficulties in generating content especially in the beginning. Mandatory self archiving policies are found good solution but wide implementation was big issue, as faculty members were not ready to accept them and reacted negatively.
- **Sustaining Support and Commitment:** It is difficult to sustain continuous support and commitment form the management and academic staff. Lynch has succinctly described this obstacle. There was need of continuous support from management for the time of providing hardware, uploading Dspace, generating policies to preparing marketing materials.
- **Working Culture Issues:** Contributing content to user generated or self-service sites are perceived time consuming by hard pressed academics. They may be happy to contribute content but reluctant to do it themselves. This necessitates mediated deposit services.
- **Policy Issues:** Experiences suggest that an IR will only function to its capacity when a mandate is in place to populate it. Faculty members were reluctant to accept the policy.
- **Lack of Incentives:** Due to the budget problem incentives was not given to the faculty members for providing content. In the absence of incentive faculties were less motivated to provide even bibliographic details of their academic work as they were aware of incentives that are available in other institutions.
- **Lack of digital rights and acknowledging authorship**: As per Dr. Ramachandran, copyrights and ownership are other issues which obstacle sharing of knowledge intensive scholarly publications. We had to discuss with author and teach them negotiation skills.
- **Time Consuming and Labour Intensive**: In house development of IR is time consuming factor and labour intensive, it demands long term sustained efforts and proper planning, especially while subject indexing the content.
- **Lack of Enthusiasm Among Faculty:** Most faculties do not respond to the invitation to "add content to the IR (Banker and Perciali 2008) often low deposit rates are attributed to a lack of institutional policies and mandatory

requirements in addition to the lack of motivation and low pricing for faculty members and researcher (Chan 2009). IR system is a dead thing where authors post their papers after the fact: after peer review after publication and after they are done with them and faculties do not find IRs appealing. So we had to regularly send reminders to add the content.

- **Publisher's Antagonist Attitude towards IR:** They see IRs has an obstacle and threat to their business and misinterpret them, so they try to hold ownership rights for digitizing and publishing.

6.5 Challenges

Institutional repositories are comparatively new to much of the academic technical education institutions so, putting management and faculty to work toward building scholarly communication system is great challenge. According to Chan et al, 2005 the real challenge is not the technical implementation of the IR but rather the cultural change necessary for it to become embedded and commonplace in the activities and normal behavioral pattern of researchers.

Infrastructure

- **Software Selection**: Among many open source and paid software we had find the best one based on role and future development, technical support and maintenance, customisation and upgrades
- **Hardware**: Maintains of server.

- **Technological Change:** In these days, information technology skills and applications are changing and developing fast. To survive digital libraries need the latest technology. Hence more and more investment is necessary for digital libraries to update their technology.

- **Disaster Recovery:** Data security is the most pressing challenge. In case of any hamper to software or hardware due to natural calamities or accident, we will lose all data. In case of windows version of the software virus is a big threat.
  - Administration of the contents
- Copyright restrictions by publishers
- Implementation of mandatory repository policies
- Handling digital formats
- Open access publication
- Marketing & Advocacy

6.6 Possible Solutions

In order to make IR's more successful and lasting the following are the solutions

- Promotion: More promotion and publicity need to be given about benefits of the IR to faculty ex. separate link for digital library on the main page of the institutions webpage, creating banners for posting it on main areas, highlighting in library news letter and college newsletters or bulletins.
- Strict institutional implementation policy to mandatory deposit: Management play great role to bring out such polices, so it is essential to take management in to confidence for bringing out such policies for the benefit and growth of the institution.

- Addition of online publishing tools to IRs to convince IRs importance to faculties.
- Providing a full range of academic and research support services though IR's.

7. Conclusion

This review of developments in digital preservation metadata has, of necessity, covered a wide range of initiatives. Metadata is expected to play an important role in resource discovery. It can be used to create digital collections ranging from small collection to big collection. Dspace has all the feature that any other IR open source coded software has. Scholarly communications are an important part of academic life, they are considered to be bread and butter of the institutions. It is very essential to collect, organize and preserve scholarly publication for present and future use, thus it satisfies Ranganath's five law of library science.

The main challenge for IRs is staff participation. It is not just enough to create the IR and expect that staff will willingly offer up their time and work to the scholarly communication system. Advocacy and collaboration efforts are central to creating a successful relationship between library/IR staff and faculty.

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The Role of University Libraries in e-learning: A Study with Special Reference to Mahatma Gandhi University Library

Sujatha R **Laila T Abraham** **Jasimuddeen S**

Abstract

A university Library should act as the hub of all activities related to the new system. The faculties and students have started to adopt e-learning as part of their teaching and learning programs. Hence University libraries should cater to their requirements and give support in their academic pursuits. They should become institutional access points for electronic knowledge resources such as online journals and digital collections. This paper covers the different aspects of e-learning, what university libraries can do for promoting e learning, and the e learning facilities provided by Mahatma Gandhi University Library. A user survey has been conducted and the utilisation and user perceptions of e- learning resources in Mahatma Gandhi University Library are outlined.

Keywords: E-learning, Open access, Digital library, E-journal consortium

1. Introduction

We live in the 21st century, the knowledge society. Knowledge is the resource here; the only renewable resource. We find that lifelong learning has becoming a necessity here. Individuals have to remain competitive in their own fields. E-learning has been adopted as a new form of learning irrespective of age and profession and this new learning approach is more flexible than the conventional one. Here the learner is free to choose the place, pace and time of learning. This learning is facilitated and supported through the use of information and communication technology. The University Libraries have a lot to do in promoting E-learning. The librarians should become core players in this new learning process thereby refining their roles as information gateways.

2. Objectives

- Make aware of the importance of e-learning in this knowledge society
- Examine the role of University Libraries in promoting e-learning
- Observe the utility of the e-resources provided by Mahatma Gandhi University
- To make the librarians aware of the importance of e-learning in this knowledge society.

3. Mahatma Gandhi University Library: A Brief Profile

Mahatma Gandhi University Library was established in the year 1989. MGU Library and Information System consist of University Central Library and more than 30 libraries of the departments, schools and study centres existing in different campuses. The library is kept open from 8 am to 8 pm on all working days. It has a fairly good collection of books, journals, and doctoral dissertations and has good infrastructure and is rich in digital resources. The library is a member of the INFLIBNET. Library is fully automated using SOUL software in the year 2000. M.G. University became the first Indian university to adopt

Open Access to make the results of doctoral research in the university transparent to academics worldwide. The most important achievement of MG University Library is the endorsement of Ph.D Theses Archives developed by the University Library. Besides, the Library is a Research Centre on Library and Information Science under Faculty of Social Sciences since 2010.

The Mahatma Gandhi University Library, Kottayam has undertaken and established the following e-learning services and projects in the university Library to promote e-learning among the faculties, research scholars and student communities.

4. Open Access Initiative of MGU: Online Theses Digital Library

Mahatma Gandhi University has hosted Online Theses Digital Library in the web (http://mgutheses.org) on November 9, 2008. This was launched by His Excellence Dr. A P J Abdul Kalam, former President of India. We have conducted R & D on Digital Archiving which helped us to customize some packages for providing web access to our theses collections. Thus Mahatma Gandhi University has become prominent among other Indian Universities to develop official PhD theses Digital Archive and launch it in the Web as Open Access Repository. M G University received worldwide focus for its Open Access Initiatives during 2009. This online theses Digital Library has been selected as one of the very best of Web Resources for education and research by INTUITE, functioning under Government of UK's Joint Information Systems Committee (JISC) and the Arts and Humanities Research Council (AHRC). INTUTE is a consortium of Universities working with a whole host of partners, bringing together the expertise of people and processes through which academic and research resources in the web are evaluated for inclusion in its system. The Software package Nitya Digital Archive is used for developing and hosting the collection. The Software was customized as per the requirement of Mahatma Gandhi University by Beehive DC, a group providing solutions for digital library and content management. It has multi lingual search facility, multi lingual online key board and it satisfies UNICODE standards. Presently it covers English, Malayalam, Hindi, Tamil and Kannada languages. The University also has the credit to be the first signatory with INFLIBNET-UGC on pooling of e-theses.

M G University continued to receive worldwide focus for its Open Access Initiatives and during 2010 itself M G University's site *mgu.theses.org* bagged Government of Kerala's E- Learning Award for creating unique database of all the research theses accessed through internet.

4.1. UGC-Infonet and e-journal consortium

The Mahatma Gandhi University is one of the first fifty Universities to come under the UGC-INFONET Programme. Under this consortia Library has 2 Mbps Leased Line Internet connectivity enabling access to full text of 7000+ electronic journals and 12 various online databases. Elsevier's Science Direct is now accessible through INFONET serving the researchers in science disciplines to satisfy most of their queries. The facility is open to all library members. Forty information access terminals have been arranged for library users to access e-journals and databases. Average users for online journals are 190

per day. M.G. University Library was ranked 16 among the 125 universities to which UGC has endowed with the facility.

4.2. Sci-Finder Scholar

Sci-Finder, the world's leading scientific information resource is subscribed in the library.MGU has become one of the 20 universities and the first in Kerala to provide access to Sci-Finder Scholar (SFS) the world's largest pool of scientific information, which includes numerous mechanisms for retrieving information and also for thousands of knowledge processing applications including laboratory functions. Research Scholars of the university rely much on the best scientific information available through Sci-Finder Scholar with CAS, a division of American Chemical Society. The access cost Rs.57 lakhs annually is met by UGC. Access to Sci-Finder enables at our disposal a cost effective opening to a sea of knowledge already generated in science with powerful knowledge processing e-learning mechanisms that can effectively improve quality and relevance of our research. Sci-Finder Scholar access facility in the university library has helped to enhance the research output in the departments of Mahatma Gandhi University to a greater extent.

4.3. EBSCO Database (ASC)

Mahatma Gandhi University Library is subscribing to EBSCO Database (Academic Search Complete) since May 1, 2010. It indexes about 13000 e-journals of which full text access is provided to about 8000 journals.

4.4. Pro-Quest Abstract and Index (PQDT- A & I)

PQDT- A & I is an online Dissertation and Theses Abstract database subscribed in the library since April 2011. It indexes 2.7 million dissertations and PhD Theses and every year 75000 items are added to it.

4.5. E-Books through Oxford Scholarship Online

Mahatma Gandhi University Library is a subscriber of Oxford Scholarship Online (OSO) books. Perpetual access to 2500 titles are available for reference under seven modules of OSO Products such as Biology, Classical Studies, History, Literature, Philosophy, Physics and Political Science.

The library is also a subscriber to 5 major online encyclopaedias of Taylor & Francis/Routledge. Articles can be downloaded for use by the students and they get a better opportunity for electronic learning of the resources through Oxford Scholarship Online and Routledge encyclopedias.

4.6. Video on Demand (VOD)

An Audio Visual Resource Centre (AVRC) was started in October, 2009 at MGU Library as a central facility in the university with the aim of collecting interactive multimedia, conducting video conferencing/lectures/films etc on subject areas relevant to the curricular needs of the students and academia of MGU. Documentary films are screened on all United Nations' internationally observed days and events in the centre. Book exhibitions are also conducted on the occasion. University Library is planning to introduce VOD so that a large number of e- learners can access the video contents whenever they like.

4.7. CD-ROM and other Online Services

The Library possesses a good collection of CD-ROM databases in all disciplines. Library has a CD-ROM networking facility to search databases in CD-ROM. Services of INFLIBNET Centre and National Centre for Science Information (NCSI) is also used. The Library maintains membership to institutions like DELNET (New Delhi), Indian Institute of Science, Bangalore, IITs, NISCAIR and NCL, Pune. The library has also access to the First Search Services of Ohio College Library Centre (OCLC, USA. About 70 databases are accessible through this.

4.8. Digital Library/ ICT Lab

University library has a Digital Library/ICT Lab where digital learning is provided to the users. Students and Research scholars utilize this lab for conducting searches on Sci-Finder, INFONET consortium, EBSCO, Pro-Quest, E-books under OSO Products & Routledge and E-theses. The Lab is fully functional with 14 computers.

5. Evaluative study

We have conducted a survey among the daily users of the University Library to understand how the facilities provided by MGUL help them for e- learning. The questionnaire method and face-to-face interview were used for data collection. 200 questionnaires have been distributed and 174 users responded. Different variables such as types of members, measure of users of the e resources, types of electronic sources used, adequacy of resources, user's opinion about attitude of Library staff etc. are evaluated. The result of the survey is tabulated below.

Table 1: Types of Members responded

Category	Number
Teaching staff	34
Research scholars	41
P G Students	49
Non teaching staff	27
Short term members	23
Total	**174**

Table 1 shows that out of the 174 respondents, there are 34 teaching staff, 41 research scholars, 49 PG students, 27 non teaching staff, and 23 short term members.

Table 2: Measure of users of e-resources from the Library

Sl. No	Category	Number	%
1	Teaching staff	28	82
2	Research scholars	39	95
3	P G Students	36	73
4	Non teaching staff	16	59
5	Short term members	18	78
Total		**137**	

Table 2 shows that out of 34 teaching staff, 82%, out of 41 research scholars,95%, out of 49 PG students,73%,out of 27 non teaching staff, 59% and out of 23 short term members, 78% use the e- resources. The study reveals that research scholars are the best users of e resources of the library.

Table 3: Types of resources using

Sl. No	E-resources	Use by Teaching staff	Use by Research Scholars	Use by P. G students	Use by Non teaching staff
1	EBSCO	18(64%)	33(85%)	26(72%)	11(69%)
2	UGC Infonet	26 (79%)	36(92%)	29(81%)	11(69%)
3	SCI Finder	23(82%)	33(85%)	28(78%)	12(67%)
4	ProQuest	14(50%)	27(69%)	19(53%)	7(44%)
5	MGU Theses website	25(89%)	38(97%)	25(69%)	8(50%)
6	E-books	16(57%)	23(59%)	20(56%)	6(38%)

Table 3 shows that the most used e- resource in MGUL is the e journals through UGC infonet, the second one is the Scifinder and MGU online theses the third one.

Table.4: Adequacy of resources

Sl. No	Category	Adequate	Inadequate
1	Teaching staff	29	5
2	Research scholars	37	4
3	P G Students	43	6
4	Non teaching staff	23	4
5	Short term members	18	5

Study reveals that some respondents felt inadequacies about the resources. Some users are of the opinion that in the case of UGC INFONET, access to full text is a problem with regard to non subscribed journals. In the case of Proquest, payment options for getting full text is not satisfactory. For e-books, full text download or archiving is not permitted and more titles have to be subscribed.

Table 5: User's opinion about attitude of Library staff

Sl. No	Category	Fully satisfied	Average	No opinion
1	Teaching staff	31	3	0
2	Research scholars	35	5	1
3	P G Students	37	8	4
4	Non teaching staff	25	2	0
5	Short term members	14	4	0

The study reveals that, majority of the users expressed satisfaction with the attitude of library staff. But some have no opinion about the attitude of some librarians.

6. Findings

- Most of the members use the e- resources
- Research Scholars use the e- resources most effectively
- E journals, e- books and MGU Online Theses are the mostly used e- resources
- The attitude of librarians has to be improved.

7. Conclusion

The e-learning facilities provided by MGU is very supportive for the scholars. Only some areas like AVRC have to be improved. The coming years will be the time of change from the institutional base learning structures to open architecture education. That will occur at a time, place and in a configuration suitable to the learner than to the teacher. By providing instructional support to e-learners, the libraries should re-define its values and services and collaborate with the need of its users. The library should conduct regular orientation programs to the users to make them aware of the new learning technologies. However, most of our youth are well aware of the new technologies and e- learning has a very high scope in India. The librarians should maintain healthy relationship with the e-learners and must be innovative about the new technologies because they have to be the experts, technological pioneers and best organizers of technological initiatives.

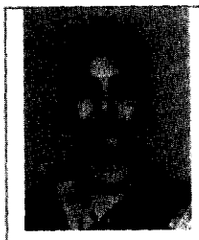
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Usage of Electronic Resources and Services by Faculty Members and Researchers in Alagappa University: A Study

Jeyshankar, R **Ramesha**

Abstract

This paper aims to assess and evaluate the usage of e-resources and services by the faculty members and research scholars of Alagappa University, Karaikudi, with a view to examine the exposure of faculty members and research scholars to e-resources. The authors investigate the use of e-resources by the faculty members and research scholars of Alagappa University through a survey based on a structured questionnaire. Various statistical methods have been used for data analysis. The study confirms that faculty members and research scholars are aware of the e-resources and various types of e-resources, e-database, and e-journals.

1. Introduction

The rapid advancement of information and communication technology (ICT) has brought a revolutionary change in the information scenario giving rise to a number of options to handle varied information sources conveniently and effortlessly as a result of which e-resources have become the most sought after modern library's services in satisfying varied needs of students, teachers, and researchers with minimum risk and time. Information technology has changed the world and has become one of the important tools for retrieving information. The electronic information resources have acquired a major portion of library collections. The value and use of information resources, particularly e-resources, have increased with the time. Therefore, there is necessity to make study on the different aspects of e-resources and the issues relating to the use of e-resources by users, more particularly by the faculty members of academic institutions.

The present study is an attempt to analyse the use of e-resources by the faculty members and research scholars of Alagappa University and to find out the problems and constraints faced by the users in accessing the e-resources with some purposeful suggestions for its development.

2. Literature Review

Several studies on use of e-resources have been carried out by students, research scholars, and teachers of various institutions all over the world. Swain and Panda in their study, 'Use of e-services by faculty members of business schools in a state of India: A study', have discussed on quantitative and qualitative use of e-resources by the faculty members of business schools of Orissa[1]. Maunissamy and Swaroop Rani in their study, 'Evaluation of usage and usability of electronic journals', have identified the usage and usability of e-journals by the users of the NIT, Tiruchirapalli[2]. Haridasan and Khan in their study, 'impact and use of e-resources by social scientists in NASSDOC, India', have identified the acceptance of e-resources in the National Social Science Documentation Centre (NASSDOC) library in New Delhi, and determined their usage, performance, degree of user satisfaction,

and barriers faced in the access of e-resources[3]. In a study of users' opinion conducted by Naushed Ali and Hasan on the use of electronic services at IIT library, Delhi, the authors show that majority of the users are unaware of the various electronic services available in the library and also observed that usage of electronic services is unsophisticated, centering on e-mail and chatting[4]. An analytical study of Choukhandle and Kumar on the information needs and use pattern of faculty members and research scholars was conducted at Amravati University. The study reported that faculty members and research scholars face difficulties in access to information because of multiple factors[5].

3. Objectives of the Study

- To know the different types of e-resources and services used by the faculties and research scholars of Alagappa University Library.
- To identify the frequency of use of the electronic information sources and services for their research activities.
- To know the purpose of utilization of electronic resources.
- To find out the availability of IT infrastructure facilities to access the electronic information sources and services both in the office and at home.
- To understand the factors influence in using e-resources and also identify the sources used to learn e-resources and services.

4. Scope and Limitations of the Study

In Alagappa University, at present, there are 18 departments; two constitute colleges, three centres and five evening colleges in Sivagangai and Ramanathapuram districts in Tamil Nadu. The present study covers all the departments, constitutes colleges and centres.

5. Methodology

In this study survey method was adopted and conducted with the help of questionnaire method to bring out the clarity for the study. A structured questionnaire was designed to collect data from the faculty members and research scholars of Alagappa University, keeping in mind the basic objectives of the study. The data was personally collected from the faculty members and research scholars. Besides, personal interviews were also conducted with library and information science professionals to assess the problems relating to use of e-resources by the faculty members and research scholars.

6. Data Analysis and Discussions

Out of 150 faculty members and research scholars of Alagappa University, only 120 (80 per cent) responded with the filled in questionnaire. The questionnaires were edited where necessary. Thus in all the cases the total number of respondents was 120. The data collected through the questionnaires was scrutinized, classified, and tabulated for better understanding and clarity. Certain factors like whether the data collected are correct or incorrect, statistically true or not, etc. judged using some statistical methods.

Table 1: Distribution of Respondents by Designation

Sl. No	Designation	Respondents	Percentage
1	Professor	15	12.50
2	Associate Professor	36	30.00
3	Assistant Professor	38	31.67
	Research Scholar	31	25.83
Total		**120**	**100.00**

The table 1 illustrates the designation of respondents. Since all the respondents need to use electronic resources for various purposes. It can be inferred that, 31.67 per cent of the respondents are Assistant Professors, 30 .00 per cent are Associate Professors, 25.83 per cent are Research Scholars and 12.50 per cent are Professors who contribute the least percentage.

Table 2: Distribution of Respondents by their Visit to the Library

Sl. No	Visit to the Library	Respondents	Percentage
1	Daily	36	30.00
2	Once in a Week	64	53.33
3	Once in a Month	12	10.00
4	Occasionally	8	6.67
Total		**120**	**100.00**

Table 2 clearly indicates that the frequency of visit to the library more in number is weekly. It is seen that a maximum of 53.33 per cent respondents visit the library weekly and the minimum of 6.67 per cent respondents visit it occasionally. Out of 120 respondents 36 of them visit daily (30.00 per cent) and the remaining 12 visit once in a month (10.00 per cent).

Table 3: Distribution of Respondents by their Purpose of Visit

SL	Purpose	Yes	Percentage
1	To Study	111	92.50
2	To Ask for Information	104	86.67
3	To Borrow Books	107	89.17
4	To Return / Renew Books	104	86.67
5	To Refer the Books	90	75.00
6	To Refer the Journals	86	71.67
7	To Refer the Theses & Dissertation	70	58.33
8	To Refer the Reports / Proceedings etc	81	67.50
9	To Read Newspaper	73	60.83
10	To Read Magazines	70	58.33
11	To Refer The Institutional Publications	54	45.00
12	To Refer the Rare Books & Classic Collection	58	48.33
13	To Take Photocopies	71	59.17
14	To use of E-Resources	66	55.00
15	To access CD ROM Databases	67	55.83

Distribution of responses obtained with the respect to purpose of visit to library from the faculty and researchers are represented in the table 3. It is observed that 111 (92.50 per cent) respondents responded that their purpose of visit to library is to study. The respondents who visit the library to ask information and to return/renew books are 86.67 per cent. And 89.17 per cent of the respondents responded that their purpose of visit was to borrow books. It is also noted that those who visit the library to refer the institutional publication contribute 45.00 per cent.

Table 4: Distribution of Respondents by Places of Access

Sl. No	Places of Access	Respondents	Percentage
1	University Library	45	37.50
2	At home	8	6.67
3	Internet Centres	36	30.00
4	Department	31	25.83
Total		**120**	**100.00**

Table 4 depicts the places from where respondents access the internet. The majority of the respondents access the internet from the University Library (37.50 per cent) followed by Internet Centres (30.00 per cent), Department 25.83 per cent) and Home (6.67 per cent).

Table 5 clearly indicates that the frequent use of electronic sources and services weekly is more in number. It is seen that a maximum of 43.33 per cent respondents use the e-resources once in a week. The respondents who use the e-resources daily contributes 35 per cent, 15 per cent of the respondents use it once in a month and 6.67 per cent of the respondents use it occasionally.

Table 5: Distribution of Respondents by Frequency of Using of E-Resources

Sl. No	Frequency	Respondents	Percentage
1	Daily	42	35.00
2	Once in a week	52	43.33
3	Once in a month	18	15.00
4	Occasionally	8	6.67
Total		**120**	**100.00**

Table 6: Distribution of Respondents by how they learnt to Use E-Resources

SL	Learn	Respondents	Percentage
1	Self taught	62	51.67
2	Colleagues	25	20.83
3	Friends	14	11.67
4	User education provided by library	12	10.00
5	By Attending Course	7	5.83
Total		**120**	**100.00**

Table 6 shows that 62 (51.67 per cent) respondents out of 120 learnt to use the e-resources by themselves. 25 (20.83 per cent) respondents learnt through colleagues. It is also shown that 14 (11.67 per cent) respondents learnt it from their friends, 12 (10.00 per cent) through user education provided by library and 7 (5.83 per cent) of them learnt by attending course.

Table 7: Responses on Conducting Orientation Programme by Library Staff

Sl. No	Orientation	Respondents	Percentage
1	Yes	65	54.17
2	No	55	45.83
Total		**120**	**100.00**

Table 7 illustrates the respondents' responses on the provision of orientation programme. Out of 120 respondents, 65 (54.17 per cent) respondents responded that the library staff conducted Orientation programme for them to create awareness about E-resources. But 55 respondents (45.83 per cent) responded that such programme was not conducted for them.

Table 8: Distribution of Respondents by Time Spent for Use of e-resources

Sl. No	Time Spend	Respondents	Percentage
1	Less than 1 Hour	65	54.17
2	2 Hours	25	20.83
3	2 to 3 Hours	20	16.67
4	More than 3 Hours	10	8.33
Total		**120**	**100.00**

The table 8 illustrates the distribution of respondents by time spent for e-resources. It is found that majority of the respondents 65 (54.17 per cent) spent less than one hour for using the e-resources. 25 (20.83 per cent) respondents spent two hours for using it, 20 (16.67 per cent) spent 2 to 3 hours and only 10 (8.33 per cent) spent more than 3 hours for using the same.

Table 9: Distribution of Respondents their Preference of Search Engines

Sl. No	Search Engines	Respondents	Percentage
1	Google	70	58.33
2	Yahoo	40	33.33
3	AltaVista	10	8.33
Total		**120**	**100.00**

Table 9 presents the data of respondents by their preference of search engines. It is evident that Google occupies the top position with 70 (58.33 per cent) respondents. The second most preferred search engine is Yahoo (33.33 per cent) followed by AltaVista (8.33 per cent). It is obvious that Google is the most favourite search engines. Which is preferred by majority of the scholars. Moreover it is a matter of fact that most of the search engines are not known to them.

Table 10: Distribution of Respondents by Methods of Search

Sl. No	Search Methods	Respondents	Percentage
1	Author	26	21.67
2	Subject	22	18.33
3	Title	72	60.00
Total		**120**	**100.00**

Data given in the table 10 reveals that most of the respondents 72 (60 per cent) prefer Title to search their information followed by Author 26 (21.67 per cent) and subject 22 (18.33 per cent).

Table 11: Distribution of Respondents by their Use of Search Techniques

Sl. No	Search Techniques	Respondents	Percentage
1	Boolean Logic	55	45.83
2	Truncation	26	21.67
3	Field searching	39	32.50
Total		**120**	**100.00**

As can be inferred from the table 11, majority of the respondents 55 (45.83 per cent) use the Boolean logic search technique to access their information. 39 (32.50 per cent) respondents use field searching as their search technique whereas 26 (21.67 per cent) use truncation as their search technique.

Table 12: Distribution of Respondents by Purpose of Using E-Resources

SL	Purpose	Respondents	%
1	For Research work	74	61.67
2	For seminars	21	17.50
3	To update the subject knowledge	25	20.83
Total		**120**	**100.00**

Table 12 shows the distribution of respondents by the purpose of using E-resources. It is evident from the table that the respondents who access the e-resources for the purpose of Research work are 74 (61.67 per cent), for preparing seminar are 21 (17.50 per cent) and to keep themselves up-to-date in their subject area are 25 (20.83 per cent).

Table 13: Distribution of Respondents by Types of E-Resources Used

Sl. No	Types of E-Resources	Respondents	%
1	E-Journals	53	44.17
2	E-Books	30	25.00
3	Abstract & Index	14	11.67
4	Online Databases	20	16.67
5	E-Theses & Dissertations	3	2.50
Total		**120**	**100.00**

The responses are tabulated and presented in the table 13. It is found that the e-resources mostly used by the respondents are e-journals 53 (44.17 per cent) followed by E-Books 30 (25.00 per cent) Abstract and Index 14 (11.67 per cent) and E-theses and dissertation 3 (2.50 per cent).

Table 14: Distribution of Respondents by Types of Databases Used

Sl. No	Types of Databases	Respondents	Percentage
1	ERIC	26	21.67
2	SCIRUS	62	51.67
3	SCOPUS	32	26.67
Total		**120**	**100.00**

The responses presented in the table 14 shows that SCIRUS is the mostly used database by the respondents 62 (51.67 per cent) followed by SCOPUS 32 (26.67 per cent) and ERIC 26 (21.67 per cent).

Table 15: Hindrances Faced by the Respondents

Sl. No	Hindrances	Respondents	%
1	Lack of Relevant Information	40	33.33
2	Lack of Hardware / Software	35	29.17
3	Lack of Timing	15	12.50
4	Lack of Proper Guide Book	14	11.67
5	Slow Access to Information	16	13.33
Total		**120**	**100.00**

Table 15 presents the problems faced by the respondents. It is evident from the table that the problem faced by the most of the respondents is lack of relevant information 40 (33.33 per cent). Lack of Hard ware / Software is also a problem for 35 (29.17 per cent) of the respondents. It is also found that 16 (13.33 per cent) respondents face the problem of slow access to information followed by Lack of timing 15 (12.50 per cent) and lack of proper guide book 14 (11.67 per cent).

7. Suggestions

- Study on the use and usability of e-resources by the faculty members and research scholars needs to be made on regular basis.
- Higher speeds Wi-Fi campus needs to be developed by Alagappa University, so that faculty members and research scholars can use online e-resources and internet within the campus according to their suitability.
- Besides e-journals and e-database, e-books and other e-resources (both online and offline) should be acquired by the Central Library.

- The LIS professionals of the Central Library have to create more awareness on e-resources. In this context the website of library, newsletter of the institution should highlight the available e-resources at the library regularly.
- The Central Library needs to arrange various orientation and training programmes for faculty members and research scholars for the optimum use of available e-resources. In this context, the Central Library may arrange orientation programmes, subscribe database. Also, product trials of various e-resources for specific user groups need to be introduced.

8. Conclusion

The library environment has currently undergone drastic change in terms of collections and services. The proliferation of e-resources has had a significant impact on the way the academic community uses, stores, and preserves information. The advantages of e-resources have drawn attention of the library users to a great extent. Accordingly, these resources have occupied a significant place in the collection and budget of almost all libraries. Faculty members' attitudes seem to be very positive towards e-resources for their study and research and the role of libraries as gateway to provide assistance in accessing these resources. Faculty members are heavily dependent on e-resources for their required information and to keep themselves up-to-date in their subject area. Though some expects that the role of libraries as a gateway to the e- resources will have less importance in future as faculty members access more and more e-resources in their respective departments or personal desktop/laptop, it seems to be more hypothetical. Rather the role of libraries in the age of e-resources will increase tremendously, particularly in providing training and guidance to use authentic and relevant information.

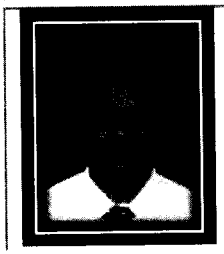
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Usage of Print and Electronic Information Resources by the Faculty Members of Technical Institute Libraries in Mysore City: A Study

Shivarama J **Adithya Kumari H**

Abstract

The present study is aimed at assessment of print and e-resources usage by 17 technical institute faculty members of Mysore city. A total of 150 faculty members from various technical institutes from Mysore were randomly selected with the response rate of 100%. A questionnaire measuring usage e-resources was prepared by the investigators and administered to the sample selected. Results revealed that faculty members were more dependent on all the e-resources selected for the study.

Keywords: E-electronic resources, Faculty members, Technical institute libraries

1. Introduction

Electronic information resources, in reality have become the backbone of many academic organizations. The awareness and use of electronic information sources by faculty members depends mainly on skills of each individual to locate discrete knowledge elements. Information explosion has increased in the amount of electronic information sources available on the web. Electronic information resources help to expand access, increase usability and effectiveness and establish new ways for individuals to use information to be more productive in their endeavors. Awareness of electronic resources may aid the users in keeping abreast with current developments in their respective subject fields, in contrast with print media. The use of electronic information resources is necessary for users mainly because the electronic resources provide better, faster and easy access to information than information accessed through print media. Electronic information resources can be relied upon for timely information which upholds the quote: right information to right user at right time.

2. Review of Literature

Numerous studies have been undertaken to explore the electronic information sources. Lee (2002) highlights the collection development activities of assessing, acquiring, and delivering electronic databases from initial appraisal through acquisition, budgeting, installation, marketing, and evaluation. Linda Ashcroft and Chris Watts (2004) stated that there are similar issues in the take-up of e-books to those of other electronic resources, such as e-journals. Bayugo and Agbeko (2007) reported on a survey of convenient access to, and use of, electronic databases (CD-ROM and online) with full-text journals and their effect on information seeking behavior of health sciences faculty at the College of Health Sciences of the University of Ghana. Dugdale (2001) emphasized the contradiction facing those who are attempting to create equality of access to information while new aspects of inequality may be created. Fisher (1998) briefly reviewed information checkered history

and critically analyzed electronic information sources with particular reference to social science CD-ROMs and the Internet. Stabler (1991) explained that end users of CD-ROMs often need assistance in database content, search protocols, and use of computers.

3. Objectives of the study

- To assess the level of satisfaction about the library collection in the libraries of technical institutes in Mysore city
- To identify the frequency of visit to the library by the faculty of technical institutes.
- To identify purpose for which the faculty visit the library.
- To know the user satisfaction with the library services.
- To know the usage of electronic resources by faculties.
- To know the extent of use of the library facilities and electronic services made by the faculty members
- To find out problems faced by faculty member in the use of electronic resources.
- To find the extent of time spent by faculty members in searching information through electronic media

4. Methodology

The present study tries to find out the use of both print and electronic resources by faculty members of technical institutes of Mysore city. The study is mainly based on the primary data collected from the 150 faculty members of Technical institute faculties of Mysore city through a well-designed questionnaire.

5. Data Analysis

5.1 Designation-wise Distribution of Questionnaires

Table-1: Designation-wise Distribution of Questionnaires

Sl. No.	Designation	No. of Respondents	%
1	Professor	12	8.00
2.	Associate Professor	18	12.00
3.	Assistant Professor	20	13.34
4.	Senior Scale Lecturer	40	26.66
5.	Lecturer	60	40.00
	Total	150	100.00

It is seen from the table that among 150 questionnaires distributed to the faculty members of technical institutes of Mysore city, 12 (8%) are Professors, 18 (12%) are Associate Professors, 20 (13.34%) are Assistant Professors, 40 (26.66%) of them are senior scale lecturers and 60 (40%) are lecturers.

5.2 Age-wise distribution of respondents

Table-2: Designation-wise Distribution of questionnaires

Sl. No.	Age in years	No. of Respondents	%
1	23-25	20	13.33
2.	26-30	30	20.00
3.	31-35	15	10.00
4.	36 and above	85	56.66
	Total	150	100.00

Table 2 clearly shows the age-wise distribution of respondents. Among the total 150 respondents, the age of 20 (13.33%) fall between 23-25 years, 30 (20%) belong to the age of 26-30 years, 15 (10%) belong to the age group of 31-35 years and there are 85 (56.66%) of respondents who belong to the age of 36 years and above.

5.3 Frequency of Library Visit

The table 3 shows that out of 150 faculty members there are 87 (58%) visit the library daily, 34 (22.67%) visit the library twice in a week, 13 (8.67%) respondents visit the library once in a week and 9 (6%) respondents who visit the library once in a fortnight. There are 3 each (2%) respondents who visit the library once in a month and occasionally.

Table-3: Frequency of Library Visit

Sl. No.	Frequency of Library visit	Category of Respondents					Total
		Professors	Associate Professors	Assistant Professors	Senior Lecturers	Lecturers	
1.	Daily	5 (50.00)	10 (50.00)	12 (48.00)	20 (57.14)	40 (66.67)	87 (58.00)
2.	Twice in a week	3 (30.00)	3 (15.00)	5 (20.00)	8 (22.86)	15 (25.00)	34 (22.67)
3.	Once in a week	1 (10.00)	2 (10.00)	5 (20.00)	3 (8.57)	2 (3.33)	13 (8.67)
4.	Once a fortnight	1 (10.00)	2 (10.00)	3 (12.00)	2 ((5.71)	1 (1.67)	9 (6.00)
5.	Once in a month	0	2 (10.00)	0	1 (2.86)	1 (2.86)	3 (2.00)
6.	Occasionally	0	1 (5.00)	0	1 (2.86)	1 (1.67)	3 (2.0)
	Total	10 (6.67)	20 (13.33)	25 (16.67)	35 (23.33)	60 (40.00)	150 (100.0)

5.4 Purpose of Visit to the Library

Table 4: Purpose of visit to the library

Sl. No.	Purpose of library visit	Large Extent				Total	Less Extent				Total	Cumulative
		P N=10	AP N=20	SL N=25	L N=35		P N=10	AP N=20	SL N=25	L N=35		
1	To use/ Borrow books	7	15	41	53	116 (77.33)	2	6	7	19	34 (22.67)	150
2	To consult periodicals	5	14	42	46	107 (71.33)	4	7	6	26	43 (28.67)	150
3	To consult reference material	6	12	39	48	105 (70.00)	3	9	9	24	45 (30.00)	150
4	To get current information	4	14	41	45	104 (69.33)	5	7	7	27	46 (30.67)	150
5	To get bibliographic information	3	7	35	41	86 (57.33)	6	14	13	31	64 (42.67)	150
6	To get statistical information	2	4	17	23	46 (30.67)	7	17	31	49	104 (69.33)	150
7	To get recreation purpose	-	1	2	12	15 (10.00)	9	20	46	60	135 (90.00)	150

The table 4 shows that 104 (69.33%) respondents visit the library to get current information, 86 (57.33%) of them visit the library to get bibliographic information, 46 (30.67%) of them visit to get statistical information and 10% of them visit the library to get recreation purpose to a large extent. But in case of less extent, 90% of them visit to get recreation purpose followed by the statistical information 69.33%, 42.67% for bibliographic information, 3.67% to get current information, 30% to consult reference materials and approximately 25% to use to borrow books, and to consult periodicals as less extent.

5.5 Time spent in the library

Table 5: Time spent in the library

Sl. No.	Time spent in the library/ week	Category of Respondents					Total
		Professors	Associate Professors	Assistant Professors	Senior Lecturers	Lecturers	
1.	More than 15 hours	4 (40.00)	10 (50.00)	12 (48.00)	20 (57.14)	25 (41.67)	87 (58.00)
2.	12-15 hours	2 (20.00)	3 (15.00)	8 (32.00)	8 (22.86)	41 (27.33)	34 (22.67)
3.	8-11 hours	2 (20.00)	3 (15.00)	3 (12.00)	3 (8.57)	21 (14.00)	13 (8.67)
4.	4-7 hours	1 (10.00)	2 (10.00)	1 (4.00)	2 ((5.71)	9 (6.00)	9 (6.00)
5.	Less than 4 hours	1 (10.00)	2 (10.00)	1 (4.00)	2 (5.71)	8 (5.33)	3 (2.00)
Total		10 (6.67)	20 (13.33)	25 (16.67)	35 (23.33)	60 (40.00)	150 (100.0)

The table shows the quantum of time spent in the library for various categories of faculty. 40% of the professors spend more than 15 hours, each 20% of them spend 12-15 and 8-11 hours of them spend 4-7 hours and less than 4 hours.

5.6 Purpose of Gathering Information

Table 6: Purpose of Gathering Information in the Library

Sl. No	Purpose of gathering information	Large Extent				Total	Less Extent				Total	Cumulative
		P	AP	SL	L		P	R	SL	L		
1	For writing Seminar/Conference papers	7	16	37	59	119 (79.33)	2	5	11	13	31 (20.67)	150
2	For doing Research	2	15	39	61	117 (78.00)	7	6	9	11	33 (22.00)	150
3	For writing journal articles	5	12	18	23	58 (38.67)	4	9	30	49	92 (61.33)	150
4	For taking classes	-	2	7	27	36 (24.00)	9	19	41	45	114 (76.00)	150
5	For writing books	4	9	2	3	18 (12.00)	5	12	46	69	132 (88.00)	150
6	For preparing for examination	-	-	2	8	10 (6.67)	9	21	46	64	140 (93.33)	150
7	General purpose	-	1	2	6	9 (6.00)	9	20	46	66	141 (94.00)	150

5.7 User opinion about the Library Collection

The table 7 shows the details of user's level of satisfaction regarding the library collection. Among the respondents, 66.67% of the respondents are satisfied about the overall library collection and 33.33% of them are not satisfied about library collection. So the library collection is to be improved.

Table 7: User opinion about the library collection

Sl. No	User satisfaction	Total	Percentage
1	Satisfied	100	66.67
2	Not satisfied	50	33.33

5.8 Level of satisfaction about Library Collection

Among the various type of collection majority of them are highly satisfied regarding book collection 28%, periodical 29.33%, reference books 27.33%, stock coverage 26.67%, bound volumes 24.67%, and newspapers 26%. Majority of them very unsatisfied about maps 24.67%, video/tapes/slides 25.33%, archives and special collection 18.67% and current stock 19.33%. Therefore it is concluded that the respondents are not satisfied with current stock, archives and special collection and video/slide/tapes collection.

Table 8: Level of Satisfaction about library collection

Sl. No.	Library Collection	Level of satisfaction					Total
		Very satisfied	Satisfied	Unsatisfied	Very Unsatisfied	Not responded	
1.	Books	42 (28.00)	59 (39.33)	31 (20.67)	12 (8.00)	6 (4.00)	150
2.	Periodicals	44 (29.33)	54 (36.00)	33 (22.00)	15 (10.00)	4 (2.67)	150
3.	Reference Books	41 (27.33)	57 (38.00)	28 (18.67)	17 (11.33)	7 (4.67)	150
4.	Stock coverage	40 (26.67)	49 (32.67)	35 (23.33)	18 (12.00)	8 (5.33)	150
5.	Bound journals	37 (24.67)	43 (28.67)	39 (26.00)	21 (14.00)	10 (6.67)	150
6.	Newspapers	39 (26.00)	40 (26.67)	42 (28.00)	24 (16.00)	5 (3.33)	150
7.	Current stock	30 (20.00)	37 (24.67)	47 (31.33)	29 (19.33)	7 (4.67)	150
8.	Archives and special collection	27 (18.00)	30 (20.00)	39 (26.00)	28 (18.67)	26 (17.33)	150
9.	Video/Tape/Slides	22 (14.67)	23 (15.33)	45 (30.00)	38 (25.33)	22 (14.67)	150
10.	Maps	21 (14.00)	23 (15.33)	42 (28.00)	37 (24.67)	27 (18.00)	150

5.9 User Awareness about Electronic Resources

Table 9: User Awareness about Electronic Resources

Sl. No	User awareness	Total	Percentage
1	Aware	132	88.00
2	Not Aware	18	12.00

The above table shows the awareness about electronic resources. It is inferred from the table that nearly 88% of the faculty are aware about the electronic resources and 12% of them are not aware. Therefore it is concluded that majority of them have awareness about electronic resources.

5.10 Use of Computer and Online Services in the library

Table 10: Use of Computers and Online Services in the Library

Sl. No	Use of computers and online services	Total	Percentage
1	Use	140	93.33
2	Do Not Use	10	6.67

The above table shows that nearly 93.33% of the faculty use computer and online services in their library as against 6.67% of them are do not use. Therefore it is concluded

that majority of them have used both computer and online serviced provided in their libraries.

5.11 Use of computers at Browsing center and Residence

Table 11: Use of computers at Browsing centers and Residence

Sl. No.	Designation	Browsing centers	Residence	Total
1	Professor	6 (60.00)	4(40.00)	10
2.	Associate Professor	12 (60.00)	8(40.00)	20
3.	Assistant Professor	15 (60.00)	10(40.00)	25
4.	Senior Scale Lecturer	30 (85.71)	5(14.28)	35
5.	Lecturer	50 (83.33)	10(16.67)	60
Total	**113 (75.33)**	**37 (24.67)**	**150(100.00)**	

As per the category, 60% of the professors, associate professors and assistant professors are using the browsing centers and 40% of the professors use their own computers. In the senior lecturers group 85.71% of them use browsing centers and 14.28% of them use own computers. Among the lecturers, 83.33% of them use browsing center computers and 16.67% of them use own computers.

5.12 Frequency of use of computer and online services in the libraries

Table 12: Frequency of use of computer and online service in the library

Sl. No.	Frequency of use of computer and online service	Category of Respondents					Total
		Professors	Associate Professors	Assistant Professors	Senior Lecturers	Lecturers	
1.	Daily	5 (50.00)	8 (40.00)	10 (40.00)	15 (42.86)	40 (66.67)	78 (52.00)
2.	Twice a week	3 (30.00)	6 (30.00)	8 (32.00)	10 (28.57)	10 (16.67)	37 (24.67)
3.	Once in a week	2 (20.00)	4 (20.00)	3 (12.00)	5 (14.28)	5 (8.33)	19 (12.67)
4.	Once in fortnight	0	2 (8.00)	2 (8.00)	3 (8.57)	3 (5.00)	10 (6.67)
5.	Occasionally	0	2 (8.00)	2 (8.00)	2 (5.71)	2 (3.33)	8 (5.33)
Total		10 (6.67)	20 (13.33)	25 (16.67)	35 (23.33)	60 (40.00)	150 (100.0)

The above table shows the level of usage of computerized online service in the library. Among the professors 50% of them use daily, 30% of them use twice a week and 20% of them use once in a week. In the associate professors, 40% of them use daily, 30% of them used thrice a week, 20% of them use once in a week, 10% of them use once in a fortnight and 10% of them use occasionally. Among the assistant professor group, 40% of them use daily, 32% of them use thrice a week, 12% of them use once in a week, 8% of them use once in a fortnight and 8% of them use occasionally. In case of the senior lecturers, 42.86% of them use daily, 28.57% of them use thrice a week, 14.28% of them use once in a week, 8.57% of them use once in a fortnight and 5.71% of them use occasionally.

In the lecturers group, 66.67% of them use daily, 16.67% of them use thrice a week, 8.33% of them use once in a week, 5% of them use once in a fortnight and 3.33% of them use occasionally. So it is concluded that most of them use daily.

5.13 Time spent in of computer and online services in the library

Table 13: Time spent in use of computer and online services in the library

Sl. No.	Time spent in the library/week	Category of Respondents					Total
		Professors	Associate Professors	Assistant Professors	Senior Lecturers	Lecturers	
1.	More than 15 hours	5 (50.00)	10 (50.00)	13 (52.00)	15 (42.86)	45 (75.00)	88 (58.67)
2.	12-15 hours	3 (30.00)	5 (25.00)	7 (28.00)	13 (37.14)	10 (16.67)	38 (25.33)
3.	8-11 hours	2 (20.00)	2 (10.00)	3 (12.00)	3 (12.00)	3 (5.00)	13 (8.67)
4.	4-7 hours	0	2 (10.00)	2 (8.00)	2 (5.71)	2 (3.33)	8 (5.33)
5.	Less than 4 hours	0	1 (5.00)	0	1 (2.86)	0	2 (1.33)
	Total	10 (6.67)	20 (13.33)	25 (16.67)	35 (23.33)	60 (40.00)	150 (100.0)

As per the obtained data, it is evident from the table that among the professors, 50% of them spend more than 15 hours per week, 30% of them spend 12-15 hours, 20% of them spend 8-11 hours per week. Among the associate professors, 50% of them spend 15 hours per week, 25% of them spend 12-15 per week, 10% of them spend 8 to 11 and 4 to 7 hours per week and 5% of them spend less than 4 hours per week.

5.14 Level of satisfaction about electronic information services

Table 14: Level of Satisfaction about library services

Sl. No.	Electronic Information Services	Level of satisfaction			Total
		Fully Satisfied	Partially Satisfied	Not Satisfied	
1.	E-mail	91 (60.67)	51 (34.00)	8 (5.33)	150
2.	Internet	85 (56.67)	56 (37.33)	9 (6.00)	150
3.	OPAC System	87 (58.00)	41 (27.33)	22 (14.67)	150
4.	Online Journal	85 (56.67)	37 (24.67)	28 (18.66)	150
5.	CD-ROM	53 (35.33)	67 (44.67)	30 (20.00)	150
	Total	401 (53.47)	252 (33.60)	97 (12.93)	1500 (100.00)

In case of online journal, 56.67% of them are satisfied and 24.67% of them are partially satisfied, 35.33% of them are satisfied about CD-ROM and 44.67% of them are partially satisfied. Among them email and Internet, majority of them are satisfied.

5.15 Usefulness of Internet resources

Table 15: Usefulness of Internet Resources

Sl. No.	Electronic resources	Level of satisfaction					Total
		Very Useful	Quite useful	Occasionally useful	Not useful	Not responded	
1.	Online electronic journals	53 (35.33)	63 (42.00)	8 (5.33)	0	26 (17.33)	150
2.	Research project sites	58 (38.67)	54 (36.00)	27 (18.00)	0 (6.00)	11 (7.33)	150
3.	Scholarly paper and abstracts on the Internet	42 (28.00)	77 (51.33)	24 (16.00)	2 (1.33)	5 (3.33)	150
4.	Library Site	40 (26.67)	43 (28.67)	28 (18.67)	11 (7.33)	28 (18.67)	150
5.	Academic department/on the Internet	32 (21.33)	39 (26.00)	43 (28.67)	6 (4.00)	30 (20.00)	150
	Total	225 (30.00)	276 (36.80)	130 (17.33)	19 (2.53)	100 (13.33)	1500 (100.00)

Regarding various sites available in the Internet, 30% of them say they are very useful, 36.80% of them say quite useful, 17.33% of them say occasionally useful, 2.53% of them say they are not useful.

5.16 Problems encountered when using electronic resources

Table 16: Problems encountered when using electronic resources

Sl. No.	Problems faced	No of respondents (N=150)	%
1.	Problem with accessing suitable personal Computers	55	36.67
2.	Problems with accessing suitable software	65	43.33
3.	Problems with Accessing external networks for email or Internet	77	51.33
4.	Lack of information about how to use digital resources	81	54.00
5.	Lack of time to acquire skills needed to use digital resources	66	44.00
6.	Lack of high quality information available from digital sources	33	39.33
7.	Feeling that electronic resources are not relevant to your needs	30	27.33

6. Major Findings of the study

- Majority of the respondents were aware about the existence and use of electronic resources available in their respective libraries
- All the respondents use computer/online services
- Among the different faculty categories, the number of lecturers and senior lecturers

who use computer and online service are more in number in the Technical Institute libraries.

- Irrespective of their category all the faculty members spend less than 4 hours per week followed by 4 to 7 hours per week.
- Most of the faculty members of technical institutes use e-journals
- Most of the faculty members are fully satisfied with e-mail, internet, OPAC ad online journals.
- Irrespective of their categories, majority of them used journals and Internet/world wide web for their research/study purpose.
- The lecturers and senior lecturers visit the library frequently and majority of them visit the library to borrow books, to consult periodical, to consult reference material and to get current information to a large extent.
- Irrespective of their category majority of the faculty members spend 30 minutes per day.
- Majority of the respondents collect the information for taking class, writing seminar/conference paper followed by research purpose.
- Most of the faculty members say that the helping nature of the library opening hours is very helpful to them
- Most of the respondents are satisfied with the library collection especially periodical, reference book and stock coverage.
- All the faculty members are satisfied with the arrangement of reading materials in the library.

7. Suggestions

- The availability of book in the book bank and non-book materials are very low in the libraries. Hence the library can procure more books and non-book materials for the libraries.
- The faculty members of technical institute libraries of Mysore city are not satisfied with CD-ROM collection and services. More number of CD ROMs should acquire in engineering subjects.
- The faculty members of technical institute libraries require more bibliographical and current information. Hence the libraries should procure more number of bibliographic and current information sources.
- The faculty members of technical institute libraries are not satisfied with present infrastructure facilities. Hence the authorities can improve the infrastructure of the library especially air conditioning facility is needed in the reference section.
- The faculty members of technical institute libraries are not satisfied with present working hours. Hence the library has to be kept open for longer hours.
- Online service is also to be improved, individual computer terminals with Internet connection is to be provided to the faculty members.
- More number of international journals have to be subscribed in the library.
- The library should procure new edition of current documents.
- Inter library loan facility should be improved
- Fully trained reference staff must be appointed in all the section of the libraries.

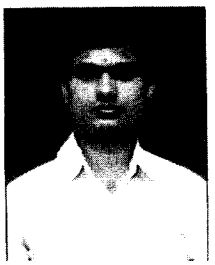
8. Conclusion

The successful operation of any library depends to a large extent on the choice of library collections. The choice of collection should meet the need and requirements of the end users. Consequently, librarians must be aware of how the faculty members seek information. It is also observed that user's are not satisfied with inter library loan service and reference services. The professionals are great help for faculty members in searching their relevant information. Maximum number of faculties used electronic journals for course work and to get latest information resources. It is concluded that electronic journals which are subscribed by the technical institute libraries are being used effectively by the faculty members. Internet access speed can be increased for speedy retrieval of information.

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Authors Profile



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Visualizing the Structure of Iranian Medical Science Publications

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Abstract

This paper presents the results of a bibliometric analysis of the medical sciences (MS) domains in Iran. Totally 9059 articles indexed in ISI (Thomson Reuters Database) from 1989 to 2008 have been extracted and analyzed to discover the Iranian publication status during this period. The publication count has grown at an approximate rate of 40.5% per year. We tried to introduce the most productive authors, and cited works. Moreover, distributions of output in journals identified by ISI and research output analysis of different universities were presented. A general map of the field was drawn to identify the most influential cited authors and articles in this research. Finally, the process of the evolution of the medical sciences discipline, and its shift over the period of the research was traced and shown in the map.

Keywords: Medical sciences, Information visualization (IV), Bibliometric Analysis, Scientific publication, Scientometric indicators

1. Introduction

The ability to judge a nation's scientific standing is vital for the governments, businesses and trusts that must decide scientific priorities and funding (King, 2004). Medical progress is dependent on scientific communication of research findings. There has been a significant increase in the volume of scientific publications in recent years (Swaminathan, Phillips-Bute & Grichnik 2007). In the Islamic republic of Iran, Medical Sciences (MS) almost always have been of great concern. Considering the importance of these fields for the development of communities, and in order to demonstrate research activities in these fields, we are interested in identifying the structure and dynamics of major fields of MS to identify the influential scholars, publications, institutions, countries and words in the medical sciences domains. In particular, our goal is to objectively identify major research experts, papers, institutions, etc., in the domains of interest. Meanwhile, we would like to identify the degree of co-authorship among authors of medical sciences during studied period.

Over the last two decades, there has been considerable growth in Iranian's concern with the status of Medical Sciences. In 1989 there were only three papers written by Iranian medical authors indexed in SCI database. But in 2008 this database contained 1944 Iranian medical articles. Iranian publications increase began right after Iraq-Iran war in 1989. Wilson and Osareh attribute this rise in productivity and visibility to a combination of factors including not only the improvements in the economic, educational, and political situation, but also an increase in the number of internationally educated Iranian students, the increase in the collaboration between Iranian and international researchers, and in the publications in international journals (quoted in Osareh & McCain, 2008).

Iranian research studies in medical sciences tend to be published in journals with lower impact factors (IF) than the world average (this includes the

31 major journals indexed in JCR) and the mean (IF) of 31 top journals was only 1/5. The publication count has grown at an approximate rate of 40.5% per year from a low of 3 articles (1989) to 1458 articles published in 2008.

Few studies have investigated Iranian Medical Sciences publications. Moin, Mahmoudi & Rezaei (2005), considered Iranian Scientific output at the threshold of the 21st century and confirmed an increasing growth after the Iraq-Iran war, which marks the period of stability and development. Nedjat et al. (2008), in a paper revealed that in the past two decades, scientific publications in Iran have increased their medical science content, and the number of articles published in ISI journals has doubled between 1997 and 2001. A similar trend shows itself when this growth in Medical Sciences publications was compared with that of overseas countries.

Tonta & Ilhan (2002), confirmed that the number of biomedical publications authored by Turkish scientists was increasing faster than that of engineering and other non-medical sciences. More specifically, researchers affiliated with Hacettepe University produced almost a quarter of all the biomedical publications of Turkey that appear in international biomedical literature. Swaminathan, Phillips-Bute & Grichnik, (2007), conducted a Medline search for English-language publications from 2000 to 2005. The search included only clinical research in which institutional affiliation included words relating to anesthesia. The United States produces the most clinical research, while per capita output was higher in European nations. Kostoff (2007) examined characteristics of highly and poorly cited research articles (with Abstracts) published in *The Lancet* over a three-year period. These characteristics compared to the least cited articles. The most cited articles' medical themes emphasize breast cancer, diabetes, coronary circulation, and HIV immune system problems, focusing on large-scale clinical trials of drugs. Strassels, Carr, Meldrum & Cousins (1999), studied citation analysis to identify major themes and contributors to the pain and analgesia literature over the past two decades. Most of the high-impact articles identified pertained to research on basic pain pathways. Nearly all the articles concerned opioids, nonsteroidal anti-inflammatory drugs, and consequences of analgesic use. Gomez Fernandez, Bordons (2004), in a study using bibliometric indicators of the 1994-1999 Spanish international medical scientific output, concluded that the growth of clinical and social Medicine makes it possible to identify the principal actors in Health Sciences, detect centers of excellence in the disciplines, and analyze the specialization of Spain in the European context. The publications are more abundant in the journals of the first quartile of each specialty. Cami et al. (1997), confirmed that Spanish scientific activity grew steadily every year and its visibility improved. When comparing both four-year periods, Spain fell down from the seventh to the sixth position in the ranking of EU countries according to its scientific output in biomedicine and health sciences. Ullah, Butt & Haroon (2008), in a study conducted a bibliometric evaluation of the Journal of Ayub Medical College (JAMC), Abbottabad, Pakistan from 1997 to 2006, concluded that the number of papers published in JAMC per issue has been increasing over the last 10 years, and the core region was NWFP, Pakistan. Original articles are the main type of papers for this journal. The publication was open for all fields of

medical sciences. Ullah & Butt (2008), in a survey examined 9079 citations in 567 articles and identified the journal impact factor, which is a valid indicator for quality for journals. Banos et al. (1992), confirmed that the number of Spanish biomedical journals in the SCI-JCR has risen from 1 in 1980 to 9 in 1989. As for impact factor, the contribution of Spanish journals is low, with that of biomedical sciences being higher than that of clinical journals. Language and inclusion in the Science Citation Index may explain, at least in part, the low impact factors obtained. Seaton & Helen (2006) in a study of the literature of nurse-midwifery reveals that ten journals provided one-third of all the references in the study. A combination of Science Citation Index and Social Sciences Citation Index or PubMed/MEDLINE provided the best overall coverage because of the field's reliance on medical journals. CINAHL had the most complete coverage for the nurse-midwifery journals as well as nursing journals in general.

2. Data collection

The population for this study was the Medical Sciences articles written by authors affiliated with Iranian Universities. Research results in the domains of (MS) were retrieved by Subject Areas from ISI's web of science online interface (http://www.isiknowledge.com) in December 2008. The data were captured in Plain Text. For analyzing, the data in 500 batches were entered into the HistCite™ software. For each article, information on the title, Author, Journal, Cited References, times cited, Year of publication, Document type, Language, Institution and Country were saved. For the study, 9059 papers indexed by SCI for 20 years (1989-2008) were considered, and the graph of MS in the studied period was mapped.

3. Methodology

Citation data can be used to identify the structure of different research disciplines, fields and even sciences as a whole (Garfield & Welljams-Dorof, 1992). We retrieved 9059 articles indexed in the Web of Sciences, 1989-2008, (20 years) that dealt with the intersection of medical sciences. The search query was conducted in Web of Sciences subject areas. Using HistCite applications, retried articles were analyzed and visualized. To show main clusters and subject relevance of each cluster, keywords in titles of each paper in MeSH (http://www.nlm.nih.gov/mesh/) were searched. For each cluster we trace the leaves to get one to three common subjects for each cluster. Impact factors for journals were obtained from Journal Citation Reports (Thomson Scientific).

4. Results

Table 1

Author Distribution

#	Author	Recs	TLCS	TGCS
1	Zarrindast MR	208	657	1739
2	Dehpour AR	192	555	1096
3	Azizi F	136	427	908
4	Abdollahi M	115	303	796
5	Shafiee A	94	148	448
6	Larijani B	93	59	248
7	Moosavi-Movahedi AA	93	147	493
8	Malekzadeh R	86	207	620
9	Amini M	77	79	196
10	Saboury AA	65	109	385

Table 1 shows the most productive authors within our set. The 9059 articles queried were published by 18026 authors independently or cooperatively. Zarrindast with 208 articles (2.3%), Dehpour with 192 articles (2.1%), Azizi with 136 articles (1.5%), Shafiee with 94 articles (1%) are the most productive authors within our set.

Table 2
Number of co-authors per article

Number of docs	Frequency of co-authors	Percent
1	73	.8
2	314	3.2
3	1295	13.4
4	2366	24.4
5	1784	18.4
6	1257	13.0
7	666	6.9
8	460	4.8
9	294	3.0
10	194	2.0
11	119	1.2
12	73	.8
13	32	.3
14	26	.3
15	25	.3
16	17	.2
17	9	.1
18	14	.1
19	6	.1
20	6	.1
21	2	.0
22	3	.0
23	7	.1
24	3	.0
25	1	.0
26	5	.1
27	2	.0
28	2	.0
31	2	.0
38	2	.0
Total	9059	100

Number of authors per article A total of 73 articles were produced by single authors and 8986 (99.1%) were written by at least two authors (co-authored). As can be seen in Table 1 most papers involved collaboration between three to six authors.

Table 3
Paper citation networks

#	Date / Author / Journal	LCS	GCS
1	517 Singh RB, Niaz MA, Sharma JP, Kumar R, Rastogi V, Moshiri M. Randomized, double-blind, placebo-controlled trial of fish oil and mustard oil in patients with suspected acute myocardial infarction: The Indian experiment of infarct survival .4. CARDIOVASCULAR DRUGS AND THERAPY. 1997 JUL; 11 (3): 485-491	0	230
2	3376 Reilly JJ, Armstrong J, Dorosty AR, Emmett PM, Ness A, Rogers I, Steer C, Sherriff A. Early life risk factors for obesity in childhood: cohort study BRITISH MEDICAL JOURNAL. 2005 JUN 11; 330 (7504): 1357-1359	0	163

Table 3 shows the two top cited papers that are cited at least 100 times based on Global Citation Scale (GCS). The GCS depends on how often each article is cited in the entire SCI. The paper by Singh RB, Niaz MA, Sharma JP, Kumar R, Rastogi V, *Moshiri M* (1997) is the most cited (230 times). Another major publication that is highly cited across disciplinary boundaries is by Reilly JJ, Armstrong J, Dorosty AR, Emmett PM, Ness A, Rogers I, Steer C, *Sherriff A* (2005) cited (163 times).

Table 4

#	Date / Author / Journal	LCS	GCS
1	2053 Azizi F, Salehi P, Etemadi A, Zahedi-Asl S Prevalence of metabolic syndrome in an urban population: Tehran Lipid and Glucose Study DIABETES RESEARCH AND CLINICAL PRACTICE. 2003 JUL; 61 (1): 29-37	34	80
2	1531 Azizi F, Sheikholeslam R, Hedayati M, Mirmiran P, Malekafzali H, et al. Sustainable control of iodine deficiency in Iran: Beneficial results of the implementation of the mandatory law on salt iodization JOURNAL OF ENDOCRINOLOGICAL INVESTIGATION. 2002 MAY; 25 (5): 409-413	29	38

Table 4 shows the articles that are cited at least 20 times based on LCS. The LCS is based on the citation frequency within the retrieved collection. The article by Azizi F, et al. (2003) is the most cited (34 times). Another major publication that is highly cited across disciplinary boundaries is by Azizi F, et al. (2002) cited (29 times).

Table 5
Journal Distribution

#	Journal	Recs.	TLCS	TGCS
1	IRANIAN JOURNAL OF PUBLIC HEALTH	162	11	35
2	SAUDI MEDICAL JOURNAL	161	26	103
3	ARCHIVES OF IRANIAN MEDICINE	154	6	40
4	PAKISTAN JOURNAL OF MEDICAL SCIENCES	143	2	5
5	**EUROPEAN JOURNAL OF PHARMACOLOGY**	**105**	**302**	**791**
6	AFRICAN JOURNAL OF BIOTECHNOLOGY	83	3	34
7	**JOURNAL OF ETHNOPHARMACOLOGY**	**72**	**131**	**549**
8	DARU-JOURNAL OF FACULTY OF PHARMACY	71	40	46
9	INTERNATIONAL JOURNAL OF DERMATOLOGY	71	53	294
10	**BRAIN RESEARCH**	**69**	**171**	**535**

Table 5: Journal Distribution

A total of 9059 article were published in 1475 different scientific journals. Table 5 gives a rank order listing of the top 10 journals in which 69 to 162 articles have been published in. Five journals, such as *Iranian Journal of Public Health, Saudi Medical Journal, Archives of Iranian Medicine, Pakistan Journal of Medical Sciences and European Journal of Pharmacology* published more than 100 articles each. *The European Journal of Pharmacology* received 302 local citations with 105 records and *Iranian Journal of Public Health* gathers 11 local citations with 162 records.

Table 6 termes by count of publications

#	Word	Recs	Percent	TLCS	TGCS
1	IRAN	956	10.6	1082	3605
2	PATIENTS	754	8.3	404	2801
3	EFFECT	643	7.1	478	2194
4	EFFECTS	513	5.7	632	2492
5	IRANIAN	512	5.7	531	2111
6	TREATMENT	355	3.9	182	1543
7	USING	322	3.6	173	1000
8	RATS	318	3.5	525	1545
9	HUMAN	309	3.4	199	1706
10	ACTIVITY	303	3.3	249	1481

The ranked word lists of HistCite sort the vocabulary taken from the document titles (Garfield, Paris, Stock, 2006). As can be seen in the Table the term "Iran" is the top scorer of the title terms (Table 6). Ranked second we see "*Patents*", coming third is "*Effect*" followed by "*Effects*". Since HistCite does not yet recognize phrases. It is possible that there is only one concept "*effect of patents*". HistCite does not yet make use of conflation algorithms, so "*Effect*" and "*Effects*", "*Iran*" and "*Iranian*" are two separate entries in the list.

Table 7 the language of documents

#	Language	Recs	Percent	TLCS	TGCS
1	English	9046	99.9	6904	36228
2	French	8	0.1	7	22
3	German	2	0.0	0	0
4	Danish	1	0.0	0	0
5	Italian	1	0.0	0	1
6	Turkish	1	0.0	0	0

Table 7 shows the language of documents. The (Medical Sciences) literature is mainly written in English (99.9 %) and French (0.1 %), but the English documents gather more than 99% of all local citations and the French one percent only (1%). All documents in other languages are not cited locally and or globally (Table 7).

Table 8 Top 10
Cited Institutions

#	Institution	Recs	Percent
1	Tehran Med Sci Univ, Univ Tehran Med Sci, Univ Tehran Med Sci & Hlth Serv	1572	17.3
2	Univ Tehran	881	9.7
3	Shaheed Beheshti Med Univ, Shahid Beheshti Med Univ, Shaheed Beheshti Univ Med Sci, Shahid Beheshti Univ Med Sci, Shahid Beheshti Univ Med Sci & Hlth Serv	800	8.9
4	Shiraz Med Sch, Shiraz Univ Med Sci	565	6.2
5	Tarbiat Modaress Univ, Univ Tarbiat Modarres, Tarbiat Modarres Univ, Tarbiat Modares Univ	477	5.2
6	Pasteur Inst Iran, Inst Pasteur, Inst Pasteur Iran	276	3.1
7	Esfahan Univ Med Sci, Isfahan Univ Med Sci, Isfahan Univ Med Sci & Hlth Serv	271	3
8	Tabriz Med Sci Univ, Tabriz Med Univ, Tabriz Univ Med Sci	269	2.9
9	Iran Univ Med Sci, Iran Univ Med Sci & Hlth Serv	268	3
10	Mashad Univ Med Sci, Mashhad Univ Med Sci	198	2.2

The number of Institutions is 6023. Table 8 presents the most productive institutions in this reseach. Papers have been published with various Institution names: *Tehran Medical Sciences University, University Tehran Medical Sciences and University Tehran Medical Science & Health Services* are three names used for one institution, so these three names assumed as one name. *Tehran Medical Science University* is the most productive institution where Zarrindast, Dehpour, Shafiee and Larijani hold teaching positions in this university. Following that, *University Tehran, Shaheed Beheshti Medical University,* where Azizi is currently one of its professors, *Shiraz Medical School,* and *Tarbiat Modaress University* come out with high rankings. Although some of the studied authors have positions in hospitals and research institutions, they opt to identify themselves with a university due to the fact association with universities are culturally and socially deemed as the more prestigious universities.

Table 9
International collaboration

#	Country	Recs.	Percent	TLCS	TGCS
1	Iran	8993	99.3	6854	35748
2	USA	609	6.7	522	4555
3	UK	455	5.0	339	3746
4	Canada	253	2.8	110	1197
5	Australia	159	1.8	125	910
6	France	148	1.6	110	1016
7	Japan	137	1.5	73	1138
8	Germany	129	1.4	71	893
9	Sweden	129	1.4	71	717
10	Italy	98	1.1	76	951

Table 9 shows a rather high international cooperation level with native English-speaking countries. The results of this study showed that the authors of 101 countries collaborated with Iranian authors in producing scientific documents. USA ranked the first with 609 records in this research. UK, Canada and Australia ranked second to forth respectively.

Table 10 highly cited documents in Web of Science

#	Author / Year / Journal		Recs	Percent
1	LOWRY OH, 1951, J BIOL CHEM, V193, P265	WoS	120	1.3
2	MILLER SA, 1988, NUCLEIC ACIDS RES, V16, P1215	WoS	88	1.0
3	BRADFORD MM, 1976, ANAL BIOCHEM, V72, P248	WoS	87	1.0
4	PAXINOS G, 1986, RAT BRAIN STEREOTAXI	WoS	77	0.8
5	LAEMMLI UK, 1970, NATURE, V227, P680	WoS	73	0.8
6	FRIEDEWALD WT, 1972, CLIN CHEM, V18, P499	WoS	68	0.8
7	AZIZI F, 2000, CVD PREVENTION, V3, P242	WoS	59	0.7
8	SAMBROOK J, 1989, MOL CLONING LAB MANU	WoS	51	0.6
9	*AM PSYCH ASS, 1994, DIAGN STAT MAN MENT	WoS	44	0.5
10	DUBUISSON D, 1977, PAIN, V4, P161	WoS	44	0.5

In this study highly cited documents in Web of Science also were identified. As can been seen in Table 10 Lowry (1951) with 120 citations, Miller (1988) with 88, Bradford (1976) with 87 citation, Paxinos (1986) with 77 citations, Laemmli (1970) with 73 citation, Friedewald (1972) with 68 citation, and Azizi (2000) with 59 citation. The reason that they are not included is that some of them are not in the ISI web of Knowledge and were not used as seeds.

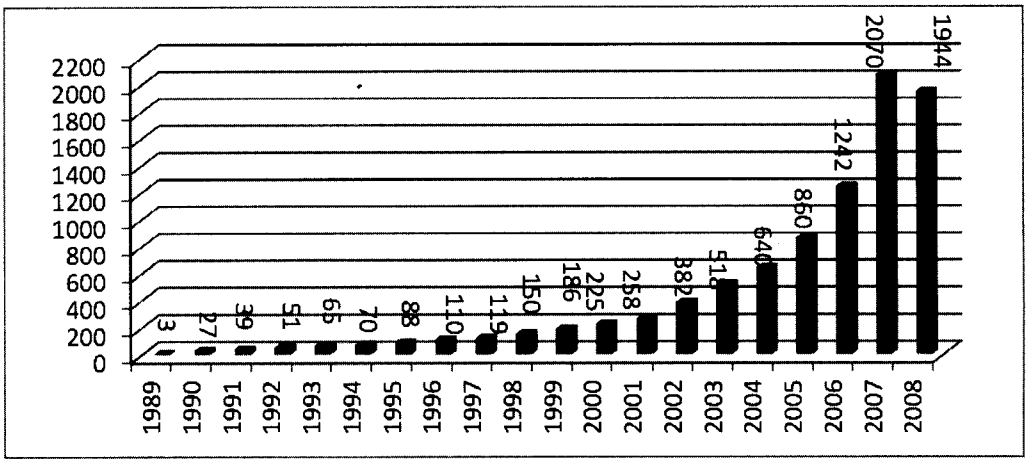
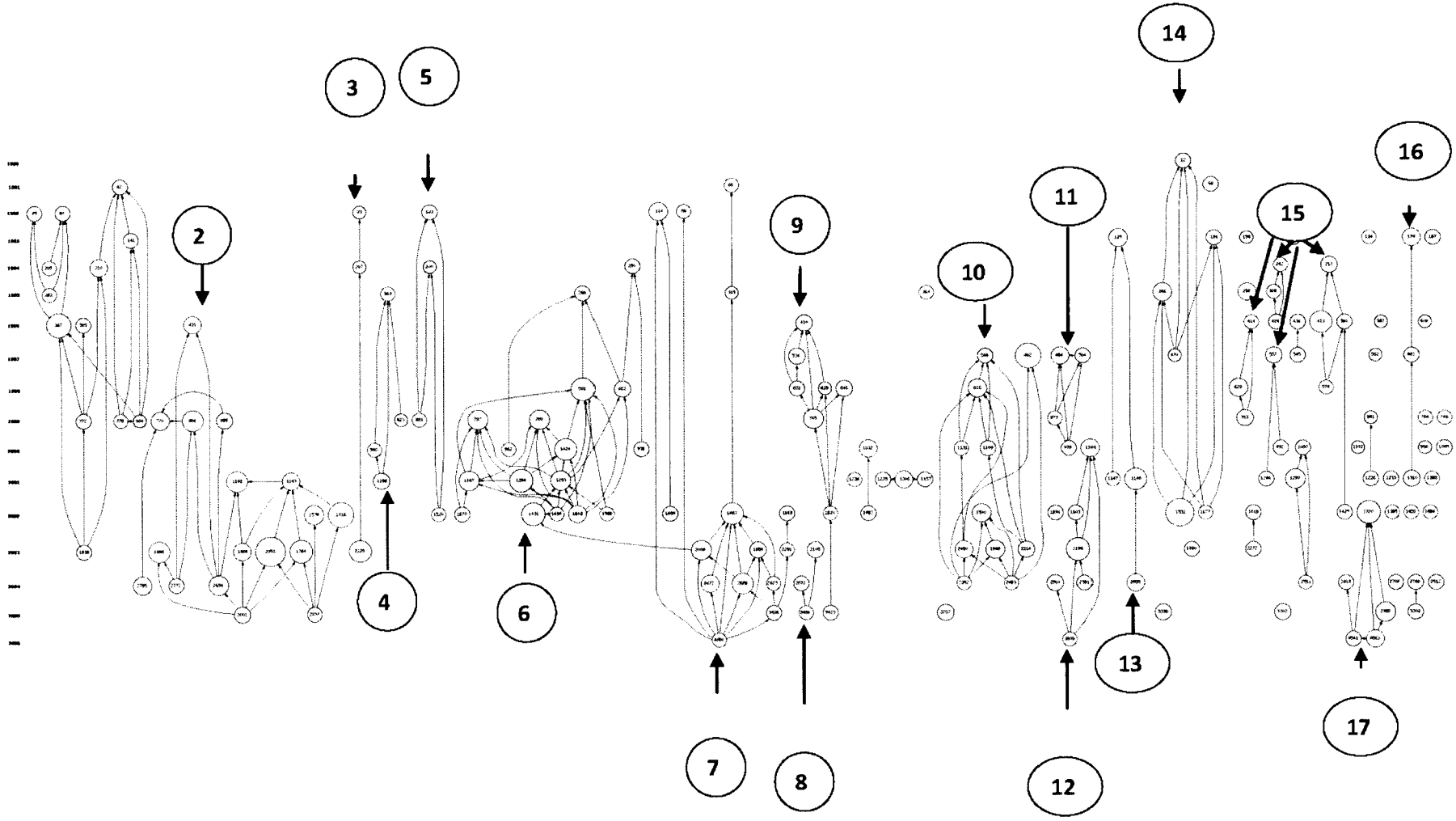


Figure 1 distribution of records based on publication year

The number of articles on (MS) published each year are shown in table. 11. Publications remarkably increased from 1989 to 2007 and a peak appears in 2007. A slightly decrease appears in 2008. The top cited year within GCS is 2005 and within LCS is 2004.



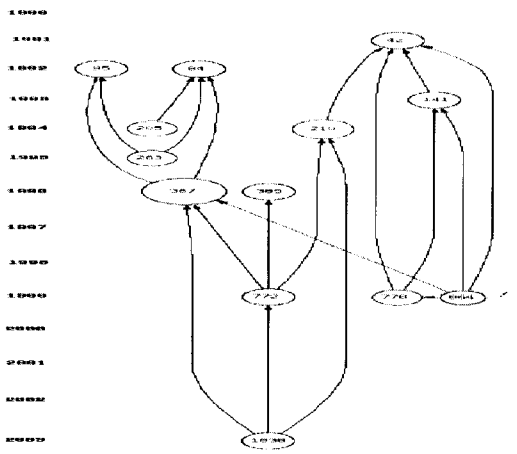
te historiograph of the most highly cited papers within the medical science (MS) domain (threshold 181 citations. 2 perc aset).

By looking at cluster maps generated on an annual schedule, the literature epidemiologist could see how an outbreak of research actually spreads over time, through what channels, and to whom (Goffmtm, 1980). Fig.2 shows a historiograph of the 181 most cited papers, 2 percent of the whole dataset. The graph fall into 17 clusters and 206 links observed. It means there are few interlinkages among the LCS. Figure2. Also shows a year by year map of 181 most cited papers. In 2002 there are 24 highly cited papers, in 2001 there are 18 and in 2004 there are 17 highly cited papers. The least cited paper goes back with one paper in 1990.

1. Alkaloids & Organic chemicals
2. Body weight & Cardiovascular system - Metabolic diseases
3. Skin manifestation
4. gastrointestinal disease
5. Parasitic disease
6. Physiological effects of drugs & Digestive system disease & Alkaloids & RNA viruses
7. Chemical & drugs & Heterocyclic compounds
8. Body weight
9. Chemical action and uses & Solubility
10. Salivary glands & organophosphorus compounds
11. Central nerves system
12. Gastrointestinal neoplasms
13. Thalassenia
14. Iodine deficiency
15. Parasitic disease & leishmania
16. Hepatitis-B
17. Immunodeficiency & consanguinity

There are 5 clusters that are more noticeable and which will be described:

1. Cluster 1 which is about "Alkaloids & Organic chemicals" consists of 12 links, began from 1991 up to 2003. The most productive author in this cluster is Zarrindast with 10 papers; other authors are Rezayat and Sabetkasai each with one paper.



42 Zarrindast MR, 1991, LCS 10, GCS 15

84 Zarrindast MR, 1992, LCS 9, GCS 18

95 Zarrindast MR, 1992, LCS 9, GCS 29

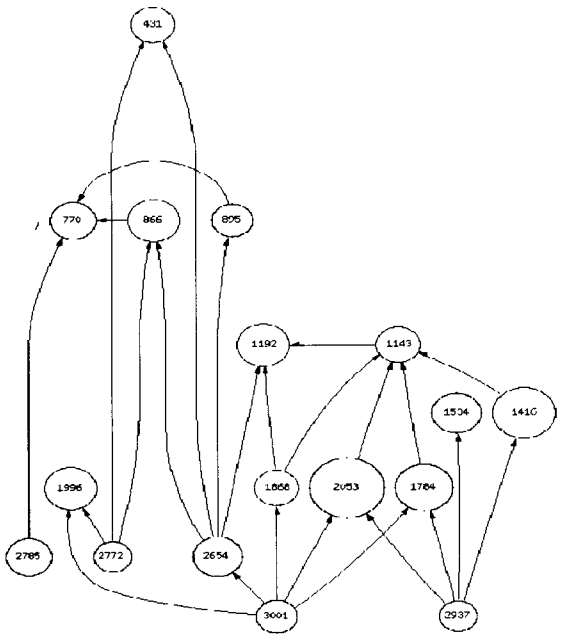
141 Sabetkasai M, 1993, LCS 10, GCS 13

205 Zarrindast MR, 1994, LCS 8, GCS 9

210 Rezayat M, 1994, LCS 13, GCS 28

1. **Alkaloids & Organic chemicals**

2. Cluster 2 refers to "Body weight & cardiovascular system - Metabolic diseases", with 17 links. The most productive author is Azizi with 8 papers, following him Sarraf-Zadegan with 3, Mirmiran and Esmaillzadeh each with 2 papers and Kelishadi with 1 paper.



431 Pishdad GR, 1996, LCS 13, GCS 22

770 Sarraf-Zadegan N, 1999, LCS 14, GCS 19

866 Sarraf-Zadegan N, 1999, LCS 18, GCS 29

895 Sarraf-Zadegan N, 1999, LCS 11, GCS 18

1143 Azizi F, 2001, LCS 12, GCS 19

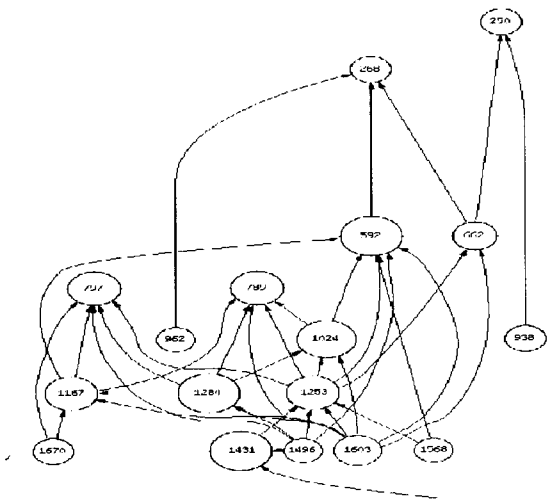
1192 Azizi F, 2001, LCS 17, GCS 21

1416 Azizi F, 2002, LCS 26, GCS 34

1534 Azizi F, 2002, LCS 16, GCS 16

Body weight & cardiovascular system - Metabolic diseases

3. Cluster 6 is about "Physiological effects of drugs & Digestive system disease & Alkaloids & RNA viruses" with 17 links. The most productive author is Dehpour with 8 papers followed by Nahavandi and Homayoun each with 3 papers, and Gaskari, Mani and Namiranian each with one paper.



250 Dehpour AR, 1994, LCS 9, GCS 18

268 Dehpour AR, 1995, LCS 9, GCS 15

592 Dehpour AR, 1998, LCS 21, GCS 25

662 Dehpour AR, 1998, LCS 11, GCS 11

789 Dehpour AR, 1999, LCS 16, GCS 21

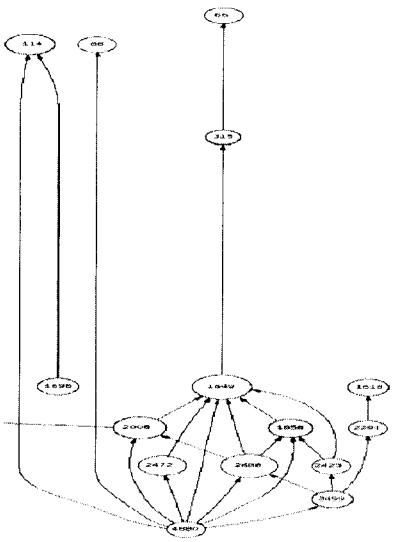
797 Nahavandi A, 1999, LCS 16, GCS 22

938 Dehpour AR, 2000, LCS 10, GCS 11

962 Dehpour AR, 2000, LCS 8, GCS 21

Physiological effects of drugs & Digestive system disease & Alkaloids & RNA viruses

4. Cluster 7 is about "Chemical & drugs & Heterocyclic compounds" with 15 links. The most productive author is zarindast with 11 papers, Khavandgar with 2, Gholami and Homayoun each with 1 paper.



66 Zarrindast MR, 1991, LCS 8, GCS 9

86 Zarrindast MR, 1992, LCS 8, GCS 16

114 Zarrindast MR, 1992, LCS 14, GCS 29

315 Zarrindast MR, 1995, LCS 7, GCS 10

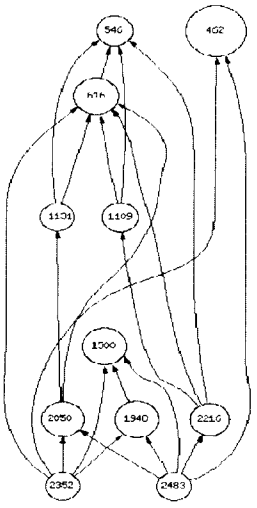
1618 Gholami A, 2002, LCS 9, GCS 21

1649 Khavandgar S, 2002, LCS 20, GCS 32

1698 Zarrindast MR, 2002, LCS 10, GCS 20

7. **Chemical & drugs & Heterocyclic compounds**

5. Cluster 10 is about *"Salivary glands & organ phosphorus compounds"* with 11 links. The most productive author is *Abdollahi* with 9 papers, then *Ranjbar* and *Akhgari* each with one paper.



462 Abdollahi M, 1997, LCS 25, GCS 47

546 Abdollahi M, 1997, LCS 9, GCS 13

616 Abdollahi M, 1998, LCS 14, GCS 15

1109 Abdollahi M, 2000, LCS 9, GCS 14

1131 Abdollahi M, 2000, LCS 8, GCS 11

Salivary glands & organ phosphorus compounds

5. Summery

This paper canalized 9059 records written by 18026 authors independently or cooperatively, published in 1475 journals, with 196871 cited references, and 16700 unique title words. The mean for LCS 0.76, for GCS 4.00, for cited reference (CR) 27.72, for number of author (NA) 4.55. Median for NA 4.00. Collection span 1989 - 2008 (20 years). Iranian publications in medical sciences tend to be published in journals with lower impact factors (IF). The publication count has grown at an approximate rate of 40.5%. Main noticeable clusters are: *"Alkaloids & Organic chemicals"*, *"Body weight & cardiovascular system - Metabolic diseases"*, *"Physiological effects of drugs & Digestive system disease & Alkaloids & RNA viruses"*, *"Chemical & drugs & Heterocyclic compounds"* and, *"Salivary glands & organ phosphorus compounds"*. The most productive institution is *"Tehran Med Sci Univ"*. USA ranked first in collaborating with Iranian authors in publishing papers. The (MS) literature is mainly written in English. *"Iranian Journal of Public Health"* is the top journal in which most papers have been published and the most productive authors within our set are Zarrindast, Dehpour and Azizi.

The findings pinpoint main research institutes, authors, subjects and core journals. Being recognized as main research institutes means that these institutes are more likely to secure their needed fund from the government. Moreover, being recognized as outstanding authors entails broader scientific cooperation and added prestige for their publications. Singling out main fields depicts Iranian authors' interests in (MS) domains. Finally, finding main journals helps library and information centers locate and procure core publication in (MS) domains with greater ease and at lower cost.

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Access to Knowledge: Initiatives in India

Neeru Setia

Abstract

Information and knowledge are considered as the wealth of the present century. Moreover the world has become a global village through the network of networks - the internet. It has made access to knowledge quick and easy. The major constraints of time and distance are not affecting transfer of information anymore. Governments, Academics and other stake holders in the fields of information and knowledge are making efforts to make the information available to all for making every one well-informed. This article enunciates the types of knowledge and lists out the global efforts in making knowledge accessible to all. It also points out the various efforts happening in India.

Keywords: Open Access, Tacit knowledge, Explicit knowledge, Institutional repository, Public domain, IPR, RTI

1. Introduction

Knowledge is considered as wealth in the present day society. People acquire lot of information to increase their knowledge base. This helps in the development of mankind altogether. Hence it becomes necessary to have access to knowledge in an equal manner to one and all. This article discusses the various means by which access to knowledge is made possible on a global basis and discusses on the Indian scenario.

2. Knowledge: Definitions

In simple words knowledge means what we know. The natural question then arises immediately in one's mind is from where we get to know. Albert Einstein quoted "The only source of knowledge is experience." Further, Webster's New Collegiate Dictionary has modified his definition of knowledge as "The fact or condition of knowing something with familiarity gained through experience or association." This seems to be a good definition of knowledge as it is universally used and accepted. We get new experiences when we meet with new people, we read books, newspaper, magazines, we watch new happenings on television, we listen on radio, we do internet surfing etc. Without it progress of our society is not possible. It has changed the complete scenario of our life. The formidable change happened in human life can be experienced when we think of what we are now and where we were one era before. The life which we are experiencing today was never possible without knowledge.

Davenport & Prusak define knowledge as, "a fluid mix of framed experience, contextual information, values and expert insight that provides a framework for evaluating and incorporating new experiences and information." Notice that there are two parts to their definition:

- First, there is content: "a fluid mix of framed experience, contextual information, values and expert insight." This includes a number of things that we have within us, such as experiences, beliefs, values, how we feel, motivation, and information.
- The second part defines the function or purpose of knowledge, "that provides a framework for evaluating and incorporating new experiences and information."

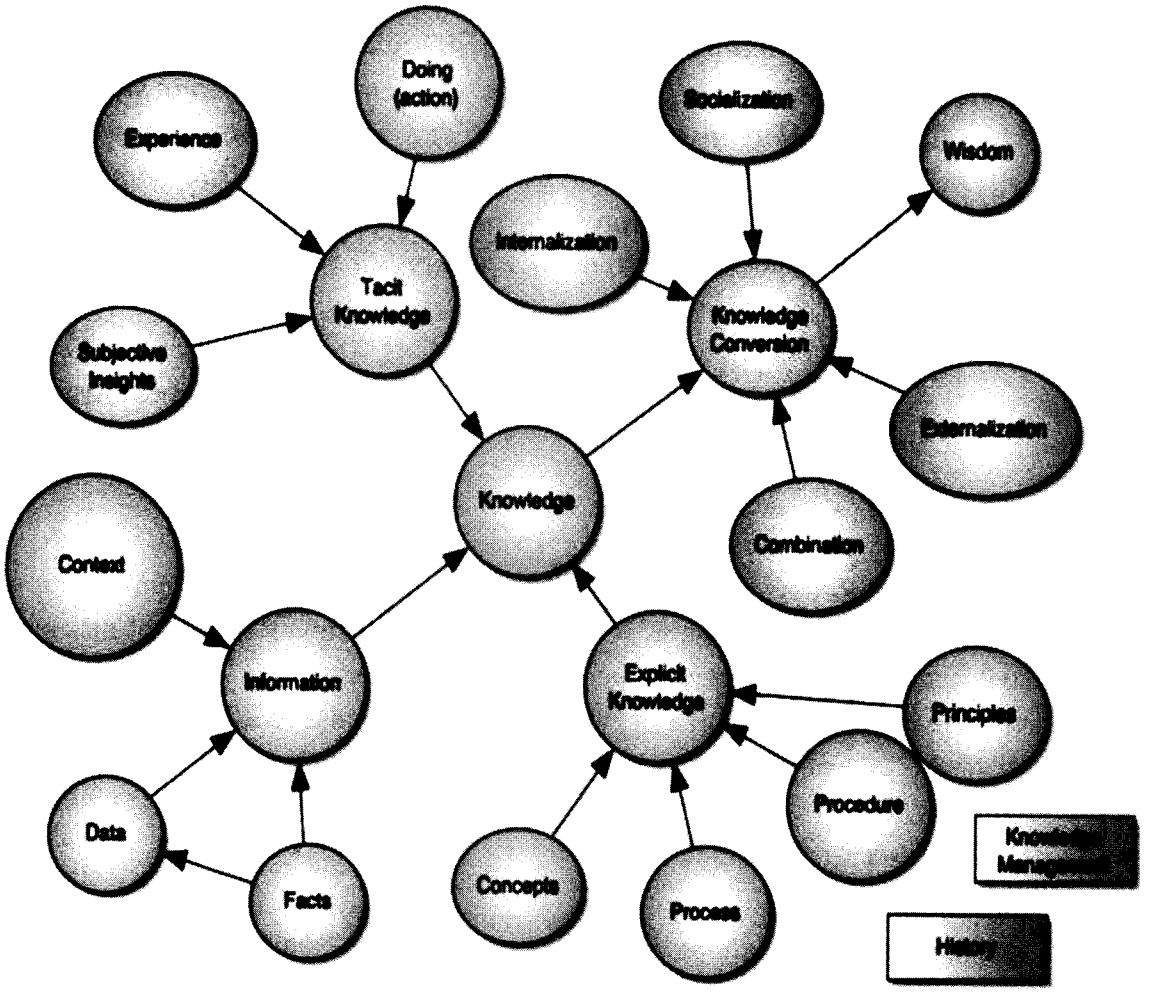


Figure-1 Knowledge Typology Map

3. Types of Knowledge

There are two types of knowledge:

- ❖ Tacit knowledge; and
- ❖ Explicit knowledge

In practice we use both (tacit &explicit) knowledge. But if we want to understand knowledge properly, it will be important to understand its kinds.

3.1Tacit knowledge

Tacit knowledge is one's personal knowledge. We cannot easily share it as it involves lots of learning and skill to express one's own thinking. It is definitely not impossible to share it but it is difficult as tacit knowledge consists often of habits and culture that we do not recognize in us and difficult to write on a paper to make understand others. All our personal beliefs, thinking, values etc. will come under tacit knowledge.

3.2 Explicit knowledge

Explicit knowledge can be expressed in formal language so it can be easily transmitted to others. It can be expressed with the help of sign and symbols, numbers and words, charts and map, tables and figures, formulae and equations, concepts and principles etc. Also, we can convert this in the form in which computer can understand it. So it can be transmitted electronically. The information contained in encyclopedias (including Wikipedia) is good examples of explicit knowledge.

Nonaka & Takeuchi's model (pp. 63-69) of the four modes of knowledge creation or conversion that are derived from the two kinds of knowledge:

	To tacit knowledge	To explicit knowledge
From tacit knowledge	**Socialization**	**Externalization**
	(Sharing experiences)	(Process of articulating tacit knowledge into explicit concepts through metaphors, concepts, etc.)
From explicit knowledge	**Internalization**	**Combination**
	(learning by doing)	(combine knowledge through media, such as documents, meetings, and conversations)

Table-1: Classification of knowledge

Knowledge creation or conversion as depicted above is taking place through a combination of the methods viz. socialization, externalization, internalization and combination and not through a single process alone.

4. Access to knowledge (A2K)

We have seen how knowledge is produced in our society. This knowledge has to be communicated among the members of the society. The methods by which the access to knowledge is made possible by our society is discussed in details below.

Access to knowledge is essential for the progress of a healthy and democratic society. The sources, methods and the special privileges by which one gets information to develop his knowledge base is discussed with the caption - Access to Knowledge. A well aware public can only actively participate in discussion of any social, political, economical issue. The right to information act stipulated by the government of India after the agitation of Anna Hazare brought access to knowledge or information on governance easily

accessible to all and governance was made transparent to an extent. However A2K is restricted by Copyright, Patent and other restricting laws. There are three points to be considered when we advocate access to knowledge for all. They are

4.1 Equality in access to Knowledge

A person to develop himself along with his peer group needs access to knowledge in all aspects in equal terms with others. As global economy is developing day by day, command over knowledge is becoming the decisive factor for global wealth and power. But we can see that all countries are not equally participating in global economy and also, their all citizens are not getting equal chance to take advantage of this development. So knowledge should be distributed equally. Access to knowledge gives an opportunity to each person to make his own cake and share it with others as much as possible.

4.2 Causes in the user participation and human liberty

Human development can be promoted by encouraging the participation of large number of people in the production of information and knowledge. Endevours to make knowledge available to all causes further user participation in the production of knowledge. It also cerates a novel atmosphere of human liberty

4.3. Protection to Intellectual property

Intellectual property is the creation of a human mind. It can be a literary or artistic work or even an invention. Intellectual property laws provides certain exclusive rights to the owner of the work. Intellectual property rights include the rights of copyright, trademark, patents, industrial design and trade secrets. There is lack of access to knowledge in the world due to various reasons. The restrictive Intellectual Property laws are not the only serious cause of the lack of A2K. There are many initiatives happening in the world to provide access to knowledge. Some of them are listed below.

5. Initiatives for Access to Knowledge

5.1 Public Domain

Public domain refers to ideas, information, and works that are "publicly available". It refers to the total absence of copyright protection for work and it is available for anyone to use for any purpose. The material which is not controlled or owned by anyone comes under Public domain. We can copy and distribute this work without any permission. A creative work is said to be in the public domain if there are no laws which restrict its use by the public at large.

5.2 Open access (OA)

Open access is the publication of documents over the Internet especially journal articles making them freely available to anyone, anywhere. It can be provided in two ways. 1. Golden route to open access and 2. Green route to Open Access. In golden route the author can publish articles in Online journals making freely availble on the net. In Green route to open access the authors are allowed to submit their publications inot the institutional

repositories, the online locus to publish materials for free access and attached to institutions.

5.3 Open licensing

Free and Open Source Software (FOSS): Free and open-source software (FOSS) is software that is liberally licensed to grant users the right to use, study, change, and improve its design through the availability of its code. Its users are free to run the program for any purpose and they can improve the program. After improving the program they can release it to the public so that public can take advantage of it.

5.4 Open Educational Resources

The term "open educational resources" was first adopted at UNESCO's 2002 Forum on the Impact of Open Courseware for Higher Education in Developing Countries funded by the William and Flora Hewlett Foundation. OER are teaching and learning materials that are freely available online for readers. OER covers the areas of art, business, science, humanities, mathematics and statistics, social sciences etc.

5.5 Libraries

Libraries collect and organize vast collection of books, newspapers, journals, audiovisual material, maps, pictures, and music etc. The purpose of this collection is to make the knowledge available to current and future generation without any discrimination on the basis of cast and creed among people. In the last two decades the scenario of libraries has completely changed, even though the purpose remains the same. The libraries are maintains digital collections of e-books and e-journals besides the print materials.

5.6 Document freedom day

Document Freedom Day (DFD) is a global day for document liberation and to raise awareness of open standards and free document formats. DFD's main goals are-

- The promotion and adoption of free document formats;
- Forming a global network.
- Coordination of activities that happen on the last Wednesday of March, Document Freedom Day.

6. Indian Scenario

"People's access to knowledge can transform India's potential" (According to National Knowledge Commission in 2006). India has been a place of knowledge for hundreds of years. India is having the third largest population of students in higher education sector after China and United states (Altbach, 2005). India currently has 545 universities in total which includes 41 central universities, 281 state universities, 129 deemed universities and 94 private universities. Hence India has a huge academic potential consisting of proficient faculties, research scholars, students and scientists which produce a lot of information in the form of project reports, books, thesis, and dissertations. They also produces articles, research papers which gets published in national and international conferences and in peer reviewed journals of high repute. Further, it is necessary to make

the so produced academic information accessible to other academic communities and societies for moving further ahead. If this academic information are not well-accessible to the public, then it is of no use. So following initiatives are taken in India for access to knowledge

6.1 National Knowledge Commission

National Knowledge Commission (NKC) was constituted on 13 June 2005 as a high-level advisory body to the Prime Minister of India, and its website was launched in February 2006. Its main aim is to make India a knowledge-based society. In the words of Dr. Manmohan Singh, Prime Minister of India, "The time has come to create a second wave of institution building, and of excellence, in the fields of education, research and capability building so that we are better prepared for the 21st Century." Its prime focus is on five key areas of the knowledge paradigm – access to knowledge, knowledge concepts, knowledge creation, knowledge application and development of better knowledge services.

National Knowledge Commission has made the following recommendations:

- **Regarding IPR**

Scale up efforts to build a world class IPR infrastructure, including steps to modernize the patent offices with computerization, e-filing, process re-engineering, human resource development, transparency, documentation, accessibility and building global standards. Intensify IPR training n IP Offices as well as in educational institutions and develop IPR Cells.

- **Regarding National knowledge Network**

Build a national knowledge network with gigabit capabilities to connect all universities, libraries, laboratories, hospitals and agricultural institutions to share data and resources across the country. This will ultimately require provision of connectivity to around 5,000 nodes covering all major institutions.

- Regarding Higher education
  - Create many more universities that would enable India to attain a GER of at least 15 percent by 2015.
  - Change the system of regulation for higher education.
  - Set up an Independent Regulatory Authority for Higher Education
  - Increase public spending and diversify sources of financing.
  - Establish 50 national universities that can provide education of the highest standards.
  - Ensure access for economically and historically socially underprivileged children.

6.2 Institutional Repositories

The scholarly publishing and academic resources coalition (SPARC) defines institutional repositories as digital collections capturing and preserving the intellectual output of a single university or a multiple institution community of universities. So we can

say that Institutional Repository is an Institutional archive that keep safe the intellectual work of an institution that means IT collect, preserve and spread intellectual work of an institute in digital form. Repositories have been designed to be interoperable through the use of common metadata standards developed by the Open Archives Initiative (OAI). Following is the list of (OAI) institutional repositories from India sponsored by DSIR, Ministry of S&T, and Government of India.

- Catalysis Database (ePrints@NCCR IIT Madras)
- DRS at National Institute of Oceanography, Goa
- DSpace at ICFAI BUSINESS SCHOOL (IBS), Ahmadabad
- DSpace at IIMK, Kozhikode (177 Records)
- DSpace at National Chemical Laboratory, Pune
- DSpace at Vidyanidhi, Mysore
- DSpace@DRTC, Bangalore
- Dspace@nitr, Rourkela
- DU Eprint Archive, New Delhi
- ePrints@iisc, Bangalore
- ePrints@IIT Delhi
- ETD at Indian Institute of Science, Bangalore
- Indian Institute of Astrophysics, Bangalore
- ISI Library, Bangalore
- NAL Institutional Repository, Bangalore
- OneWorld South Asia Open Archive Initiative
- OpenMED@NIC DSpace, New Delhi
- RRI Digital Repository, Bangalore

6.3 Metadata Harvesting Services in India

Metadata can be described as "data about data". It means metadata is a set of data that describes and gives information about other data for example content, quality and other characteristics of data. Metadata Harvester provides indexes or harvests metadata, from different open access archives and open access journals. A metadata harvesting service harvests or indexes metadata from OAI-compliant archives or Repositories through harvesting software that supports a protocol known as OAI-PMH (Open Access Initiative Protocol for Metadata Harvesting).. Main metadata harvesting services in India are -

- Search Digital Libraries (SDL)
- SJPI (Scientific Journal Publishing in India)
- Cross Journal Search Service
- SEED (Search Engine for Engineering Digital-repositories)
- Open J-Gate
- Knowledge Harvester

6.4 Open Access Journals

According to Velterop there are three criteria for a journal to be open access i.e. free accessibility to all articles, the depositing of all articles in an archive/repository, and a license granted for the right to copy or disseminate. Open Access Indian Journals aim to be

accessible for the people around the world as its audience. The webpage www.doaj.org provides a gateway for the Open Access journals available globally. In the list of Open Access Journals, India stands at the 6th position which is ahead of many other countries. Some of the organizations which publish open access journals in India are the following.

- ❖ Indian National Science Academy (INSA)
- ❖ Indian Academy of Sciences (IAS)
- ❖ Kamla-Raj

7. Conclusion

As the transformation of India into knowledge society will depend on a large extent, on its capacity to provide and sustain knowledge citizens. A more sincere effort is required from government side as education is lacking at all levels.

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Approaches to Information Seeking by Scientists of Defence Research and Development Establishment, India

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Abstract

This paper analyzes the information needs and information seeking behavior of Defence Research and Development Establishment (DRDE) working under the Defence Research and Development Organization (DRDO), Ministry of Defence situated at Gwalior (Madhya Pradesh). Data were collected using a structured questionnaire distributed among 134 DRDE Scientists. In the present study 130 responded to the questionnaire and collected data were analyzed using the latest version of ∑- PLOT for appropriate statistical methods (frequencies, per cent, means, and standard deviations). It was observed that various strategies and procedures have been used by the DRDE Scientists in meeting their information needs. The results revealed that DRDE Scientists have great dependence in meeting their information requirement on their respective institutional library/information centre.

Keywords: DRDO, DRDE, Information seeking behavior, Science Scientists.

1. Introduction

In 1924, the Maharaja of Gwalior established a research laboratory to explore forest products and mineral resources. In 1947, the Jiwaji Industrial Research Laboratory (JIRL) was inaugurated by C. Rajagopalachari, the then Governor General of India. In 1966, it was taken over by the Ministry of Defence and the research activities were expanded. In the year 1973, JIRL was renamed as Defence Research & Development Establishment.

DRDE is the primary defence laboratory involved in the development of NBC detection and protection systems. It conducts research in the fields of Chemistry, Biochemistry, Microbiology, Biotechnology, Virology, Entomology, Bio-sensors, and Toxicology. It conducts research on three different areas viz, Detection, Protection and Decontamination strategies against Bio-threat agents. Research activities on toxicological evaluations of hazardous chemicals and biological materials are also undertaken at DRDE.

2. Significance of Information Behaviors for Development

"Information" which is also called the "stock of knowledge" can be divided into two arenas based on whether or not it "diminishes uncertainty" or is "entertaining" [1]. In the first type, kind that is that is to be discussed in relation to organizational information behavior can be classified as "program" or "parameter information". Program information refers to the systematic way of thinking that is required to solve a given problem and parameter information refers to the data required to use the program information to solve a given problem [1]. While it is unusual for individuals to recognize these differentiation and is important to realize the evolving information process that occurs. Organizational information behavior then is simply the way in which information is obtained by individuals who are in specified system or setting.

Drucker states that the systematic and purposeful acquisition of information and its systematic and purposeful applications are emerging as the new foundations for work, productivity and efforts throughout the world. [2] Daniel responds to his statement by saying that "organizations exists only to provide the necessary rules for channeling and filtering information within an organization and from it out into the environment. [3] She continues by arguing that "organizational structure largely determines the information flow within the organization and the kinds of resources attended to. [3] Different functions or environment have different information needs, but organizations do have certain common characteristics that allow the information behavior of its members to be generalized. [4]

Information seeking behavior is the purposive seeking of information as a consequence of a need to satisfy some goal. [5]. An examination of these factors has implications for the managers who wish to restructure information behavior. In order to have effective results, management must have a detailed understanding of organizational dynamics and be aware of the staff's perceptions of the organization structure. [6] Knowledge about the information-seeking behavior and information use of individuals is crucial for effectively meeting their information needs [7]. A study of this nature is invaluable to anyone involved or interested in organizations, and is especially relevant to the information professions.

3. Objectives of the Study

The present study comprises the following specific objectives.

- To identify the purpose of seeking information, the nature and types of information required by Scientists of DRDE.
- To examine the information seeking strategies of DRDE Scientists.
- To find the effectiveness of existing information systems and services in the field of life sciences and the extent to which they meet the information requirement of Scientists.
- To identify, the information sources and types of publications used by the scientists, with particular reference to secondary and tertiary sources, and
- To identify the problems faced by the scientists of DRDE while gathering information and to provide appropriate suggestions to overcome them.

4. Scope and Methodology

A structured questionnaire was designed for the purpose of data collection and was distributed personally among the life scientists of DRDE. A total of 134 questionnaires were distributed, out of which 130 questionnaires were received back (97.01%). The data collected / were analyzed using the latest version of Σ-Plot, for appropriate statistical procedures for description of frequencies, percentage, means, and standard deviations, etc. Three-point scale and five-point scale were developed. Likert scale, which ranged from 0 (not important) to 4 (extremely important), was used in the present study.

The population of the study mainly comprised the scientists who are working in different laboratories of DRDE. Among total respondents, Scientist 'B' were 36 in number, Scientist 'C'- were 45, Scientist 'D' were 15, Scientist 'E' had 12, Scientist 'F' had 17 numbers. Scientist 'G' had four numbers and one Scientist 'H'. All the above scientists fell under four categories (Category-I, category-II, category-III and category-IV). Our data also indicates the gender distribution in DRDE with respect to different categories. Under Cat-I there were 26 male and 10 female employees.

Number of male employees under Cat-II were 50 and 10 female. Number of male employees under Cat-III were 27 and female were 02. Lastly the Cat-IV had only 05 male employees without any female employees.

4. Findings and Interpretation of the Present Study

4.1 Preference of Source

A number of possible sources of DRDE Scientists were identified and considered potentially relevant to help Scientists in meeting their information requirements. The preferences of Scientists for information sources and their accessibility have been conceptualized in terms of information seeking strategies in which they first access the most preferred sources, followed by other sources if the problem remains unsolved. It was found from the study that DRDE Scientists have expressed great dependence in meeting their information requirement on their institutional libraries / information requirement on their institutional libraries/information centre. From table 1 it is evident that, among first priority in use of Information sources, Library information centre is the most preferred source for 73.72% (87 out of 118) of the respondents for all categories of Life Scientists with a mean ranked from 2.66 to 1.98. Experts in the field were followed by 62.03 percent of the respondents (67 out of 108). Among the second priority, Discussion with Librarian/reference staff of library constituted 42.01% (50 out of 119) followed by Indexing and Abstracting journal with 44.44% (48 out of 108);Discussion with Supervisor constituting 37.03% (40 out of 108). The third priority in the use of information sources was opted towards consulting Bibliography by 67.6%of the total population (48 out of 71) occupying the first place. Followed by Discussion with Librarian/reference staff of library by 36.13% (43 out of 119); Discussion with colleagues elsewhere by 38.82% (33 out of 85).

Among different categories of Scientists, categories I and II give more priority to collect information by library visit/information centre with a mean of 2.80 and 2.51 respectively than the Scientists of categories III who opted for consulting indexing journal with a mean of 2.3. Whereas Category IV opted for discussion with expert with a mean of 2.08. Among all categories of DRDE Scientists prefer to visit library/information centre for information collection. Consult indexing journals source ranked second in order of priority. Discussion with experts in the field occupied third rank. Consulting review articles occupied fourth position in the priority ranking as seen in Table 2. Further the other sources of information such as discussion with colleagues elsewhere, Publisher's catalogue and consulting library catalogue, were found least significance. Table 2 shows the priority in the use of information sources with respect to different categories.

Table-1: Priority in the use of Information Sources

Information Sources	Priority (%)			
	I	II	III	Total
Discussion with				
Colleagues within the organization	58 (51.78)	34 (30.35)	20 (17.85)	112
Colleagues elsewhere	20 (23.52)	32 (37.64)	33 (38.82)	85
Librarian / Reference staff of your library	26 (21.84)	50 (42.01)	43 (36.13)	119
Experts in the field	67 (62.03)	33 (30.55)	8 (7.4)	108

Supervisor	47 (43.51)	40 (37.03)	21 (19.44)	108
Visit				
Library information centre / documentation centre	87 (73.72)	18 (15.25)	13 (11.01)	118
Consult				
Bibliography	10 (14.08)	13 (18.3)	48 (67.6)	71
Library catalogues	37 (45.12)	21 (25.6)	24 (29.26)	82
Publishers catalogue	16 (28.57)	22 (39.28)	18 (32.14)	56
Indexing and abstracting journal	44 (40.74)	48 (44.44)	16 (14.81)	108
Databases	26 (35.61)	25 (34.24)	22 (30.13)	73

Table 2: Priority in the use of Information Sources by different categories

Source of Information	Category					
	I	II	III	IV	Mean	Rank Order
Visit Library/ Information centre / document centre	2.8	2.51	2.14	1.98	2.35	1
Consult review article in a periodical	2.37	1.97	2	1.95	2.07	4
Discussion with colleagues within the organization	2.00	1.98	1.35	1.00	1.58	7
Consult indexing journal	1.98	2.00	2.31	2.32	2.15	2
Discussion with experts in the field	1.86	2.03	1.99	2.43	2.08	3
Consult bibliography	2.46	1.99	1.98	1.25	1.92	5
Discussion with librarian / reverence staff of your library.	2.6	0.98	0.7	0.45	1.18	9
Consult library catalogue	1.02	0.5	0.81	0.25	0.65	12
Discussion with supervisor	2.41	1.59	1.4	0.5	1.48	8
Consult indexing and abstracting journals	2.6	1.61	1.22	1.00	1.60	6
Publisher's catalogue	1	0.5	0.81	0.91	0.81	11
Discussion with colleagues else where	1.09	1.00	1.00	1.04	1.03	10

4.2 Strategies for Checking the References

Table 3 shows the extent of dependence on different sources for checking of references by the DRDE Scientists on their own effort gets the first rank. Checking original documents, Checking reference sources were placed second and third respectively by the Scientist of DRDE. The other high-ranking order was given to Experts in the field, supervisor had fourth and fifth place respectively. Dependence on colleagues and consulting library catalogues were ranked sixth and

seventh respectively by the respondents. Both the modes research assistant placed in eighth position. As Librarian is not available at DRDE, no scientist opted for this mode of dependence.

Table 3: Extent of dependence on different modes for collection of Information

Source	Extent of Dependence						
	Solely	Most of the time	Often	To some extent	Not at all	Weight Index	Rank
Own efforts	65	45	11	9	0	4.28	1
Checking original documents	33	68	10	16	3	3.86	2
Checking reference sources	24	51	13	40	2	3.42	3
Consulting the library catalogue	3	10	9	97	11	2.21	7
Expert in the field	19	27	33	42	9	3.04	4
Supervisor	75	3	80	112	89	2.88	5
Colleagues	18	21	36	30	25	2.82	6
Research Assistant	0	9	22	43	56	1.88	8
Librarian	0	0	0	0	0	0	0

Note: *Number of respondents is130* Weighted index is calculated as a 5-point scale with assigned as soley = 5, most of the time = 4, Often = 3, to some extent =2 and not at all = 1.*

4.3 Purpose Vs Need of Information Sources

A scientist's need of information, whether from print or other sources, arises due to three different reasons *viz.,* (1) to collect specific information on the subject of their research; (2) to keep up-to-date information on the subject and (3) for collecting background information. It is important to analyze these needs in order to understand what DRDE scientists have recently done or are doing. The need to keep up-to-date with the current progress is called the current approach. The second need arises during the course of work-a need for some specific piece of information. This need, directly connected with the research work or problem at hand, is called everyday approach. And the third need comes less often but is equally important. This is the need to find and check, through the relevant information system on a given subject for background information when the scientists start working on their scientific problem. This requirement can be called the exhaustive approach.

The DRDE Scientists makes use of a variety of information sources while seeking information for different purposes. Table 4 shows that a range of sources is used for obtaining specific information, keeping up-to-date and acquiring background information. The successive table enumerates the sources of information in the order of importance for purpose separately. From the present study it is evident that, Journals occupy the first rank for specific information followed by Conversation with colleagues and experts. Under Keeping Up-to-date information category, Journals take the first rank followed by attending conference/lectures/seminars etc as

second rank. Under acquiring background information, Year books/annual reviews etc took first rank followed by Conversation with colleagues and experts as second rank.

Table 4: Purpose Vs Information Sources

Information sources	For Specific information		For Keeping up-to-date information		For acquiring background information	
	No of responses	Rank	No of responses	Rank	No of responses	Rank
Journals	108	1	112	1	78	5
Abstracting journals	96	6	91	5	63	8
Indexing journals	91	7	78	8	51	10
Books, monograph, etc.	101	4	81	7	117	3
Bibliographies / library catalogues	91	7	12	13	35	11
Library acquisition lists	60	9	35	12	30	12
Technical / research reports	11	13	71	9	68	7
Workshop, seminar and conference proceedings	86	8	83	6	60	9
Pre-prints / reprints directly from authors	43	11	63	11	27	13
Databases	99	5	69	10	69	6
Attending lectures, conferences, seminars etc.	102	3	108	2	81	4
Conversation with colleagues and experts	106	2	81	7	121	2
Dissertations / theses	40	12	102	3	30	12
Year books / annual reviews, etc.	59	10	92	4	122	1

5. Conclusion

The study indicates that the DRDE scientists are much diversified in the information they seek, the sources they access and the use they make of the information. It is difficult to maintain support for the idea of a single mode of formal information channel. However, the journals have been ranked first for obtaining specific information and keeping up-to-date. It has been ranked, second with regard to acquiring background information. The preferences DRDE scientists have for these sources varied with characteristics of the individual scientist, nature of information needed, personal knowledge of sources and their accessibility. The most frequently used sources were those with good physical, functional, and intellectual accessibility. The users tend to use these information sources, which are personally known to them and also easily accessible, regardless of the quality of information. Information may be sought for a particular purpose in particular circumstances, or collected in advance because it is likely to be useful. It is of maximum use when it matches a need, which is highly specific. Thus, in view of above, it may be concluded that the working culture of the individual needing information, the importance placed on getting it, the facilities available for seeking it, the knowledge about these facilities, the judgment of their value,

the probability of getting what is wanted, all of these factors may affect information seeking behavior.

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Changing the Role of Knowledge Management is Support to the College Libraries

Patil FG **Prasanna Kumar H E**

Abstract

Knowledge management is perceived to offer a substantial enhancement of the role of the information professional. However, the confusion, variations and concerns expressed indicate that knowledge management is a difficult area still requiring significant exploration and development. It enables them to establish their identity with respect to a specific concept, program or set of tools. Further, the current lack of status of many information professions, and the uncertainty in many reasons for developing a more coherent and strategically relevant professional identity. However, the breadth of approaches represented just by this group of information professionals suggests commonality may be difficult to achieve within the profession, let alone outside.

Keywords: Knowledge management, Information, Digital library, Library professional

1. Introduction

The concept and name--"Knowledge Management"--was started and popularized in the business world during the last decade of the 20th century. It was the business world that first recognizes the importance of knowledge in the "global economy" of the "knowledge age". In the new knowledge economy, the possession of relevant and strategic knowledge and its unceasing renewal enables businesses to gain competitive advantage. The applications of knowledge management have now spread to other organizations including government agencies, research and development departments, universities, and others.

With the growing interest in knowledge management, many questions have been raised in the minds of librarians regarding: the difference between information and knowledge; between information management and knowledge management; who should be in charge of information and knowledge management; would librarians and information professionals with appropriate education and training in library and information science be most suitable for the position of "Chief Knowledge Officer" (CKO) in their organizations; and what libraries can do in implementing knowledge management.

Difference between information and knowledge?

Information	Knowledge
Processed data	Actionable information
Simply gives us facts	Allows making predictions, casual associations, or predictive decisions
Clear, crisp, structured and simplistic	Muddy, fuzzy, partly unstructured

Easily expressed in written form	Intuitive, hard to communicate, and difficult to express in words and illustration
Obtained by condensing, correcting, contextualizing, and calculating data	Lies in connections, conversations between people, experienced-based intuition, and people's ability to compare situations, problems and solutions
Devoid of owner dependencies	Depends on the owner

2. Knowledge Architecture

Wayne Applehans & associates mentioned the term 'Knowledge Architecture'. They said knowledge architecture represents organisation's formal recognition that it has important experience and expertise which it must preserve and use to its advantage. It encompasses three components:

- People
- Content
- Technology

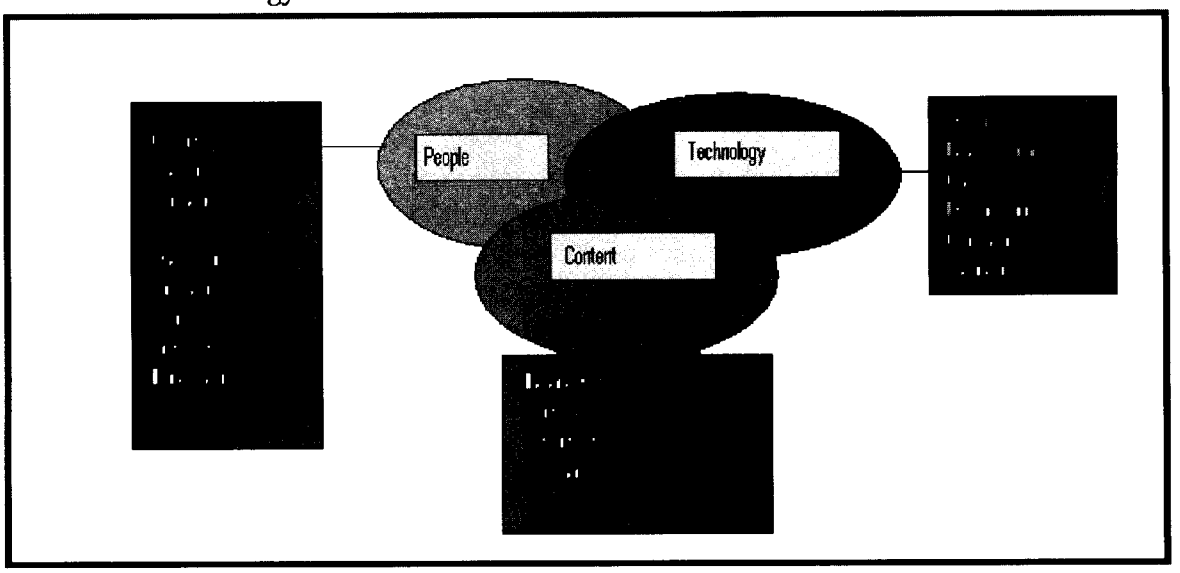


***Figure-1*: Components of Library KM Systems**

Knowledge architecture brings these components together into a powerful working relationship. KM is making practical use of knowledge to accomplish any organizational objective through the structuring of people, technology and knowledge content. Managing knowledge means blending each of the components into a cohesive unit whose main purpose is to understand the important content necessary to meet objectives, the key people who are the supplier and user of the content and the technologies appropriate to meet the KM objective. (Figure 1)

3. Knowledge Management and digital libraries

Digital revolution has transformed the intellectual function of traditional libraries. Digital libraries are providing the base for a set of distributed activities. It is also providing

a one stop solution for speedy delivery in a reliable fashion. Libraries are being digitised and patrons demand is growing the concept of content management has been adapted to the library world. More libraries are providing virtual references via the web.

4. Aims Knowledge Management

- To promote collection, processing, storage and distribution of knowledge
- To promote scientific research
- To promote relationship between library and users
- To protect the intellectual property right, in information technology era
- To create knowledge repositories and manage knowledge as an asset
- To organize the value of knowledge and improve effective research

5. Role of Library Professionals in Knowledge Management

The conventional role of library and information professionals was to collect, process, disseminate, store and utilize information to provide multidisciplinary services to the personal and professional needs of the library users. But now their role is not restricted to information management only. They play major role in knowledge management programmes and identifying, acquiring, developing, resolving, storing and sharing of knowledge. Library and information professionals have to manage relationships with external providers of information and knowledge and should negotiate with them. Knowledge management has created new ground in the field of library and information science. The library professionals should have following types of knowledge:

- Knowledge about library's information sources for assets, products and services.
- Knowledge about where these sources stored are and what is its use.
- Knowledge about users including teaching staff, researcher and, who is using these sources and how to increase its uses.
- What are the current usage of these sources and how to increase its use?
- Creativity and ability to learn and adapt the new technologies to provide better services to its clients and ability to create, share, harness and utilize knowledge
- Understanding of knowledge creation process and impact of knowledge
- Information literacy skills creating, finding, sharing and using
- Understanding of the principles of "Organization of Knowledge"

5. Knowledge management in libraries

While the business world is changing in the new knowledge economy and digital age, libraries of all types are undergoing drastic changes also. The new role of libraries in the 21st century needs to be as a learning and knowledge center for their users as well as the intellectual commons for their respective communities where, to borrow the phrase from the Keystone Principles, "people and ideas interact in both the real and virtual environments to expand learning and facilitate the creation of new knowledge."

5.1 Knowledge resources management

The exponential growth in human knowledge in a variety of formats, libraries need to develop their resources access and sharing strategies from printed to electronic and digital resources in concert with their mission and charges. Restricted by limited funding, technology, staff, and space, libraries must carefully analyze the needs of their users and seek to develop cooperative acquisition plans to meet these needs. The changing concept from "ownership" to "access" and from "just in case" to "just in time" should be the goal of a sound resources development strategy.

An integrated online public access catalog (OPAC) with both internal and external resources as well as printed and other formats of knowledge should be developed and maintained. Useful websites and knowledge sources should be regularly searched and selected from the Internet and included in OPACs by hard links. A system for the reviewing and updating of these resources should be performed.

Going beyond explicit knowledge, libraries should also develop means to capture all that tacit knowledge that is of importance to their users, their organizations, and to the internal operation of libraries. The web site of each library should serve as a portal for all sources of selective and relevant knowledge and information whether explicit or tacit, whether on site or remote, and in all formats.

The term "portal" has been defined by Michael Looney and Peter Lyman as "a means of gathering a variety of useful information resources into a single, one-stop Web page, helping the user to avoid being overwhelmed by infoglut or feeling lost on the Web."

In the current digital and networked knowledge age, the size of information resources on the Web is growing exponentially.

5.2 Resources sharing and networking

Libraries have had a long tradition of resources sharing and networking. These have been greatly expanded by the rapid development of computer, telecommunication, networking, and digital technologies since the 1960s. In the U.S. it is very common for libraries to be a member of several consortia at the same time for various types of cooperative work and resources sharing. The best examples of these are the OCLC Online Computer Library Center.

5.3 Information technology development

To facilitate the implementation of knowledge management, a well-designed and operational knowledge management system should be in place. Latest information technology should be used as an enabler. Such a knowledge management system should be built on existing computer and information technology infrastructures, including upgraded intranet, extranet, and Internet, and available software programs to facilitate the capture, analysis, organization, storage, and sharing of internal and external information resources for effective knowledge exchange among users, resource persons (faculty, researchers, and subjects specialists, etc.), publishers, government agencies, businesses and industries, and other organizations via multiple channels and layers.

5.4 User services

The utmost goal of knowledge management is to provide users with a variety of quality services in order to improve the communication, use and creation of knowledge. Information about each user can be obtained by analyzing the records of user registration, surveys, circulation and interlibrary loans, frequently asked reference questions, and the use of e-journal and digital resources, etc. User satisfaction and needs should be collected through periodic users' surveys. The findings should be used for the planning and redesign of library services. It is very important, however, that user's privacy should always be protected.

Some of the manual services such as "new publication alert" and "selective dissemination of information," which libraries have been providing, can now be done automatically by employing the "push technology" with great efficiency and convenience. Each library user can also set up his/her virtual "MyLibrary" enabled by library systems and networks for collecting and organizing resources for personal

5.5 Human resources management

A great amount of expert knowledge is possessed by library staff and users, both in and outside the libraries. The knowledge and accumulated experiences of library staff members form the intellectual assets of any library and should be valued and shared. An organizational culture for sharing of knowledge and expertise should be established with appropriate rewards and incentives.

6. Suggestions

The IT and knowledge need to work together and focus on getting the right information to the right people at the right time. The entire librarian and information scientist community should have knowledge management strategy or framework to use the IT to disseminate the information as demanded or required. The following points are identified for the better implementation of knowledge management in libraries mostly in Academic Libraries:

- To provide sufficient budget
- To provide special fund for the new technologies
- To equip library with new technologies with network facility
- Inter change of technical staffs among organizations/ libraries
- Staff sharing to develop their professional skills
- Organize a training programme and inter-change of staff for time being on National level (at least once in every two year for two months)
- UGC may establish a monitoring centre specially for libraries to monitor the standardisations of library and provide assistance

7. Conclusion

Knowledge management presents a major shift in focus regarding the development and use of knowledge and information in increasing the effectiveness of Library. Library to

succeed in implementing knowledge management will require a strong leadership and vision from the top administration, which can influence the organization's knowledge sharing efforts in a positive way. As libraries enter the knowledge age of the 21st century, we should not take a back seat in the development of knowledge management. Instead, armed with our professional knowledge and experiences, we should be in the driver's seat.

Information technology and systems can provide effective support in implementing knowledge management. Librarians should work together with IT professionals and others to develop the appropriate knowledge management systems.

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Effective Knowledge Management (EKM): A Changing Dimension of LIS Professionals in the 21st Century

Shekar H P **Nirmala Chigateri SG**

Abstract

The present century is considered as a knowledge society, to create a vibrant knowledge society libraries should play a vital role to create and sustainable knowledge society while identify, locate acquire, process and disseminate all types of knowledge resources for the benefits of users community. Libraries must carefully analyze the needs of their users and seek to develop cooperative acquisition plans to meet their needs. The changing concept from "ownership" to "access" and from "just in case" to "just in time" should be the goal of a sound resources development strategy. In this paper authors highlights the key factors like - Characteristics, objectives of Knowledge Management, HR and IT related requirements for a successful Knowledge Management in the Libraries. Further the paper examines the role of librarians and libraries in knowledge management.

Keywords: Knowledge, Management, User services, Libraries, Information technology

1. Introduction

In the current digital and networked knowledge age, the size of information sources on the web is growing exponentially. No one really knows exactly how many web pages are on the internet, because new web pages are added every second. Universities and research organizations are knowledge reservoirs. These highly valued intellectual assets, regardless of whether they are explicit or tacit, should be inventoried, archived, indexed, frequently updated and made accessible in digital form. Librarians should use the new approach to capture web information by Co-operative efforts such as Dublin core metadata and the cooperative online resources catalogue (CORC). Other new methods such as data mining, text mining, content management, search engines, spidering programs, natural language searching, linguistic analysis, semantic networks, knowledge extraction, concept of yellow pages, and such technologies in information visualization as two dimensional or three dimensional knowledge mapping etc., have been a part of recent developments in knowledge management systems. To borrow the phrase from the Keystone Principles, *'people and ideas interact in both the real and virtual environments to expand learning and facilitate the creation of new knowledge'.*

2. Characteristics of knowledge management in libraries

The role of Knowledge Management in Libraries will become more and more important along with the development of knowledge economy. It is a new management mode. The following superiority and characteristics are incomparable with conventional management.

2.1 IT as a tool for Knowledge Managementt

2.2 HRM in Knowledge Management
2.3 User Services in KM

2.1 IT as a tool for Knowledge Management

Knowledge acquisition is the starting point of knowledge management in libraries. The application of information technologies enlarges the scope of knowledge acquisition, raises knowledge acquisition speed and reduces knowledge acquisition cost. It is impossible to accomplish such important tasks by using man's brains only in the modern society in which the knowledge changes with each passing day. It will be possible to link closely knowledge sources and knowledge workers by computer networks, thus constructing knowledge networks in libraries based on realization of single-point information. To facilitate the implementation of knowledge management, a well-defined and operational knowledge management system should be in place. Latest information technology should be used in the libraries. In this regard, the library director / librarian should consider himself as the *Chief Knowledge Officer* of the entire organization and should work together with the chief information officer, heads of the planning department, the computer and information technology center, the human resource management department, the finance department etc., to design and develop such a system. Such knowledge management system should be built on the existing computer and information technology infrastructure including upgraded intranet, extranet, internet and available software programs to facilitate the capture, analysis, organization, storage and sharing of internal and external information resources for effective knowledge exchange among users-resource persons (faculty, researchers, subject experts etc.,), publishers- government agencies- business and industries and other organizations via multiple channels. In recent years, many of the newly developed information technology for Data bases and information /document management can be utilized in knowledge management such as data warehousing, data mining, text mining etc.,

2.2 Role of HRM in Knowledge Management

In the knowledge economy era, the libraries will attach importance to vocational training and lifelong education of library staff to raise their scientific knowledge level and ability of acquiring and innovative knowledge. They also will respect the human value, guide and bring into play wisdom potentialities of library staffs. It is an important way for raising work efficiency of library staff. An all round improvement of library staff's quality and positioning of the human value will become important objectives of knowledge management in Library and Information centers. The library staff members should be inventoried, indexed regularly and be made searchable and accessible through electronic databases created and maintained by libraries. The expertise should be appreciated with appropriate rewards and incentives. As a learning organization, libraries should allocate annual funding to provide continuing education and staff training to all staff members.

The transfer of knowledge and experience from experienced staff to new staff members should be encouraged by the library. A mentoring system should be in place to help new comers to learn from experienced library staff. Informal seminars, discussion

sessions for staff can interact and exchange "lessons learned" "best practices" and other experiences should be scheduled at regular intervals and at convenient times.

2.3 User Services in Knowledge Management

Knowledge dissemination is of equal importance as compared to knowledge innovation. Knowledge creators do not have much time and energy to look for knowledge users. Though there are a multitude of knowledge users, it is very difficult to acquire knowledge that already exists in the minds of knowledge creators as restricted by various objective and subjective conditions. Therefore, libraries may play the part of knowledge toss, use diverse media and channels to disseminate new knowledge. The utmost goal of knowledge management is to provide users with a variety of quality services in order to improve the communication, use and creation of knowledge. Information about each user can be obtained by analyzing the records of user registration, surveys, circulation and inter library loan, frequently asked reference questions and the use of e-journals and digital resources etc., User satisfaction and needs should be collected through periodical user's surveys. The findings should be used for the planning and redesign of the existing library services. Some of the manual services of the library such as "new publication alert" and "dissemination of information" should be done automatically by employing the "push technology" with great efficiency and convenience.

In the 21st century, the Internet, with its mass information and extensive contents, will provide people with the main approach to searching knowledge and acquiring information. But now there emerge absurd, salacious, false and uncivil information resulting from seeking for commercial profits and political objectives on the Net. Therefore, it is necessary to strengthen knowledge dissemination management in libraries as follows:

- Uninterruptedly strengthening the creation of libraries' own document resources and deepening the development of document information resources;
- Continuously raising the quality of libraries' staffs and strengthening continuous engineering education of working staffs;
- Giving full play to the special role of the expert system in knowledge dissemination; making a comprehensive utilization of all media to ensure security of operation of networks, and prevent online criminal activities and online dissemination of inappropriate information.

As much as possible these services should be tailored to the interest and needs of each user. It is very important, however, that user's privacy should always be protected.

3. Objectives of knowledge management in libraries

The motto of KM is to Promote Knowledge Innovation. Knowledge innovation is the core of the knowledge economy society. As bases for collection, processing, storage and distribution of knowledge and information, libraries represent an indispensable link in the scientific system chain, an important link in the knowledge innovation. Secondly, libraries take part in scientific research process directly. The library work is a component of knowledge innovation. Thirdly, libraries must pay attention to diffusion and conversion of knowledge. They act as bridges for turning the results of knowledge innovation into

realistic productive forces. Knowledge management in libraries is to promote relationship in and between libraries, between library and user, to strengthen knowledge internetworking and to quicken knowledge flow. In the knowledge economy era, libraries will carry out researches on development and application of information resources, construction of virtual libraries, protection of intellectual property rights in the electronic era etc., thus founding the base for knowledge innovation.

4. Introduction of the chief knowledge officer (CKO) system

The Chief Information Officer (CIO) is a conspicuously high management position that has emerged successively in the government departments and large organizations in Western countries since the 1980s. The Chief Knowledge Officer (CKO) is the highest-ranking person in charge of knowledge management, which has evolved from CIO along with the transition of information research management into knowledge management. The CKO system represents the latest development trends of the information management system of the organizations, and marks the transition of information management from the stage of information resources management to that of knowledge management. Realizing seamless combination of library business management with knowledge management during the business process reorganization of libraries, Knowledge management integrates itself with the whole process of knowledge exchange, sharing, innovation and application of the organization, and becomes the key driving force for the knowledge innovation, exchange and application of the organization. The implementation of knowledge management will inevitably give rise to organization of library business process. This reorganization will also be the process of further combination of library business management with knowledge management.

5. Conclusion

To facilitate the implementation of knowledge management, a well-designed and operational knowledge management system should be in place. Latest information technology should be used as an enabler. In this regard, the library director should consider him/her self as the chief knowledge officer of the entire organization and should work together with the CIO, heads of the planning department, the computer and information technology center, the human resources management department, the finance department, etc. to design and develop such a system. Such a knowledge management system should be built on existing computer and information technology infrastructures, including upgraded intranet, extranet, and Internet, and available software programs to facilitate the capture, analysis, organization, storage, and sharing of internal and external information resources for effective knowledge exchange among users, resource persons (faculty, researchers, and subjects specialists, etc.), publishers, government agencies, businesses and industries, and other organizations via multiple channels and layers. In recent years, many of the newly developed information technologies for database and information/document management can be utilized in knowledge management; such as, data warehousing, data mining, text mining, content management, knowledge extraction, knowledge mapping, groupware, and information visualization, etc.

Finally, one of the aims of knowledge management in libraries is to promote the knowledge exchange among library staffs, strengthen innovation consciousness and abilities, and arise the library staffs' enthusiasm and abilities for learning, making the knowledge most efficiently applied to business activities of the library, and rebuilding the library into a learning organization. Therefore, the main train of thought in realizing knowledge management of libraries is a rational design of the organizational structure and business procedures of libraries, and cultural fostering, as well as modernized information support, thus creating an environment and incentive mechanism for innovation, exchange, study and application of the knowledge.

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Effective use of electronic resources: A case study of Institute of Management Education and Research

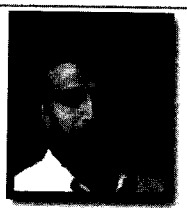
Kulkarni Sunil N

Abstract

The library and information centers have changed drastically over the years from mere static storehouse of reading materials to dynamic service oriented information and knowledge resource centre. The increased availability of electronic and web based information products and services provide new opportunities as well as challenges for LIS professionals to provide effective and efficient information sources and services for the user community. On the other hand the application of information and communication technology(ICT) making new path to provide web and online based information products and services to the ICT savvy users. This study was conducted to know about changing behavior of users from traditional library to digital library. A questionnaire covers more than 180 students and all the teaching members of IMER regarding their opinion about print and electronic reading resources, services, etc. With the advancement of modern technology more and more information is available on-line and in the form of databases. The conversion of the traditional to digital form in library is taking place. This article tries to present different aspects related to digital library such as cost, users satisfaction & their changing taste, impact on staff, collection development etc..

Keywords: Collection development, Information seeking behavior, E-resources, Digital library

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Electronic resource management (ERM) in a networked environment: an overview

Siddanagowdar HN

Abstract

Today we live on a knowledge society, where the information is available to the user as they require. The revolutionary innovations of information and communication technologies have changed the ways in which people think, communicate and share knowledge Libraries today introduce many new services, either by converting existing services into e-resources. Thus librarian as knowledge manager can provide value added information to their user's community. The impact of electronic information has been all pervading. It has changed the way we perceives of and disseminate information and has even threatened the traditional approaches to library and librarianship .It is now an age of electronic document ,changed publication media, publishing on network, publishers and on-line booksellers, new electronic market, electronic commerce, new communication scene, electronic journals, Internet and the World Wide Web, database producer's use of web interfaces, newspapers on Internet etc, Librarian should be ready to understand the new technology only then they could disseminate information to the users. In this paper, a brief overview of the role and responsibilities of librarian and knowledge society innovations in Librarianship in the electronic information era is presented.

Keywords: Knowledge management, E-resource management, Archival management, Digitization, E-publishing, Access management

Authors Profile



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Electronic resources management system in libraries with reference to KMC health sciences library, Manipal

Baikady Mahabaleshwara Rao **Ankita Sinha**

Abstract

E-resources have marked an impressive footprint in managing library and delivering the information services to the end users. There are few technical hurdles such as; performance of technology, timely access, user interface, troubleshooting, skilled manpower etc. have made the e-resources more complex in managing information and delivering services. To overcome these issues the library and information system require an effective and efficient Electronic Resource Management System to assist the librarian in managing the e-resources. Since last two decades, the information and communication technologies have equipped the librarian with certain e-tool to provide the e-resources services to the end users in an effective and efficient manner. The Health Sciences Library of Kasturba Medical College, Manipal is a pioneer in providing services to the faculties and students of various disciplines. The library has large volume of e-resources in terms of book, journals and other online database to cater the need of library users. This paper makes an effort in providing the details on the Library Micro Site and ERMSS - an integrated e-resources management and search solution software which has provided for effective management of e-resources held by the KMC Health Sciences Library.

Keywords: E-resources, Management, Health Sciences Library, Library Micro Site, ERMSS

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Information Technology and Its Application to Libraries

Shylarani B **Khaisar M Khan**

Abstract

Technologies have always been of great fascination to any organization and libraries are not an exception to this and in this era of information technology and knowledge based society the requirements of present day reader has not only increased, but it has changed drastically. In this regard, this paper attempts to deal with information technology tools that are applied in the libraries and also their implications. This paper throws light on the impact of information technologies on library operations and information services.

Keywords: Information Technology, Information Services, ICT

1. Introduction

The pace of change brought about by new technologies has had a significant effect on the way people live, work, and play worldwide. Information technology, while an important area of study in its own right, is having a major impact across all curriculum areas. Information technology has transformed the whole world into a global village with a global economy, which is increasingly dependent on the creative management and distribution of information. The advancement of science and technology has made a tremendous improvement and change almost in all walks of life especially the libraries. The growth of information explosion has resulted in the application of information technology to library activities. Information technology covers all activities and technologies that involve the handling of information by electronic means i.e. processing, transmission, and control. With the introduction of modern information technology in libraries, the role of library and information science personnel is undergoing a qualitative change.

1.1 Application of IT in Libraries

The management of massive volume of information and its proliferation into many forms has created the problems of storage, processing, retrieval, and dissemination in libraries. The evolution of modern technologies has greatly improved the capabilities of managing this explosive growth of information effectively. Libraries have tried to overcome the problems of information management by adopting modern technologies such as computer technology, CD-Rooms, networks, etc. Libraries have long sought technological aids to facilitate and enhance their services. Some of the major factors that contributed to the introduction of computers in Indian libraries include Greater Speed, Increase in efficiency, Capability to handle large volume of data, flexibility to numerous manipulations, improved quality in service and to enhance the prestige (Kumar P.S.G. 1987).In libraries, several systems have been developed for their various house-keeping chores and more still are being designed and refined, due to the technology of large-scale integration. These are known as microcomputers; designed to handle any of the library processes like

acquisitions, cataloguing, serials control, circulation control, bibliographic control, or Selective Dissemination of Information. Application of information technology helps in the acquisition, organization, storage, and dissemination of information in libraries.

Information Technology can be used in Libraries and Information Centers for the development of new information services and computerized library services. It is useful for:

- Improving productivity and efficiency of library services effectively (i.e. acquisition, technical, processing, circulation etc.);
- Provision of quality information (e.g. CAS, SDI etc.);
- Saving the space using the electronic storage (e.g. CDs and CDROMs) and faster accessing of information;
- Provision of the extensive information and maintenance; and
- Improving of cooperation in sharing of resources (e.g. shared acquisition, shared cataloguing etc.).

2. Impact of IT on Library Services

Information technology has profound impact not only on library operations and services but also on staff competencies and user expectations. IT has radically transformed the way of functioning and management of modern libraries. It has greatly enhanced the capabilities of libraries to improve the efficiency of their operations and offer innovative and intelligent information services to their users. Information technology has influenced the very nature of business and management libraries. The conventional set up of brick and mortar libraries that store information within a constrained physical space have given way to data centers that integrate data sources around the globe by the means of networking. With the advancement in technology and its direct application to libraries, management libraries are becoming lean and agile libraries that streamline information supply. The pervasive nature of Internet, coupled with platform independent database connectivity, is making library portals more and more effective. The technological tools for disseminating information have progressed from conventional books and journals to electronic journals and online databases, making it possible to explore the worldwide pool of knowledge while sitting at one's desk or at home (Ashcroft and Langdon 1999).

Some of the other important changes that IT has brought out in the services of libraries are

- Changes in formats, contents and methods of production & delivery of information products, and a new business model for use of information products. This requires procedural and infrastructural changes and cost implications in Libraries.
- Emergence of Internet as the largest repository of information and knowledge.
- Extinction or significant transformation of some of the conventional information services such as press clippings, contents pages, company information etc.
- Use of new tools and technologies for dissemination of information.

- Transformation of role of LIS professional as the subject specialist and end-user gets directly involved in the information work and consequent need for new skills.
- Libraries without walls "virtual libraries" which use the technology of virtual reality.
- Availability of information resources to end-users with less need for professional intermediaries.
- Availability of electronic journals, conference book, discussions and newsgroups.
- More dependence on resource sharing than collection development.

Libraries are using IT in general and computers in particular to automate a wide range of administrative and technical processes, build databases, networks and provide better services to their users. The use of IT for better management of information within libraries has grown significantly in recent years. The impact of information and communication technologies on librarianship and library service has long term an inviting subject for discourse at professional conferences and in professional literature.

3. Conclusion

Information technology has virtually unlimited potential for variety of useful applications in libraries. The emerging information technologies can handle data which a human being cannot. It has become an integral part of all library information resources, operations and services. Modern technologies would not only make existing library collections available, to participate actively in global networks for exchange of information, but also sharing the resources. However, the application of IT in the libraries depends on many factors like management supports, adequate financial resources, staff-cooperation etc. Libraries intending to use IT to Library operations have to plan well in advance for successful implementation and to minimize risks. Librarians are instrumental in the successful planning, identification, implementation, and utilization of the emerging new technologies to the fullest. Librarians should make an effort to educate policy, makers, administrators, and make them to understand the importance of IT and indispensability of information in supporting research, education and decision making.

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Issues Concerning the Management of Reusable Learning Repositories [e-content]: A Library Perspective

Rajatha Bhandi M K Sooryanarayana Bhat P

Abstract

The digital [non-book] collections not only are handy to store and access but also efficient in terms of its utility. Having great potential in Computer Assisted Learning [CAL] packages, University Grants Commission [UGC] has directed the Consortium for Educational Communications [CEC], New Delhi to develop vast repository of Reusable Learning Objects [RLO]. Far and wide reach and access of such E Contents strengthen the ideal of UGC in building a Knowledge Society. The paper, understanding the objectives set by UGC and CEC, tries to explore the issues concerning the management of such Reusable Learning Repositories [RLR] at individual libraries.

Keywords: CEC, RLR, UGC, E Content, Knowledge Commission

1. Introduction

After the introduction of ICT in managing library resources, a number of far reaching results are being witnessed. Most importantly the library functions are automated and digital resources began to stack as non-book collections. In the second decade of the twenty-first century when the administrative heads of the library resources refer to this development, they have umpteen number of options wide opened with the ICT.

2. UGC Schemes

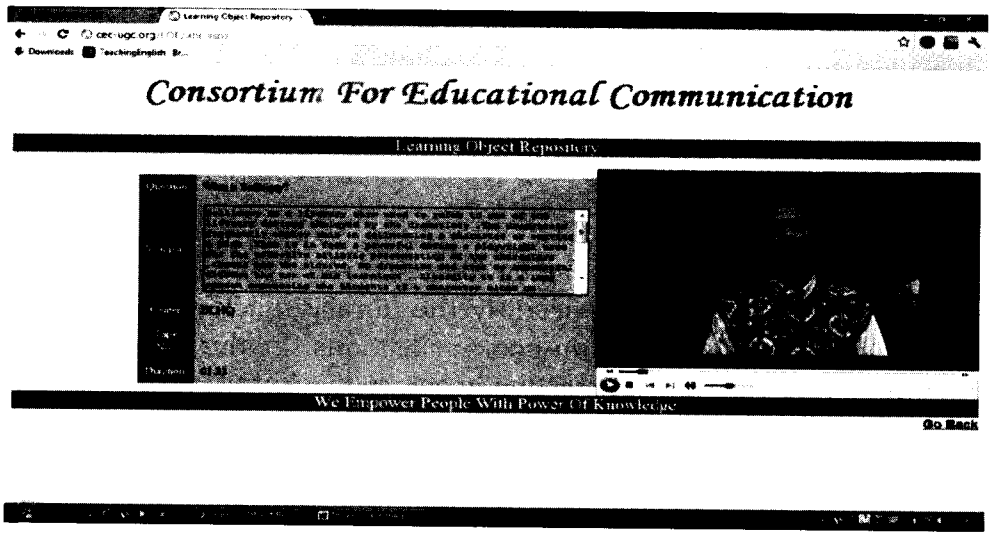
Parallel to the Commission and its report, in order to ensure higher participation of the youth in education, Ministry of Human Resource Development has planned multifariously. The 11 plan has funded generously on the academic initiatives and infrastructural developments. Libraries were the direct beneficiaries of the same. All activities aimed directly into higher enrolment of youth in Higher Education [expectation is up to 13%!!]. In the modern education system, not everyone is gifted with the education facilities. Due to some unavoidable circumstances learners have to depend upon distance education. With the technological scenario virtual classrooms may be witnessed. In every aspect, the education system is strengthening the access to education.

2.1 CEC Module

In this connection, Consortium for Educational Communication [CEC] has taken ambitious venture in establishing a vast repository of such Learning Object Repositories [LOR]. They aim at facilitating the heuristic learning of the individuals far and wide. These LORs are of two types. First – a short video recording with a definition of a topic and one or two examples. Second – E content. E Contents are elaborate and detailed treatment of a topic of a subject with answers to almost all the quarries of a learner of that subject.

2.2 LOR Design

An LOR is an E content with a definition or an answer to a given question or topic. In short it may be considered an information bite. Such pieces of information often draw the learners to accuracy and precision in understanding the subject. While composing an LOR the producer or a developer raises a question and figures out answer to it. LORs shall have a textual answer and an audio visual presentation if the same. Hence the CEC is planning to develop and establish as many LORs as possible in each subject which provides technical and precise answer to the questions raised. CEC Website: http://cec-ugc.org/ for technical convenience, the CEC has developed a searching option with three options. The readers may hit any one of the known (or more) and filter the search. As an added advantage of the webpage developed, the LORs have a hyperlinked table of content. Hence the readers are provided with horizontal mobility to access the study materials developed.



The above screenshot clearly depicts the topic, explanation and the visuals developed; including the details of the production. The button 'Go Back' takes the viewer to the home page of the LOR Search.

2.3 E Content

Under the thesis statement 'learning anytime, anywhere' CEC has developed a compendium of E Contents. Its link is available in the home page of the CEC website [http://cec-ugc.org/]

2.4 E Content Development and Design

CEC has organised a series of training programmes calling interested and eminent faculty members for various parts of the country to its headquarters. In the rigorous three week training programmes, the trainees are provided with the hand on experience in handling the technological tools in developing the contents in electronic form. Including the 2D animation, the trainees have a residential training programme on number of computer based training modules. As a culmination of intellectual and technological inputs, the E Contents meet the needy requirements of most of the learners.

2.5 Accessing the E Content

The collection is provided with topic search and the subject search. The viewer may also provide a keyword for search result so as to avail as many interdisciplinary topics as possible. Further the search results are tabled for the viewer's convenience and further reference.

2.6 E Content Design

The advantage of the E Contents are visualised immediately. A separate window pops up for viewing the E Content. As a result it functions unilaterally without hindering the access of the other tabs opened. Far advanced from the LORs, the E Contents provide a host of information such as Home, Contact, Objectives, Summary, Video/Audio, Text, Assignment, Reference, Download, Blog etc.

All the topics of discussion in the E Content directly infuse the learners to enable a heuristic learning. All these lectures are developed by the eminent scholars in the specified field and scrutinised at different levels for quality assessment. Hence to materials are internationally acceptable. These materials are not syllabus specific; however, they are subject specific. Hence they claim the universality.

The series of lectures delivered provide the viewer sufficient information to understand the subjects. The activities such as assignments, quiz, FAQs, and the audio visual materials enable the viewer to learn on their own. The downloadable materials provide ample scope for reading the text. The bibliography provided and the blogs related to the subject further enable the viewers to have a panorama of the subject.

The search provision in the E Content makes the viewer to peep into the minutes details of the concept. Hence each and paraphernalia presented in the electronic format provide the kaleidoscopic vision. Further, the lectures may be viewed n number of times and rehearsed unlike the regular classroom lectures.

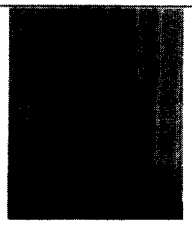
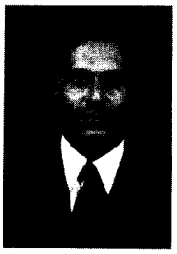
3. Conclusion

Library as an institutionalised setup for book and non-book collections has much to learn from the methodical development of the design for the collection of Non-book materials. Including the huge server base and high-end computing facility for access, CEC has every answer for the modern technological advent in providing education to everyone, everywhere. The free access to view and download the content further substantiates India's move towards building the Knowledge Society.

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Knowledge Management and Role of Libraries and Librarians: A Study

Sudha S T **Harinarayana N S** **Suresh Jange**

Kavitha **Tressy Menezes**

Abstract

The libraries will attach importance to vocational training and lifelong education of library staffs to raise their scientific knowledge level and ability of acquiring and innovating knowledge. They also will and fully respect the human value, guide and bring into play wisdom potentialities of library staffs, take developing knowledge resources in the brains of library staffs as an important way for rising work efficiency. An all-round improvement of library staff's quality and positioning of the human value will become important objectives of knowledge management in libraries. This papers deals with Knowledge management system, contents, objectives, key ideas of KM etc. This paper also deals with the role, skills, image of librarians, Knowledge management system's vision.

Keywords: Knowledge management, Organizational framework, HRM, LIS

1. Introduction

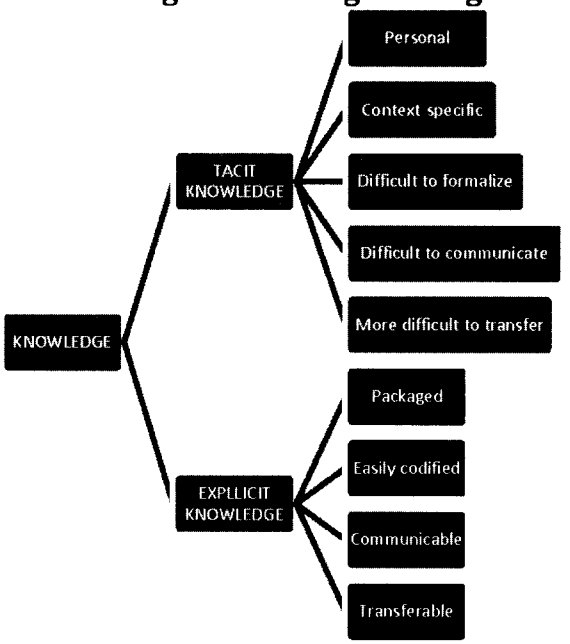
Knowledge management is a discipline that promotes an integrated approach to identifying, managing and sharing all of an enterprise's information assets. These information assets may include database, documents, policies and procedures as well as previously unarticulated expertise and experience resident in individual workers. Knowledge management issues include developing, implementing and maintaining the appropriate technical and organizational infrastructure to enable knowledge sharing... According to the literature, many librarians still believe that knowledge management is simply managing information and explicit or documented knowledge, which is what they have been doing for many years, and that eventually everyone else will deduce this. Information is simply contextualized data. To become knowledge, there needs to be an added human element. Information tends to be tangible, whereas knowledge is information that is interpreted and synthesized. In addition, many librarians seem to be missing the point that KM encompasses the whole organization, not just the bits in the library, and it includes tacit knowledge, as well as explicit. Any KM program must be aligned to corporate goals, and so strategic thinking and alignment is part of the process.

2. Knowledge Management in Libraries

Knowledge management is the identification and communication of explicit and tacit knowledge residing within processes, people, products and services.' Knowledge management in libraries normally focuses on effective research and development of knowledge, creation of knowledge bases, exchange and sharing of knowledge between library staffs and its users, training of library staff, quick processing of knowledge and

realizing of its sharing. Knowledge starts as data- raw facts and numbers – for examples, the market value an institution's endowment. Information is data put into context – in the same example, the endowment per student at a particular institution. Information is readily captured in documents or in databases; even large amounts are fairly easy to retrieve with modern information technology systems.

Fig.1 Knowledge Management



Libraries deal with the document, information and knowledge. Knowledge can be divided in to two categories, Tacit knowledge and Explicit knowledge. Tacit knowledge is the 'know-how' acquired by persons. It is usually intuitive and generally demonstrated in how an individual makes accomplishment in his work, even though this knowledge is not recorded anywhere. But one of the goals of the knowledge management is to make tacit knowledge more widely available. Explicit knowledge is systematically documented records in any kind of format, which guide the users to gain the knowledge, as the individuals need and to expand the knowledge base further.

3. Objectives Of Knowledge Management

- Is to promote knowledge innovation. Knowledge innovation is the core of the knowledge economy society. As bases for collection, processing, storage and distribution of knowledge and information, libraries represent an indispensable link in the scientific system chain, an important link in the knowledge innovation.
- Secondly, libraries take part in scientific research process directly. The library work is a component of knowledge innovation.
- Thirdly, libraries must pay attention to diffusion and conversion of knowledge. They act as bridges for turning the results of knowledge innovation into realistic productive forces.

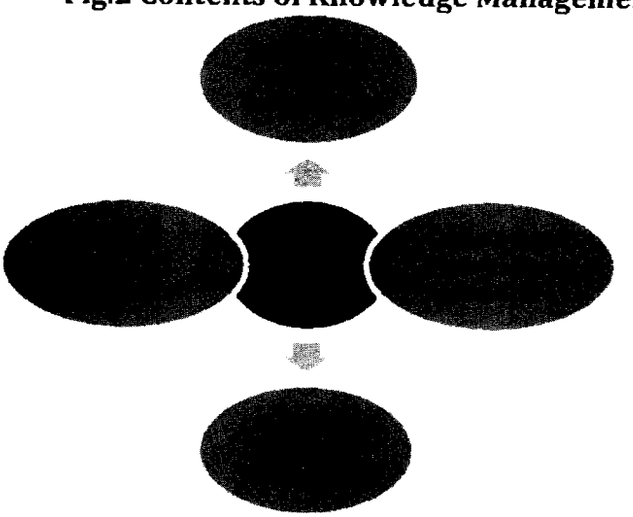
- Knowledge management in libraries is to promote relationship in and between libraries, between library and user, to strengthen knowledge internetworking and to quicken knowledge flow. In the knowledge economy era, libraries will carry out researches on development and application of information resources, construction of virtual libraries, protection of intellectual property rights in the electronic era etc., thus founding the base for knowledge innovation.

4. Key Ideas of Knowledge Management

The term "knowledge" creates an vagueness *"Knowledge is experience. Everything else is just information"*, said Albert Einstein. Knowledge cannot be drawn up like water from the bottom of a well. It is not made up of independent pieces that can be picked out as in a spare parts shop. It comes necessarily with the acceptance of shared values that legitimize the knowledge.

- Managing information related to experience and skills: recording that information in document databases; ensuring that is available through sophisticated arrangements for seeking out information (data mining); possibly adding to other tools for the conservation of expertise, such as expert systems;
- Furthering the emergence of networks of colleagues sharing knowledge and motivation (communities of practice); using computer applications based on mailing lists, online forums and group-enabling technologies [19], to run the networks;
- For knowledge sharing (KS), we shall add information (knowledge) sharing among several donors and information (the same information?) sharing among donors and their clients or partners.

Fig.2 Contents of Knowledge Management



Knowledge management is a discipline that promotes an integrated approach to identifying, managing and sharing all of an enterprise's information assets. These information assets may include database, documents, policies and procedures as well as previously unarticulated expertise and experience resident in individual workers. Knowledge management issues include developing, implementing and maintaining the appropriate technical and organizational infrastructure to enable knowledge sharing.

5. Organizational Learning and Knowledge Management

Knowledge management does not only rely on technology to make processes more efficient. It recognizes that knowledge resides with people and that technology is merely the enabler. The foundation of KM is the power of learning. No organization can improve without learning something new. Knowledge management is consistent with the currently emerging models of organizations, which involve people working in teams, coming together on a project basis, them moving on the new relationships. Knowledge clearly underpins these activities.

Providing intellectual access to information is a role librarians have filled for a long time. Traditionally librarians have done this via print-based resources. During the second half of the twentieth century the range of available resources expanded to include microform, video and audio formats. The final decades of the twentieth century witnessed a further explosion in formats, and libraries can now offer information in the form of print, audio, video, microforms, numeric, computer programs, or multimedia composites of each. For librarians, the most important issue is to provide the information in whatever form it is packaged.

6. Role of Librarians in Knowledge Management

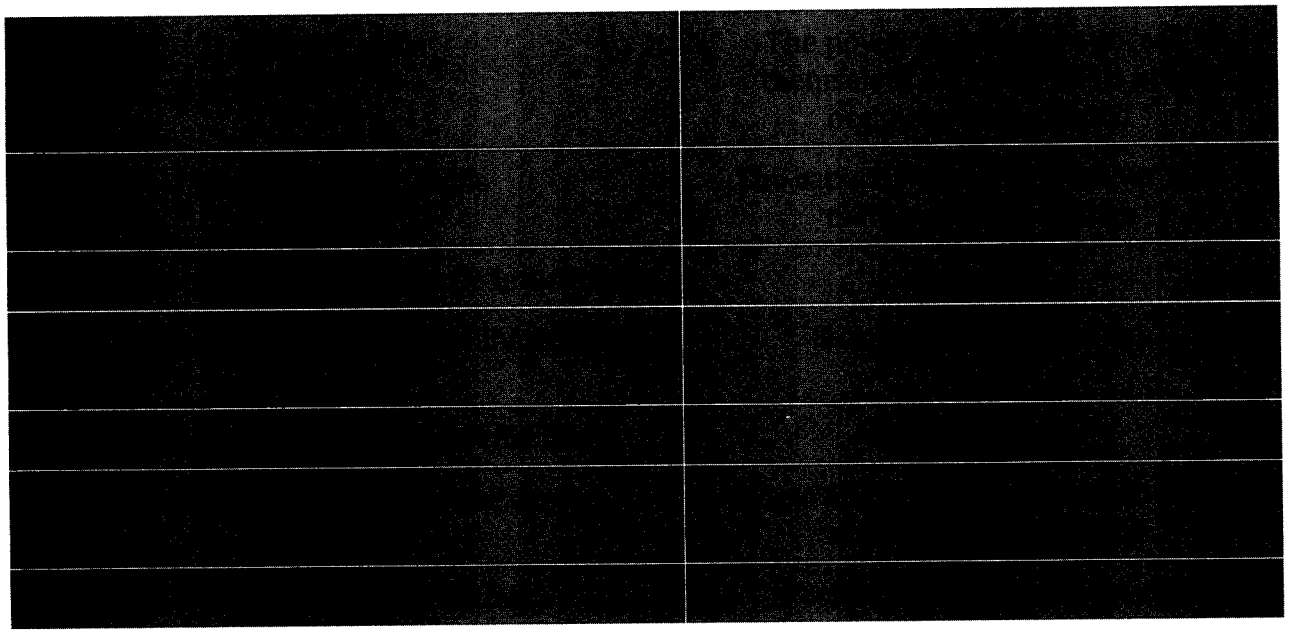
- For Imparting Meticulous Services In Library And Information Centres
- Requisites To Be Come Effective Knowledge Manager
  - To provide intelectual access to information in any format
  - To evaluate available sources of information
  - To organise and structure information
  - To ensure the preservation of information
  - To provide specialised staff to offer instruction and assistance in interpreting resources and access to resources

1.1. Skills to become an effective Knowledge Manager/Librarian

The table below is revealing many of the skills required to become effective managers. It shows the KM skills librarians have and the attributes librarians may not necessarily have. If this medium is even roughly valid, there are a number of noteworthy skills that librarians currently don't have. Perhaps this is why people are not routinely appointing us as knowledge managers

KM skills for librarians

	Attributes librarians may not necessarily have



7. Building Up of the Image of the Librarian

Librarians have recently moved to being 'information managers' as such, 'librarians are seen by many as effective, intelligent, problem solvers with a high level of research, technical and professional skills Unfortunately this often escapes the attention of senior management in organizations. There is also a awareness that librarians seldom interact with 'the business', have a very narrow view of KM, and of the organization as a whole. There is an recognition within the text that no matter which path librarians take for their future, a greater awareness of their value and skills within organizations needs to be promulgated.

7.1 Acquire the necessary skills, including that of self-promotion

If we are to have a place in knowledge management, many of us will need a mind shift; we will need to become more proactive, think more strategically, and align our work more closely with the goals of the organization. We need to understand that KM is more than information and technology, and that tacit knowledge may be of critical relevance. Its collection, distribution and management are critical; if we are to play a significant role in this process, then how we relate to the organizational context and those at all levels within it will determine the extent of our success or failure. We should have communication, team building and leadership skills alongwith technological skills to render effective service with efficacy.

7.2 Find a balance, and play to our strengths

There is definitely a role for us as independent information professionals in evaluating, filtering and managing information, including the skills of cataloguing and classification, indexing and abstracting. These are applicable in new information contexts, such as the management of metadata, the design and application of search engines or the creation of organizational thesauri. Other skills like customer service orientation, and their training

skills. Human resource management plays an important role in becoming effective managers.

8. We could do nothing

As KM becomes more persistent we may merely float towards the KM context without taking any action to shape or manage the process. This is not without its dangers; in that we may merely become passengers, rather than drivers and movers and shakers. As with any shift in professional values, there will be different answers for different people. The most important thing is for us to be aware that this is the way of the future, and to make sure we have a place in it, if we want one.

9. A Vision

With this discussion of knowledge management and the impact that technology is having on libraries, it is perhaps worthwhile to try to define what precisely it is that we strive for, aspire to, or dream of with regard to online content, access and services in this new electronic era. The vision must include a guarantee of universal electronic access to the collective corpus of our traditional libraries, as well as the inclusion of Web-based materials and other kinds of tacit information already discussed. Another difference is that this access could be available to anyone, not just a chosen few who have access to materials as a function of geography or status.

10. Conclusion

The successful implementation of new technologies is dependent on many factors including the efficient management of human resources. Furthermore, recent research indicates that intellectual assets and resources can be utilized much more efficiently and effectively if organizations apply knowledge management techniques for leveraging their human resources and enhancing their personnel management. The human resources departments are well positioned to ensure the success of knowledge management programs, which are directed at capturing, using and re-using employees' knowledge. Through human resources management a culture that encourages the free flow of knowledge for meeting organizational goals can be created. The strategic role of the human resources department in identifying strategic and knowledge gaps using knowledge mapping. In addition, the drivers and implementation strategies for knowledge management programs are to be practiced in day to day services.

For any library to succeed in implementing KM require a strong leadership skills and vision from top administration, which can influence the organizations knowledge sharing efforts in a positive way. As libraries have entered the knowledge age of 21st century, we should come forward armed with our professional knowledge and experiences let us be in the drivers seat. IT and systems can provide effective support in implementing KM. Librarians should work with IT professionals and others to develop the appropriate knowledge management systems. In fact libraries have had a long and rich experience in the management of information. Many of such knowledge and skills of librarianship can be applied to knowledge management.

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Table-4 brings out the fact that KUL has 50 computers connected to Internet. Thirty five computers have been used for Internet browsing by students, researchers and teachers. Two computers have been devoted for searching OPAC, and remaining are being used in different sections of the library. The SOUL has been used for automation of house-keeping operations. An initiation has been made to create an institutional repository by making use of E-Prints software. The KUL has taken a leading role in establishment of extensive campus LAN that connects academic blocks, administrative blocks, hostels, guest house and staff residences. The unique feature of campus network in Kuvempu University is that the Network Operation Centre (NOC) is located in the library. Physical media used for transmission of resources are Optical Fiber Cable (OFC) and Wi-Fi. The Wi-Fi has been assisting the users to explore the resources at anytime and anywhere in the campus. Presently 540 computers have been connected to NOC, in the library, through 1 Gbps of bandwidth provided under National Knowledge Network (NKN) programme. The KUL does not have software for research data analysis and CD-Net facility.

5.3 Automation of House-keeping Operations in KUL

Automation of library house-keeping operations increases the accuracy and efficiency of information processing, retrieval and distribution, and saves the time of library users as well as staff. The data regarding automation in KUL has been presented in table-5.

Table-5: Details of automation of house-keeping operations in KUL

S. No.	House-keeping Operations	Status
01	Acquisition	Automated
02	Technical processing	Automated
03	Serials control	Automated
04	OPAC	Automated
05	Circulation	Automated
06	Finance management	Partially automated
07	Stock verification	Partially automated

The data presented in table-5 reveals that the KUL has fully automated the activities of acquisition, technical processing, circulation, serials control and OPAC. Finance management and stock verification activities have been partially automated.

5.4 Digital Information Services in KUL

The KUL, apart from continuing the information services in traditional way, provides digital resource-based services. The data regarding digital information services in KUL has been presented in table-6.

Table-6: Details of digital information services in KUL

S. No.	Digital Information Services	Response
01	Reference service	Yes
02	Referral service	Yes
03	Alerting service	Yes
04	SDI service	No
05	Bibliographic service	Yes
06	Document delivery service	Yes

It is evident from the data presented in table-6 that the KUL has adopted technology in providing services to its users. The library receives and answers the users' reference queries through e-mail. The referral service is being provided by directing the users to appropriate resources, institutions, persons, etc., when information resource in demand is not available with KUL's collection. The library has made provision for alerting services. Newly added resources are listed and passed on to the teachers on quarterly basis. Newspapers in print version are searched for identification of news items regarding universities and scanned for taking electronic copy. Such news items are distributed through e-mail to the selected officials of the university. Bibliographic service through electronic mode is being provided to the users on request. Document delivery service is being extended under the UGC-Infonet programme. Reprographic services such as computer print-out and xerox are being provided at minimum cost. The library does not provide SDI service.

5.5 Information Literacy Programme in KUL

Building the information skills among the users has gained increased importance as library collection includes both print and digital resources. The response of KUL towards user education has been presented in table-7.

It is clear from the table-7 that the KUL has been conducting user education through conventional as well as advanced methods. Methods followed by KUL for user education include training programmes, lectures, audio-visual presentations, demonstrations and publications. The KUL has organized training programmes for imparting education on computer fundamentals, searching Internet and searching online resources. However, the KUL has not organized training programmes on searching CD-ROMs. The KUL has a well-furnished seminar hall with 100 seating capacity and projectors such as LCD which is being used for user education.

Table-7: Details of user education in KUL

S. No.	User Education	Response
01	Conducted user education	Yes
02	Methods followed	
	-Training programmes	Yes
	-Lectures	Yes
	-Audio-visual presentations	Yes

	-Demonstrations	Yes
	-Publications (brochures, etc.)	Yes
03	Modules covered in training programmes	
	-Computer fundamentals	Yes
	-Searching Internet	Yes
	- Searching online resources	Yes
	- Searching CD-ROM	No
04	Facilities for user education	
	-Separate hall	Yes
	-Seating arrangements	Yes
	-Projectors (LCD, etc.)	Yes

5.6 Human Resource Development in KUL

To identify, process, organize and distribute the complex information resources expect for continuous training opportunities for library staff. The data about the efforts made by KUL towards human resource development has been presented in table-8.

Table-8: Details of human resource development in KUL

S. No.	Human Resource Development	Response
01	Provided training opportunities	Yes
02	Conducted in-house training programmes	Yes
03	Deputed staff to attend training programmes	Yes
04	Efficiency of staff to handle e-resources	Majority are efficient

The data presented in table-8 clearly shows that the KUL has provided ample opportunities for its staff to update their skills in handling digital resources by conducting in-house training programmes as well as deputing them to attend training programmes held at different institutions. Majority of the library staff are efficient to handle digital resources.

6. Findings of the Study

Major findings of the study are as given below.

- The KUL has information resources in print and digital versions. The resources accessible under UGC-Infonet Consortium are the major strength as far as digital resources are concerned.
- The KUL has established ICT infrastructure in the form of computers, printers, barcode equipments, software required for library automation, digital library management and anti-virus. The KUL has taken a leading role in establishment of widespread campus LAN by making use of OFC and Wi-Fi with 1 Gbps bandwidth. However, the library has not established CD-Net facility. Also, library lacks software for research data analysis.

- The KUL has automated the activities of acquisition, technical processing, circulation, serials control, and OPAC. Finance management and stock verification activities have been partially automated.
- The KUL provides reference, referral, alerting, bibliographic, document delivery and reprographic services through electronic mode. However, library does not provide SDI service.
- The KUL has conducted user education through training programmes, lectures, audio-visual presentations, demonstrations and publications. The modules covered under training programmes include computer fundamentals, searching Internet and online resources. However, the KUL has not organized training programmes on searching CD-ROMs. The KUL has a well-furnished seminar hall for conducting user education.
- The KUL has provided opportunities to update the skills of library staff through in-house training and deputation for attending training programmes held at different institutions.

7. Suggestions

On the basis of findings of the study it is suggested to:

- Procure software for research data analysis;
- Automate stock verification activities;
- Provide SDI service through electronic mode; and
- Provide more training opportunities for library staff so that they develop skills to handle digital resources.

8. Conclusion

The KUL has made required efforts for coping with digital information environment. The KUL has been adding print resources apart from providing access to nearly 10,000 online journals available under UGC-Infonet Consortium. The library has brought changes in its services by providing digital resource-based services. The KUL has established ICT infrastructure not only in library premises but also has taken necessary lead to establish extensive campus LAN so that students, researchers, teachers and officials of the university are able to utilize resources without any barrier. Majority of the house-keeping operations have been automated. User education and library staff training programmes have been conducted to enhance the usage of information resources and services. In the light of the results of the study it can be concluded that the KUL has put in efforts to bring newness in learning and information support services to users in the digital information environment.

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Knowledge Management in Academic Libraries

Jogender Singh

Abstract

The emerging field of knowledge management offers libraries an opportunity to create knowledge and to improve organizational effectiveness, for both themselves and their institutions. The paper concludes that knowledge professionals will have to move from the background to the centre of the organizational stage, to hold jointly the reins of knowledge management. In brief, it examines the role of librarians/libraries in knowledge management and suggests that librarians/libraries should be in-charge of knowledge management in their respective organizations in order to leverage the intellectual assets and to facilitate knowledge creation.

Keywords: Knowledge management, Academic Libraries

1. Introduction

In this age of information and knowledge, knowledge is the most important factor in the long-term success of both an individual and organization. In fact, knowledge may soon be the only source of competitive advantage. Very often one department of an organization repeats work of another department simply because it is not easy to keep track of knowledge in other departments. Libraries, as one of their major functions, need to know as to what the organization's corporate knowledge assets are, and how to manage and make best use of these assets to get maximum return. Of late, academic libraries have generated more and more information about their operations. But this operational information is hardly to create or apply organizational knowledge. Instead, they excuse themselves by saying that they are so committed to providing services that there is no time to use this growing body of information to increase organizational effectiveness. In fact, academic libraries do not consider organizational knowledge as a resource. Librarians do not manage knowledge about their organizations as they manage their other resources.

But recent trends show that knowledge management has received considerable attention in the library and information community. The academic libraries have started applying knowledge management principles to provide effective library services. In the past few years, there has been a significant advance in information technology, which offered new possibilities to the knowledge management processes in libraries and enhanced traditional knowledge management methods and sources by new models and methods such as Digital Library, Internet, Resource Sharing and Library Consortia.

2. Knowledge and its relation to Knowledge Management

The organization's success depends critically on a successful knowledge management. Knowledge assets are the knowledge that an organization owns or needs to

own to achieve its goals. Knowledge equals information extracted, filtered or formatted in some way. Knowledge can be divided into two types, that is, tacit knowledge and explicit knowledge. Tacit knowledge consists of the hands-on skills, best practices, special know-how, heuristic, intuitions, and so on. Tacit knowledge is personal knowledge that is hard to formalize or articulate (Polanyi 1973). The transfer of tacit knowledge is by tradition and shared experience, through, for example, apprenticeship or job training. Tacit knowledge in an organization ensures task effectiveness -- which means, the right things are being done so that the work unit could attain its objectives. It also provides for a kind of creative robustness -- intuition and heuristic can often tackle tough problems that would otherwise be difficult to solve. Whereas tacit knowledge is implicit, explicit knowledge is rule-based knowledge that is used to match actions to situations by invoking appropriate rules. Explicit knowledge guides action by answering three questions: What kind of situation is this? What kind of person am I, or what kind of organization is this? And finally, what does a person or an organization do in a situation such as this? Explicit knowledge is used in the design of routines, standard operation procedures and the structure of data records. Explicit knowledge enables the organization to enjoy a certain level of operational efficiency and control. It also promotes equable, consistent organizational responses.

3. The Significance of Knowledge Management

The purpose of knowledge management is to deliver value to organization. The basic goal of knowledge management is to harness the knowledge resources and knowledge capabilities of the organization in order to enable the organization to learn and adapt to its changing environment (Auster and Choo, 1995). Therefore, knowledge management practices aim to draw out the tacit knowledge people have, what they carry around with them, what they observe and learn from experience, rather than what is usually explicitly stated. Managing knowledge goes much further than capturing data and analysing it to obtain information. Davenport(1993) explains that knowledge management process is about acquisition, creation, packaging, and application or reuse of knowledge.

4. Changing Role of Academic Libraries in Knowledge Management

Academic libraries could add a great deal of value to data warehouses by undertaking needs assessments to find out what kinds and forms of knowledge would be helpful to administrative and academic personnel in achieving organizational goals. Librarians could structure the database and search algorithms to create useful information and intelligence in appropriate areas. In addition, they could distribute that information and intelligence in a form the user finds meaningful for achieving objectives. Finally, they could train and support use of the data warehouse. These are all skills for which librarians are recognized in the academic community. Supporting data warehouses would only expand traditional library activities to a new set of information. It also would bring the library in much closer contact with operational units such as the computer center, legislative affairs and institutional research, as well as senior academic administrators.

5. Role of Librarians in Knowledge Management

Librarians have developed and applied many knowledge management principles in the provision of their library services. Reference, cataloging and other library services are designed to encourage the use of scholarly information and thus increase the amount of academic knowledge used in higher education. Questions in a reference interview and the points of access in a catalog both are intended to reinforce the ways that scholars work to create new academic knowledge. However, libraries have done little to use organizational information to create knowledge that can be used to improve the functionality of library and higher education processes. In many ways, knowledge management incorporates principles that academic librarians have developed and used with scholarly information for many years. It then applies these principles and others to organizational information in ways that create new knowledge to improve organizational effectiveness. (Lucy, 1999).

6. Librarians or Knowledge Managers: Some thoughts

In some important ways, knowledge management is merely putting a new name to things that librarians have done for centuries. It is primarily a social, not a technological, technique. The service function and good relations with users, which are the keys to successful librarianship, also are central to knowledge management. The instructional function of libraries is an essential component of knowledge management. The emphasis on meeting user needs as defined by users also is shared. The selection, organization, and weeding of knowledge are necessary prerequisites to the successful operation of both services. Finally, knowledge management is outcomes based, whereas libraries are people based. These differences, though at times profound, need not be overwhelming. As libraries adopt more aspects of the learning organization and as knowledge management learns more about organizing and supporting knowledge, it is likely that the differences will begin to blur.

7. Challenges and Issues

Knowledge management does present several significant professional issues to librarians. Perhaps the most profound is in the area of proactivity and confidentiality. Librarians tend to resist being proactive, particularly if it means that any information about a user might become public. Circulation records are destroyed routinely. Librarians are reluctant to ask a person how he or she plans to use the information they make available. They decline to determine institutional affiliation before committing significant resources to answering a question. Knowledge management would capture and use all this information. It would use circulation records to let an individual know whether a book or article in an area he or she uses frequently is available. Knowledge management can use the context of use to refer more scholarly knowledge to the user or to put the user in contact with another person who needs his or her skill or shares his or her interests. It would use institutional affiliation to both protect sensitive information and build alliances. For libraries, knowledge management raises important issues of intellectual freedom that must be addressed. Academic librarians, like faculty, are not very accountable for their time or resources used. It is assumed that as individual professionals, librarians know best how to manage their time and resources. They may go days or weeks without considering how

they are contributing to organizational goals. Given the traditional paucity of library support and the vast quantities they organize, librarians tend to sacrifice speed in their operations. Knowledge management, on the other hand, is based on assumptions of strategic planning, the time value of information, and cross-functional teams. If librarians are to function as key players in knowledge management, some accommodation will have to occur on these functional issues.

Finally, librarians as individuals usually seek the security of a stable organization. They look to the library to guide and support their development as individuals.

8. Conclusion

Knowledge management is a new field drawing on several disciplines, including library and information science. It is beginning to reach public service and educational institutions. Higher education and academic libraries can use knowledge management to achieve organizational goals. Knowledge management can be incorporated into many library operations to improve effectiveness. In addition, it offers the opportunity to expand the role of libraries in the academic community and to result in strengthened relationships with related units, inside and outside the university.

As a social phenomenon, knowledge management is both similar to and different from academic libraries. Librarians and knowledge management workers must address several issues before they can work together effectively, but the opportunities suggested by their collaboration are great.

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Knowledge Management: Opportunities and Challenges

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Abstract

Trends and surveys indicate that all organizations have begun to realize the importance of KM. However, most of them face the challenge in collating and assimilating all information and experiences, which may, in the case of some organizations, be spread across geographical boundaries. Even if knowledge is captured, getting people to contribute and utilize stored knowledge assets is a challenge. With these come further challenges, which are precipitated either because people are not aware of the involved technology or are not cognizant of the benefits of such an exercise. Our goal in this paper is to explain the value of a Knowledge Management System and impart an understanding of how such a system can be used to impact customer satisfaction and corporate value.

Keywords: Knowledge Management, KM Architecture, Knowledge Framework

1. Introduction

Data are facts, and information is interpreted data. Knowledge is created and organized by flows of information, shaped by their holder. It is tacit or explicit. Tacit knowledge is no verbalized, intuitive, and unarticulated knowledge that people carry in their heads. It is hard to formalize and communicate because it is rooted in skills, experiences, insight, intuition, and judgment, but it can be shared in discussion, storytelling, and personal interactions. It has a technical dimension, which encompasses skills and capabilities referred to as know-how. It has a cognitive dimension, which consists of beliefs, ideals, values, schemata, or mental models. Explicit knowledge is codified knowledge that can be ex pressed in writing, drawings, or computer programs, for example, and transmitted in various forms. Tacit knowledge and explicit knowledge are mutually complementary forms of meaning.

2. Modes of Knowledge Creation

In large organizations, knowledge is created through continuous dialogue on tacit and explicit knowledge via four patterns of interactions: socialization, externalization, combination, and internalization. Socialization is the process of creating common tacit knowledge through interactions including observation, imitation, or apprenticeships. Externalization is the process of articulating tacit knowledge into explicit knowledge by means of metaphors, analogies, or sketches. Combination is the process of assembling new and existing explicit knowledge into systemic knowledge such as a set of specifications for the prototype of a new product. Combination involves combining explicit knowledge through meetings and conversations or using information systems. Internalization converts explicit knowledge into tacit knowledge. Externalization converts tacit knowledge into explicit knowledge.

3. Knowledge Management Architecture

3.1 Leadership

Leadership develops the strategies necessary to position for success in an environment. Those strategies determine vision and must align knowledge management with business tactics to drive the values of knowledge management throughout the organization. Focus must be placed on building executive support. Successful implementation of a knowledge management strategy requires champions at or near the top of an organization.

3.2 Organization

Respect for knowledge must pervade an organization. Introducing knowledge management requires organizational change, and knowledge management inevitably acts as a catalyst to transform the organization's culture. The increasing value placed on capable people, rising job complexity, and the universal availability of information on the Internet are fundamental changes contributing to attempts to leverage knowledge management solutions. To begin to change an organization, knowledge management must be integrated into business processes and connected to changes in organizational culture.

3.3 Technology

Knowledge management tools are essential to achieving knowledge management strategies. However, any technical solution must add value to the process and achieve measurable improvements. Properly assessing and defining information technology capabilities is essential, as is identifying and deploying best-of-breed knowledge management tools to match and align with the organization's requirements. Ten processes that must be built collectively make up full-function knowledge management: capture and store, search and retrieve, send critical information to individuals or groups, structure and navigate, share and collaborate, synthesize profile and personalize, solve or recommend, integrate, and maintain.

3.4 Learning

People are responsible for using knowledge management tools in support of organizational performance. Organizational learning must be addressed with approaches such as increasing internal communications, promoting cross-functional teams, and creating a learning community. Learning is an integral part of knowledge management. In this context, learning can be described as the acquisition of knowledge or a skill through study, experience, or instruction. Organizations must recognize that people operate and communicate through learning that includes the social processes of collaborating, sharing knowledge, and building on each other's ideas. Managers must recognize that knowledge resides in people and that knowledge creation occurs through the process of social interaction.

4. Risk Factors /Major Challenges

- Information is crucial to both offensive and defensive competitive moves. Sometimes selective release of information can serve very useful purposes, but

often information about plans or intentions can make it a great deal easier for competitors to formulate strategy. For example, if an impending new product is disclosed in detail, competitors will be able to focus their resources in preparing a response.

- Not many Companies have published their ROI on KM projects. Therefore having a clear vision, objectives, and planning and steady one-step-at-a-time path will help companies achieve good results in KM implementation.
- People may not be receptive to share the knowledge. Therefore, creating an environment and policies that enable knowledge sharing culture is important.
- Change Management: Resistance to participate and contribute knowledge to the KM database. Because employees might think they may lose their importance in the organizations. One should make it clear that KM will enhance their understanding and help them think differently from the present. KM is to enhance their understanding, not replace it.

5. Results from Knowledge Management

First and foremost, knowledge management is about results. Figure 2 described the typical model of learning progression under which data are analyzed to generate information, information is placed in context to produce knowledge, and evaluated knowledge begets wisdom (or informed actions). However, there are limits to looking upstream and concentrating on the supply of knowledge. It can result in the creation of unfocused data and information whereby strategy is blindly driven by technology. It is also helpful to examine the desired results and deduce what knowledge will be required to accomplish them.

6. Building Commitment

As part of an approach to managing change programs, it is helpful to observe the stages that people live through before committing to a new way of working. From simple awareness, they must first hear, and then understand the change. Based on the actions of leaders and peers, they then opt to support the change and can be seen to act in the desired manner. Commitment is built when they use the new way of working in regular activities and finally own the change in their environment. At every stage, commitment is fragile and invokes active sponsorship from leaders.

7. Knowledge Management: Some Examples

K-Mail: A system for facilitating real-time collaboration amongst communities with the aid of automated query-response features

Features of K-Mail are:

- It can provide answers to questions that are previously answered in mailing groups
- It can intelligently act as an intermediary by keeping track of queries and replies
- It can automatically capture content and build its repository
- It does not expect a major behavioral change among users

K Agent- A proactive, semi intrusive agent which understands user contexts and delivers information and knowledge feeds at desktops

Features of K Agent are:

- Broadcast and Delivery of knowledge available in the intranet universe
- Proactive, resulting in time and effort saving for end-user
- K-Feed based on user profile and work context

K Speak-An innovative application using voice reorganization technologies and summarization algorithms to deliver information and knowledge to handhelds.

Features of K speak are:

- Voice recognition
- Text to speech conversion
- Focused summaries of business and technical information.
- Condensed text for mobile users.
- Internally developed extraction-type summarization algorithm.

K Search- A tool that the user to search multiple information and knowledge stores from the comfort of MS Office applications

8. Measuring Return on Investment (ROI)

Parameters on which ROI is measured are-

- No. of unique contributors
- No. of knowledge artifacts
- Artifact download rate (per day)
- No. of experts
- No. of discussion forums
- No. of knowledge areas

9. Conclusion

Knowledge Management is a system of technologies focused upon the delivery of strategically useful knowledge and expertise, the availability of which facilitates effective collaboration and timely decision-making. The strategically literate employee, armed with the best and most up-to-date knowledge, delivered in a timely manner, will produce work that results in more satisfied customers, increased success and corporate value. Knowledge Management or learning organization can't be built overnight. According to Michael Porter's competitive strategy, there are five forces that drive the industry competition: Suppliers, Buyers, Potential Entrants, Substitutes and Industry Competitors. *Therefore to survive and compete in global market, organizations need to develop knowledge and intelligence on all the competitive forces of the value-chain. Knowledge Management is a symphony of ideas, thoughts, insights, processes, strategies, structures, and best practices - and that is the mantra for competing and winning in the 21st century.*

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Knowledge Management Tool and Models

Bhaw Nath Pandey

Abstract

In era of knowledge based economy and globalization of world economy a new opportunity emerged as a new management issue with their spectrum of information management, information technology, artificial intelligence, expert system, semantic web, neural network, cognitive sciences, mathematics and management theory, economics. It is expanding from new insights, vision, practices with fresh objective, mission, method and products. The problem and the solution based theory developed for knowledge management and learning. This article critically evaluates selected models of knowledge management and their tools.

Keywords: Knowledge, Knowledge management, KM model, KM tools

1. Introduction

Knowledge management encapsulate several discipline like Information Science, Information Technology, Informatics, Artificial Intelligence, Management theory, economics, organizational behavior, social science, epistemology, cognitive science, expert system, semantic web, neural networks etc. Knowledge management touches human behavior, attitudes, capacities, philosophies, models, operations tool and technology. It is required research of human resources, information resource centers and knowledge resource centers creates, process, store, transfer and how one can handle with these process with knowledge management model and tools.

2. Knowledge Management Tools

Knowledge management tool helps in the acquisition resources. For example PCPACK contain a no. of tools to help the knowledge engineer for analyze structure and store the knowledge. Software storage and indexing systems can also facilitate the re-use and transfer of knowledge from one application to others. Software systems that make use of ontology are under development to provide automatic analysis and structuring of knowledge. Knowledge management tools are results of research project of knowledge engineering. Its purpose is to identifying the next generation of technologies for corporate to create, manage and extract knowledge from their knowledge base assets and to integrate components of technologies to create and to make a complete approach to knowledge management. Some knowledge management tools and its components are given below.,

- **LPCUBE**- It is an Indian product with PKM collaboration and DM components. It helps discover performance gap, identify right solution, train the taskforce and manage change towards complete transformation.
- **AKT-TECHNOLOGIES**-It is a list of knowledge tools to ease the bottlenecks of acquiring knowledge, Modeling knowledge, Reusing knowledge, Retrieving knowledge, publishing knowledge, maintaining knowledge.

- **KNOWLT:** It is a comprehensive command, control and communication, platform that allows enterprises to easily see and manage their data, organization from one location regardless of their geographic location.
  - **WIKI MATRIY-** A tool for comparing wiki features.
  - **UNYTE-** Collaboration tool.
  - **GLIFFY-** A free visual collaborative tool.
  - **INKSCAPE-**Open space vector drawing tool.
  - **Vyew.Com-**Visual collaboration.

Knowledge Management Tool and Its Components

S.N	KM Tool Components	Description
1	3STORE	-uses MYSQL to store its raw RDF data
2	ADAPTIVA	-a user-centered ontology building environment
3	AKTIVE DOC	-supporting knowledge management
4	AKTIVE MEDIA	-ontology based cross-media annotation
5	AMILCARE	-an adaptive information extraction tool to support document annotation for the semantic web
6	AQUA	-system which answer questions written in English
7	AQUALOG	-natural language question answering system
8	BUDDYSPACE	-instant messaging with custom map visualization
9	CASD	-tool for producing system architecture diagrams
10	CLASSAKT	-a text classification web service for classifying documents
11	COCKATOO	-a knowledge acquisition tool
12	COMPENDIUM	-semantic, visual hypertext tool for real time meeting capture.
13	CONCEPT TOOL	-a system to model, analyze, verify, validate, share, combine and reuse domain knowledge base
14	CONREF	-a service discovery system which uses ontology mapping techniques
15	CSAKTIVESPACE	-a smart browser interface for semantic web application
16	D3E	-structured documents into interactive sites
17	DOME	XML editor
18	EPREP	-uses text extraction to automatically

19	EXTRAAKT	-extracting ontology from knowledge base
20	FLIFE	-maintaining life-cycle patterns in ontology development
21	FLOODSIM	-semantic web technologies
22	FOXTROT	-user profile in ontological terms
23	GATE	-scalable open source infrastructure
24	IF-MAP	-ontology mapping method
25	I-X PROCESS PANELS	-collaboration of human and computer agents
26	K-SEARCH	-information retrieval and visualization
27	MAGPIE	-interpretation of web documents
28	MELITA	-using an adaptive information extraction engine
29	MYPLANET	-to create personalized version of a web based newsletter
30	NMARKUP	-helps user build ontology
31	ONTOCOPI	-uncovers communities of practice by analyzing the connectivity
32	ONTOPORTAL	Navigation of large semantically powered portals
33	R EVYU	-it is a website to write reviews
34	REFINER++	-create and maintain their own knowledge base
35	RETAX+	-to help a taxonomist to create a consistent taxonomy
36	SIMMETRICS	-open source extensible library of distance metrics
37	WEBONTO	-supports the browsing, creation and editing of ontology

Table: 2.1 Knowledge Management Tools and Its components

3. Knowledge Management Models

Knowledge management model is a combination of data or information into a reusable format for the purpose of preserving, improving, sharing, aggregating and processing knowledge to stimulate intelligence. Knowledge management models cover basic knowledge and information related activities such as gathering, structuring, storing and publishing. On the basis of four entities of knowledge are can compare the knowledge management model like completeness, connectedness, congruency and perspective and purpose.

3. 1 The Nonaka and Takeuchi Knowledge Spiral Model

Nonaka and Takeuchi (1995) studied the success of Japanese Companies in achieving creating and innovation. The most famous model is the SECI Model by Nonaka

and Takeuchi, 1995. He believes that knowledge is created dynamically and has to be processed effectively. It supports that knowledge creation is spiral process and not linear or circular. Knowledge is created through four processs:

3.2 The Choo Sense Making Knowledge Management

The Choo has discovered a model of knowledge Management that stress sense making, knowledge creation and decision making. This model concentrates that how information elements are selected and subsequently fed into organizational actions. Weick (2001) proposes that sense making in organizations consists of four integrated process-

- Ecological Change
- Enactment
- Selection
- Retention

3.3 The WIIG MODEL for Building and using knowledge

Wiig (1993) approached his knowledge management model with the following principle:

- Completeness
- Connectedness
- Congruency
- Perspective and purpose

3.4 The Boisot I-Space knowledge management model

Boisot (1998) proposes the following two key points:

- The more easily data can be structured and converted into information the more diffusible it process
- The less data has been so structured requires a shared content for its diffusion, the more diffusible it becomes.
- The activities of codification, abstraction, diffusion, absorption, impacting and scanning all contribute to learning.

3.5 Complex adaptive system models of knowledge management

The Intelligent complex adaptive systems knowledge management theory views the organizations an intelligent complex adaptive system. i.e. The ICAS MODEL of knowledge management (e.g. Beer, 1981, Bennet and Bennet, 2004).

4. Implication of knowledge management models

Models help us to put the disparate pieces of a puzzle together in a way that leads to a deeper understanding of both the pieces and the assemble they make up. The knowledge management models key role is to ensure a certain level of completeness or depth in the practice of knowledge management: a means of ensuring that all critical factors have been addressed. It is not only enable a better decision of what is happening but also help provide a better prescription for meeting organizational goals. Knowledge management models help to explain what is happening now and they provide us with a valid blueprint or road

map for getting organization where they want to be with their knowledge management efforts.

5. Conclusion

Knowledge management models and tool provides a whole new momentum and direction of knowledge disseminating centre and corporate leadership and practices. It needs to new effort to adopt and implement by both resources generators and users. By being a careful articulated, fabricated, cognitively, socially and technically knowledge management model become more easy to use and operations by generators and knowledge disseminators and in workplace.

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Library Consortia: A Development in Resource Sharing

Indrani Hande P S

Abstract

In this information era, the users are very demanding towards the quality of services of the library. The main motto of library/documentation centre is that "Right information to the right user at the right time". Today we get information at the finger tip due to the internet, which has become an essential part of one's life. Then the concept of library consortia becomes much appropriate in establishing the importance of librarian's role as well as the library. Due to the networking among libraries the service to the users becomes much easier and efficient.

Keywords: Library consortia, Resource sharing, Collection development, Networking

1. Introduction

In this information savvy world, libraries allot a lot of budget towards its collection development .One needs to understand that if many libraries/organization working under a single department and with common research interest are purchasing the identical documents/resources to cater to the needs of their patrons, then duplication occurs. Duplication in terms of resources can be prohibited by forming consortia among these libraries.

A library consortium is "any local, state wide, regional, or inter state cooperative association of libraries that provides for the systemic and effective coordination of the resources of school, public, academic, and special libraries and information centres, for improving services to the clientele of such libraries". (US Federal Communications commissions, Yale University Library). The word 'Library Cooperation' was much in use, where a group of libraries with common interest share the books and journals among themselves. Once the use of computers in the libraries started and the network among these libraries became much easier, faster and popular, the use of the word 'Library Consortia' came in to picture.

2. Reasons for starting library consortia

Concept of Library consortia is very necessary for the healthy growth of a library. In India first it started among academic libraries. Previously the sharing of resources used to take place among group of libraries in the form of Inter Library Loan (ILL) or Document-Delivery-Service through courier or in person. In this era of internet, user requires all the information at the finger tip. Users need the resources at the great speed and accuracy. Most of the libraries these days use computers and are fully automated, which makes it easier for dissemination of knowledge.

3. Features of Library Consortia

- In library consortia participating libraries need not sacrifice their individuality.
- They need not make any physical changes in the library, as consortium features Electronic resources as the main features for participating libraries, it does not consume any space inside the library.
- The Electronic databases cost a lot if it is purchased by each library individually. Due to the sharing of funds for the purchase of electronic resources, the users will be able to acquire resources from very good publication/source.

- Even for participating libraries, the allocation of budget towards electronic resources will be very reasonable compared to the quality of the documents they get access to.
- Users will have access to the resources of other participating libraries. Catalogues of participating libraries, similar to Union Catalogue, will be made available among the participating libraries under the consortium.
- No duplication occurs while purchasing the documents/resources as consortia is possible among group of libraries working for the same goal. Participating libraries can share the resources among themselves.
- Consortia will make sure that the library personnel in the participating libraries will be efficiently trained to handle the demand of the usage of electronic resources.
- Issues concerning copyrights/licenses of the documents can be resolved in group and the initiative activities regarding this will happen at the core committee of the consortia selected by the participating libraries. Individual libraries need not worry about the copyright issues.
- The access to the electronic data bases is mostly on Internet protocol (IP) based or user name and password based for an organization. One need not worry about the misuse of the resources purchased under the consortium.

4. Indian Library Consortium

Some of the Indian library consortiums are

- IKP Knowledge Park (Industrial Credit and Investment Corporation of India –
- http://www.iciciknowledgepark.com/)
- UGC-Infonet Digital Library Consortium (http://www.inflibnet.ac.in/infonet/)
- ICMR e-Consortia (http://icmr.nic.in/icmrnews/e_consortia.htm)
- 4.HELINET (http://www.rguhs.ac.in/HELINETHOSTCONSORTIUM/homehelinethost.htm)
- IIM Library Consortium
- ISRO Library Consortium
- CSIR e-Journal Consortium (http://124.124.221.7/index.php)
- FORSA (Forum for Resource Sharing in Astronomy) Consortium
- (http://www.iiap.res.in/library/forsa.html)
- INDEST (Indian National Digital Library in Engineering Science & Technology) Consortia (http://paniit.iitd.ac.in/indest/)
- MCIT (Ministry of Communication and Information Technology) Library Consortium (http://www.mcitconsortium.nic.in/).

Among these CSIR e-Journal Consortium, INDEST Consortia, UGC-Infonet Digital Library Consortium and FORSA consortium are the members of International Coalition of Library Consortia (ICOLC)

5. Consortia in developing countries

eIFL.NET is an international library consortium which is founded in 1999, to create awareness and to support the transition of library consortia in developing countries. It is working in collaboration with the libraries in some of the developing countries of Europe, Latin America, Africa and Asia.

In a developing country budget for each library will be less in comparison with the cost of the e-resources and appropriate infrastructure of the libraries is necessary with respect to automation of the library. Library personnel are to be trained appropriately to meet the needs of the library consortia setup. Right now in India the libraries under consortia have realized that e-resource sharing among its libraries is the only important factor. But even sharing of other resources and services are equally important among participating libraries.

Communications among the participating libraries are similarly important. The core committee selected by the participating libraries should make sure that all the libraries are kept in the loop for all the communication and suggestions for improvement. It should make sure that participating libraries are well connected, so that sharing of resources becomes much smoother. The ultimate goal of the library consortia should be that the users are satisfied with the quality and quantity of the resources provided by the libraries.

6. Conclusion

Knowledge forms the important factor in any research activity. The library consortium has become a notable initiative towards the innovation in knowledge society. Libraries should make an effort towards this. May be there will be initial problems among the libraries. Ultimately the user satisfaction is extreme important for a library. Libraries should come above the issues of the infrastructure, budgeting and other additional requirements to form a consortium so that the librarians in the 21st century should create an important role for themselves and acclimatize to the new technologies available around them.

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Library Management to Knowledge Management: A Conceptual Framework

Uma Rajoba K

Abstract

The gateway is a place for individual and group study where the digital information sources and services are brought together for effective use. The gateway is the responsive to the changing informational needs of the society. The concept of gateway library for Knowledge Management will be an integral part of the information and database management in the global network environment. In this paper the author made an attempt to bring the conceptual framework beginning from concept of library management, information and leads to effective knowledge management. Further highlights the gateway librarian must have to cope up with the changing world of information and navigational tools. They must have specialized knowledge of the changing networked environment.

Keywords: Library management, Information management, Knowledge management, LIS professionals

1. Introduction

The libraries have their origin with the appearance of first written document in the form of clay – tablets in 2000 B.C. and since last 4000 years, this document is evolving and changing its shape from clay tablets to electronic media via printed book. The invention of printing press, computers and telecommunications are the land marks in the revolution of library, the size and fetchers of library accordingly changed at the different ages and situations of the society. The tasks of librarian are also changed from custodian to knowledge manager via library management. The task of librarian is put knowledge to work. Knowledge management was new term for what librarians and information professionals have already been doing during past several years. Librarianship was declared as a profession in 1880. This profession has been continuously changing in the roles and responsibilities performed. The changing forms of document as well as user needs are the indicators of this change. The document circulation service changed to reference, referral, photocopying, ILL, bibliographic service as per information demand. Then started new services i.e. CAS, SDI, Indexing, Abstracting etc. David Snowden of IBM (2003) said that the skills of librarians were highly valuable which are undervalued. Librarians were the first to bring some discipline and order to Knowledge Management with their classification schemes and information search tools. In recent times with the automation and digitization of information, it is being argued that the technology will overcome the library techniques and skills. But we all are aware that only the form of document has been changed from physical to electronic form, but not the content. Similarly, the traditional library has adopted new technology. IT has provided new facilitates for traditional information storage and retrieval system. It has created various challenges in library profession. Information is continuously expanding and technology is developing very fast. Each area of knowledge is changing. The conversion of conventional library into information center, digital library, electronic library or virtual library is the

demand of this era. Today's library is a combination of the conventional books and IT products in varying degrees depending on the types of library. The growth of information technology has challenged library management.

2. Library management to Information management

The terms organization, administration and management are semantic and used as group of executive functions associated with an enterprise. Librarian as a manager of the library has to establish a well designed system for collection management, resource management and service management. The development of science and technology has various impacts on library services. The electronic media, computers and satellite technology has changed traditional libraries into information centers, which possess digital materials e-books, e-journals and internet applications. Accordingly, library management concepts are changed into information management. With reference to library, information may be defined as the structure of any text which is capable of changing the image structure of recipient. The application of the principles of management to the acquisition, organization, control, dissemination and use of information is called IM. In Computer science, it is a synonym for Information technology. In management and business studies, it is concerned with technology management. In library science, according to D.D. Wilson (2007), "it is more widely concerned with its use."

Today we are living in information age, in which information has become the national necessity. It is valuable commodity to everyone. The development of any country depends upon the availability and use of information. Japan, Singapur and South Korea are successful countries and widely developed in all spheres mainly in economy and industry, due to the economic and scientific information is easily and widely accessible in these countries. Information centers i.e. libraries, documentation centers play vital role in socio-economic development of the nation. These centers are national resources. Because information is different from other several resources such as lands, minerals, water in the sense that it is dynamic in growth and inexhaustible. The wealth of intellectual scholarly & research resources stored in these institutions is one of the greatest assets of the nation.

3. Information management to Knowledge management

The term knowledge is broader, deeper and richer than information. Information is the organized data and Knowledge is the organized body of information. "The term KM seems to suggest that one knows how to handle knowledge."

The word knowledge can mean three things by our use. First to 'know about', second to 'know how' and third is body of knowledge captured in print, non- and print electronic media. Library science is closely related to the issues of knowledge management. It is broader term which covers how knowledge is organized, stored, processed and represented in global system. Library science typically refers to especially in recorded knowledge. Thus libraries deal with the knowledge and the mission of library is the KM. It is a application of sound management practices to human resources as a whole which are carrying the vectors of knowledge. It is management of an organization towards the continuous renewal of organizational structure, Hence KM needed in libraries to improve

library services, record information, create knowledge and enable users to share and learn by providing user friendly approach in all activities.

The terms IM and KM are closed related. However while trying to define them, the distinction would be fairly clear in the sense that.,

- KM involves IM along with the specialized activities that create, share and record new knowledge.
- IM deals with information present in the document and KM deals with the information content of the document as well as knowledge present in the employee's brain.
- In IM coded information becomes knowledge for future use. While in KM coded knowledge becomes information for knowledge base.
- The challenges of IM lies in valuing separate information items for profit and efficiency of an organization while the challenges of KM lies in tapping ,creating and sharing knowledge it for organizational development.

4. Knowledge management in LICs

KM in library and information centers is completely new concept. KM is not just like a data management and information management. Data, text, images, video, audio, multimedia documents, web pages all are its components. The objective of KM in LICs is to promote knowledge innovation, to promote relationship in and between libraries, between library and user, to strengthen internetworking and knowledge flow. Librarians have good skills in organizing and codifying information sources and making them available to its users. Librarians are skilled knowledge workers. They use their intellect to convert their ideas into information products, services and process. It is not only the theoretical system but also an application system. It includes following aspects.

4.1 Knowledge innovation management

Innovation is the act which improves the established system, constitute alternative arrangement in existing system and human relationship. The alternative should be tested against present and conventional arrangement. KIM refers to the management of production, diffusion and transfer of knowledge as well as networking the knowledge sources. It includes theoretical and organizational innovation. Theoretical innovation is that innovation which enriches and enlarges the conventional resources and systems. Organizational innovation creates effective and adoptable management system.

4.2 Knowledge dissemination management

It is equally important as compared to KIM. Knowledge creators do not have much time to look for knowledge users. Therefore library professionals may act as knowledge distributor. They provide access paths for searching and acquiring information by using electronic and communication technology. This requires to strengthen, develop and reengineering of own resources with secured network system.

4.3 Knowledge application management

It is the application of high-speed network system for providing knowledge services. It needs to establish virtual library, to digitize the important resources and to create digital databases. In 21st century business enterprises, government, public organizations, and research institutions need virtual libraries for information services. The electronic and digitized libraries are the technical modes and development trends of libraries in this knowledge society.

4.4 Human resource management

It is the basic need for KM in which the staff must have specialized talent as well as technical knowledge. It needs to focus on the variety and diversity of library staff. This requires promoting knowledge exchange among library staff, to arise abilities and enthusiasm of library staff for rebuilding the library into learning organization.

Due to changing information technology, economic and information environment KM in LICs become powerful tool for promoting research in all walks of life. The implementation of KM will give rise to library business process.

5. Role of LIS Professionals in KM

KM has put many difficulties in library and information centers to put it in the right place. The present society is taking the shape of information society. The proper information infrastructure, management techniques, and polices of library will fulfill the information needs of the society. Now information technology has resulted in reengineering of the libraries to face global challenges. In such a scenario, the library professional should act as an information resource manager, consultant, and database manager. Blaise Cronin, in his model, called the librarians as Electronic librarians and had suggested three level models for the library works.

- Top level is strategists – concerned with planning, trend analysis.
- Middle level is Network manager- concerned with system design, its implementation, networking, staff and user training.
- Third level is operative level- concerned with database searching, cataloguing, organizing and dissemination.

6. Conclusion

Today the term librarian is being replaced by the term 'information professional' and 'knowledge worker'. This change is occurred for transformation of today's information requirement to tomorrow's performance. Specially, private and public companies maintain libraries and information centers. They employ qualified professionals as Information Manager, Information Scientists, Database Manager, Resource Manager, Knowledge Worker and Knowledge Manager. Now the corporate sector has realized the importance of knowledge and knowledge management. Infrastructure Development Finance Co. Ltd and Prime Waterhouse Cooper Ltd. have recruited experts in library science as Knowledge Manager. Thus, library profession has a golden future in corporate sector. As a Knowledge Manager, they should have technical skills to cope with information needs of future world.

This role includes the identification and analysis of available and required knowledge, its planning, control for fulfilling the global information need.

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Cyber Crimes: New Challenges to LIS Professionals in the Cyber World

Vinay Kumar D **Sampath Kumar BT**

Abstract

The Internet in India is growing rapidly and it has given rise to new opportunities in every field–be it education, business, sports or entertainment. Today with the development of Information and Communication Technology and more particularly with growth of Internet, cyber crime is emerging as a serious threat to the society. The use of computers, internet and networked based information services in libraries are also affected by these cyber crimes. In this context this article focuses on the cyber crimes, various types of cyber crimes, IT act 2000 and it also highlights on how to prevent these cyber crimes.

Keywords: Cyber Crimes, IT Act-2000, Cyber Crime Prevention

1. Introduction

In India the Internet has emerged as one technology that is influencing every sphere of human activity. The Internet started in India in 1994 and in 1998 the Internet was thrown open for private Internet Service Providers (ISPs). Information Economy Report 2005, United Nations Conference on Trade and Development said India has 35 million Internet users and this is an 89 per cent annual growth (UNCTAD, 2005). The year 2007 has been declared as the 'Broadband year' by Indian government. Various initiatives have been undertaken to increase use of Internet among the academics as well as publics. The growth of internet exposed us to security risks that come with connecting to a large network. Computers today are being misused for illegal activities like e-mail espionage, credit card fraud, spams, software piracy and so on, which invade our privacy and offend our senses (Cyberlawsindia.net, 2011) Criminal activities in the cyberspace are on the rise. Internet, though offers great benefit to society, also present opportunities for crime using new and highly sophisticated technology tools (Muthukumaran, 2008). Today e-mail and websites have become the preferred means of communication. Many libraries are providing Internet access to their academic and research community and by their very nature, they facilitate almost instant exchange and dissemination of data, images and variety of material.

This includes not only educational and informative material but also information that might be undesirable or anti-social (Muthukumaran, 2008). Regular stories featured in the media on computer crime include topics covering hacking to viruses, web-jackers, to internet paedophiles, sometimes accurately portraying events, sometimes misconceiving the role of technology in such activities (State Crime Records Bureau, Tamil Nadu, 2008). Increase in cyber crime rate has been documented in the news media. Both the increase in the incidence of criminal activity and the possible emergence of new varieties of criminal activity pose challenges for legal systems, as well as for law enforcement (Muthukumaran, 2008). Since LIS professionals are using huge computerized database, e-mails, web based information services in the libraries, it is very essential to understand the cyber crimes and

its impact on libraries (Rathinasabapathy & Rajendran, 2007). Thus this paper highlights the problems of cyber crimes, various types of cyber crime and precautionary measurements to be taken by LIS professionals to avoid possible cyber crimes.

2. What is Cyber Crime?

Cyber crime can be defined as any crime with the help of computer and telecommunication technology with the purpose of influencing the functioning of computer or computer system (Jyoti & Goswami, 2011). Computer crime, cyber crime, e-crime, hi-tech crime or electronic crime generally refers to criminal activity where a computer or network is the source, tool, target, or place of a crime (Cyberlawsindia.net, 2007). It is estimated that there are over 2,095,006,005 Internet users around the world. In India it is 100 million (Internetworldstats, March 2011). Since these numbers are growing in lightening speed, opening a platform to committing and becoming victims of cyber crime. Cyber crime can take the form of simple snooping into a computer system for which we have no authorization. It can be the freeing of a computer virus into the wild. It may be theft of data, money, or sensitive information (Cyberlawsindia.net, 2007).

3. Internet Crimes

Today cyber crime poses a real threat not only to libraries but also to the whole society. Money and intellectual property have been stolen, corporate operations impeded, and jobs lost as a result of computer crime. There are various cyber crimes which cause our computers, databases, web pages/web sites of libraries, and OPAC. Some of the cyber crimes are:

3.1 Virus / worm attack - Virus is a program that attaches itself to a computer or a file and then circulates itself to other files and to other computers on a network. They usually affect the data on a computer, either by altering or deleting it. Worms, unlike viruses do not need the host to attach themselves to. They merely make functional copies of themselves and do this repeatedly till they eat up all the available space on a computer's memory.

3.2 Denial of service attack - This involves flooding a computer resource with more requests than it can handle. This causes the web server to crash thereby denying authorized users the service offered by the resource.

3.3 Unauthorized access - Unauthorized access to computer systems or networks means any person who secures access or attempts to secure access to a protected system.

3.4 Email bombing - Email bombing refers to sending a large amount of emails to the victim resulting in the victim's email account (in case of an individual) or mail server (in case of a company or an email service provider) crashing.

3.5 Data diddling - This kind of an attack involves altering the raw data just before it is processed by a computer and then changing it back after the processing is completed.

3.6 Intellectual Property Crime - This includes software piracy, copyright. infringement, trademarks violations etc

3.7 Cyber Stalking - Cyber stalking involves following a person's movements across the Internet by posting messages (sometimes threatening) on the bulletin boards frequented by the victim, entering the chat-rooms frequented by the victim, constantly bombarding the victim with emails etc.

3.8 Salami attack - This attack is used for the commission of financial crimes. The key here is to make the alteration so insignificant that in a single case it would go completely unnoticed, e.g. a bank employee inserts a program into the bank's servers, that deducts a small amount of money (say Rs.1 a month) from the account of every customer. No single account holder will probably notice this unauthorized debit, but the bank employee will make a sizable amount of money every month.

3.9 Cyber Harassment - It is a distinct cyber crime. Such harassment can be racial, sexual, religious etc. This could also lead to violation of privacy of citizens. Persons perpetuating such harassment are also guilty of cyber crimes. The library computer systems through which users access Internet might commit this type of crimes. Librarians should take utmost care to identify its user's activity while browsing through the library computers.

3.10 Hacking - Hacking has been defined in section 66 of The Information Technology Act, 2000 as follows "whoever with the intent to cause or knowing that he is likely to cause wrongful loss or damage to the public or any person destroys or deletes or alters any information residing in a computer resource or diminishes its value or utility or affects it injuriously by any means commits hacking".

Academic libraries offering digital library services, online information transfer services etc. But the web security measures are not maintained properly in the libraries due to lack of awareness. This led to the kind of cyber crime called hacking. The reasons behind hacking are gathering trophies, general mischief, financial gain, revenge, protest, criminal activity, identity theft, forging documents and messages etc (A&L Computer Software Limited, 2011).

3.11 Internet Time theft - An unauthorized person use the Internet hours of others illegitimately and gets access to some one else's ISP user ID and password by hacking or other means without the other person's knowledge basically known as Internet time theft. Libraries are paying huge amount to gain access to Internet with broadband facility. Sometimes the user IDs and passwords can be utilized by the non-users of the library. The Internet hours allotted for the library thus be stolen by the unauthorized library users. Libraries should take necessary step in this regard to protect the authorized user rights (IC3, 2011).

3.12 Auction Fraud - Numerous number of websites offer information sources at highly discounted rates. Consumers are offered latest editions of books, or any type of information sources at highly discounted prices, along with the gift offers. The mails were triggered to the consumers randomly. Auction fraud involves the non-delivery

of products purchased through an Internet auction site. Librarians should be careful while selecting such types of ways to build the collection (IC3, 2011).

3.13 Pirating - Illegal downloading of music, software and copyrighted information is known as pirating. Libraries providing access to the 24X7 Internet which allows its users to search and download unlimited bytes of videos, music files etc. Making multiple copies of illegally downloaded materials and distributing them also the crime. This should be avoided in the library environment.

3.14 Credit Card Fraud - Every organization in the cities especially utilizes the advantages of online payment methods. Library organization is not an exception. The unauthorized use of a credit/debit card, or card number, to fraudulently obtain money or property is considered credit card fraud. Credit/debit card numbers can be stolen from unsecured websites, or can be obtained in an identity theft scheme (IC3, 2011). Now a day's librarians are involved in electronic mode of payment. Librarians also are the target of this kind of crime over Internet.

3.15 Phishing/Spoofing - Spoofing generally refers to the sending fake email which appears as though it was sent by someone else than the actual source. Phishing is a way of attempting to acquire personal information such as usernames, passwords, back account information and by concealed as a trustworthy entity in an electronic communication. (IC3, 2011). Libraries transacting huge amount of information and provides services via Internet. Fake emails and the act of phishing lead to the exploitation of library sources and services. Thus these crimes might rupture the reputation of the libraries. The website used to steal the information would be of temporary in nature.

3.16 Cyber pornography - According to internet-filter-review.com (http://www.internet-filter-review.toptenreviews.com/), every second 28,258 internet users are viewing pornography, for every 39 minutes a new pornographic video is being created in the United States. Library is a place where user gains access to unlimited Internet service. As Internet is becoming a platform to distribute violent pornography, library users easily access pornographic sites. This has become a major problem to the library to block such websites (Adomi & Igun, 2008).

4. IT Act 2000

The Parliament of India passed its first Cyberlaw, the Information Technology Act in 2000. It not only provides the legal infrastructure for E-commerce in India but also at the same time, gives draconian powers to the Police to enter and search, without any warrant, any public place for the purpose of nabbing cyber criminals and preventing cyber crime. Also, the Indian Cyberlaw talks of the arrest of any person who is about to commit a cybercrime. Since the number of cyber crimes increases in India, the Central Bureau of Investigations (CBI) has established a separate cell to look after the cyber crimes. Further, State Governments were also requested to establish separate cells to take care of cyber crimes and Karnataka was the first state to set up a Cyber Crime Police Station in 2001 to register and investigate cyber crimes (www.cyberpolicebangalore.nic.in) under the

jurisdiction of Karnataka state. Following Karnataka, Andra Pradesh, Tamil Nadu, Delhi, Kerala, Orissa and Maharastra states are also started establishing cyber crime cells.

5. How to Prevent Cyber Crimes?

Today libraries in India, particularly the special libraries, university libraries, and few college libraries are extensively using computers, Internet and network based services for providing effective and efficient library and information services to the scholars and academic community. These libraries are also using computers for various purposes viz. circulation, cataloguing, information services, collection development and serial control. Someone either the library users or a mischievous staff may unknowingly or intentionally, conceal, destroy, alter or causes another to conceal, destroy, and alter any computer source code used for a computer in the Library.

Digital libraries of various R&D organizations libraries, academic libraries are handling huge bibliographical databases to cater to the information requirements of their user community. Most of these libraries have their own web site and they provide Web enabled Online Public Access Catalogue (Web OPAC) services to their library users. Some universities and research institutes have already started their own Institutional Repositories (IR) and providing their own digital contents through Web. So, LIS professionals should be aware of the data diddling where somebody may alter the raw data just before a computer processes it and then hanging it back after the processing is completed. They should ensure enough safety and security to their databases. So the following precautionary measures may be taken to protect our valuable data from cyber crimes.

5.1 Spam blocker

Most Internet providers provide a spam blocking feature to prevent unwanted messages, such as fraudulent emails and phising emails, from getting to your inbox. So e-mail user should turn on spam blocker.

5.2 Anti-virus software

Adequate anti-virus software such as McAfee, Norton Anti-Virus, Stopzilla or other similar programs are available and you should use these for your computers. You also need to make sure you regularly update your anti-virus software and that you do a once-a-week scan to locate and eliminate any malware, spyware, viruses and other problems. If you don't want to purchase security software, then there are programs, such as AVG, that offer free versions.

5.3 Encryption software

Encrypt important data you don't want compromised. Utilize encryption software, which "garbles" your data to make it unintelligible to anyone who tries to hack into your computer system.

5.4 Website blocking systems

The library should use website blocking system for pornographic sites. For example, SonicWALL blocking system. (SonicWALL)

5.5 Smart cards

Smart card technology is used in libraries that need to protect personal information or deliver secure transaction. Smart card technology can be used in RFID system enabled libraries effectively. It allows librarians to monitor the user's visits, hours spent in the libraries, secure circulation etc.

5.6 Reusable accounts/login passwords

The computer systems in the automated sections of the libraries should be password protected. Password should be distributed only to the authorized library staff. It should be taken care that the password should be changed from time to time.

5.7 Intrusion detection

Intrusion Detection System (IDS) is a network monitoring software system which identifies the malicious activities or policy violations (Mishra, 2002). Library and Information centers should use this kind of network monitoring systems to prevent malicious activities on the library databases.

5.8 Firewalls

A firewall helps screen out malicious users, viruses, and worms that try to access your network from the Internet (Microsoft Technet, 2011). It is a standalone system that blocks/permits web traffic, prevents unauthorized users (Northrup, 2011). For a library environment, a firewall is the most effective and important first step that a librarian can take to help protect the library network.

Besides this librarian make an effort to make a security code and program to guard the computer system from misuse. A check should be kept on the functioning of computer centers and any mis-happening shall be reported to the concerned authorities. Efforts should be made to discourage misuse of computers and access to unauthorized data. Awareness should be created among the library users regarding the cyber crimes, cyber laws and also the punishment / penalties to cyber crimes. Backup volumes of the data should always be kept to prevent loss from virus contamination.

Librarians should monitor the online activities of library users and should regularly check all browser and email activity. A wise thing to do is to use parental control software that limits the types of sites the user can gain access to. Include the Policy on how to use Internet at workplace as. Library may organise training to the users on usage of Internet and software and training on how they should treat confidential information and the essential passwords.

6. Conclusion

Change is the essence of life and what seems impeccable and indestructible today might not remain the same tomorrow. Internet, being a global phenomenon is bound to attract many crimes (Dubey, 2004). Since library and information centers are becoming knowledge repositories, it the responsibility of Library and Information Science professional to know the problems of cyber crimes, and they should also know to prevent

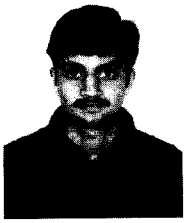
these crimes. Indian government has also taken a key step in curbing Cyber Crimes by the enactment of the Information Technology Act and by giving exclusive powers to the police and other authorities to tackle such crimes. Cyber laws aim to prevent cyber crimes through the use of penal provisions.

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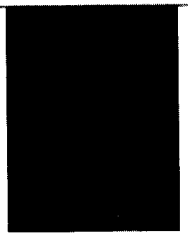
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Intellectual Property Rights: A Global Economic Value of the 21st Century

Rishi Tiwari D **Gayathri Devi S** **Ramesha**

"Without IPR, innovation is like a crop in an unfenced field, free to be grazed by competitors who have made no contribution to its cultivation"

- Prime Minister of Science and Engg, Council of Australia

Abstract

This paper has attempted to discuss how intellectual property rights gains importance in the information age. The paper discusses about Knowledge generation, dissemination by the three responsible entities of the society namely institution, government and the firms. An intellectual property right plays a pivotal role in deriving the socio-economic, political, technological, environmental, cultural benefits of a nation. Globalisation is a factor where it influences the economic development of a country and which can be strictly monitored and controlled by Intellectual property Rights. The paper also discusses about the role of patents in shaping the economic development of a country. Finally, the paper concludes by discussing about the limitations for the promoting intellectual property rights.

Keywords: IPR, Economics of information, Global economy, Patents.

1. Introduction

Everyone has the right to protection of the moral and material interest resulting from any scientific, literary or artistic production of which he is the author. And everyone has the right to share in scientific advancements and its benefits. To enable the society to have the benefits of any invention completely thoroughly it becomes necessary that the IPR system well in time which helps the author/creator gains his/her benefits and also allow the consumer to gain the benefits. To achieve this, there is a need for a greater emphasis on development of a highly skilled workforce as the effective use of emerging and innovative technologies depends increasingly on the skills of a technocratic workforce.There is growing recognition that IPR system ought to provide a balance of interests between the creators of new knowledge who often have to provide and risk large outlays and resources in the creation and development of technology for whom which is an important tool for accelerating economic and industrial development.[1] IPR being intangible, possess the tangible characteristics which makes it inevitable in the present information society where the information, technology are the driving force. Hence, IPR has gained a prominent place among all class of people in the present era of information and knowledge society.

2. Economic Value of the Information

Attaching an Economic value to information is only possible when the information is expected to yield higher payoffs or expected utility than they would obtain from choices made in the absence of information. *Economics of Knowledge, Economics of Information* is the bursting words that are heard by the information professionals in today's information

age. It becomes very necessary to learn and relearn the process of economics of knowledge to understand the dynamics of information. Information is no longer a protected domain of corporates; Information acquires its value by sharing among its research consortia and technological platforms and by attracting new capitalist ventures to create the market of knowledge. New mergers and acquisitions are happening by small firms signing contracts with academic institutions to produce new knowledge. The triangle of this economics of knowledge has three major participants. They are the Universities, the small firms and the Government. All of them are interdependent and interact with each other for the production of new knowledge and dissemination and thus innovating new economics of knowledge. This process of new knowledge generation, dissemination and derivation of economic benefits brings the governance into place. Hence, the Academic System supported with competent and innovative research activities plays a pivotal role in knowledge governance. The information centres extend their support in creation of new knowledge, dissemination and governance.

3. Globalisation and Global Economy: It's Impact on IPR

Globalisation is one of the main factors for the economic development. Globalisation in economic context can be understood as the reduction and removal of barriers between national borders in order to facilitate the flow of goods, capital, services and labour, widespread diffusion of technology. On the other hand Developments in the telecommunication and computers have aided for globalisation. ICT have enabled for faster financial transactions and business decisions, the cost of communication has been greatly reduced. Transport and communications have expanded the global trade phenomenally. Therefore the wide application of ICT has globalised many issues relating to Intra-industry trade, outsourcing, foreign investment, flow of financial capital.

Global economy has brought prosperity to many different areas with great advantages of contemporary technology, well established efficiency of international trade. The *Brain Power Industries* are Micro Electronics, Bio Technology and Telecommunications. Globalisation of trading activity includes trans-border transactions, Strategic alliances of trading activity, Joint ventures and technology, Co-production agreements. Global exploitation of technologies takes place through patents and licenses. There is a wealth of economic evidence demonstrating that globalisation brings great benefits. It offers the opportunity for a higher rate of sustainable growth. Growth that translates into healthier lives and improving, living standards. Through globalisation economic growth appears to be accelerated and widened. Globalisation tends to boost growth and growth reduces poverty. The poor as well as rich see their income rise as a result of increased economic growth.

In the present global economic scenario, the challenges and opportunities are thrown up by the fast eroding physical barriers to international transactions & the growing borderlessness of trade. In this situation, IPR is acquiring an important role on the international front. Intellectual Property Rights enable International Trade and Foreign Direct Investment and Exports.

Global Governance is the key challenge where international organisations have the potential to govern globally. Regional (Supra-National) solutions are emerging, providing institutions and mechanisms for co-ordination and steering to improve competitiveness. Examples are the EU Research Area and EU Framework Programme, the African Ministerial Council on Science and Technology, the MERCOSUR of Latin America, the Nordic Council of Ministers, and the ASEAN in the South-East Asia. Such governance solutions are the key issue in integration leading to new governance mechanism.

With the technological revolution and IP having increasingly become global issue, one of the challenges is to ensure that the IP system is developed internationally as a promoter of socio-economic growth. Economic progress is becoming technological driven and is accelerated through highly sophisticated technology based on new/original ideas, techniques, process and creative expansion thereof. Due to IPR, the competition is at an International Market rather at Regional markets. Intellectual Property System has to be viewed as Economic and Trade Competition. Intellectual Property system. International protection of IP acts as a "spur to human creativity, pushing forward the boundaries of science and technology and enriching the world of literature and arts. By providing a stable environment for the marketing of IP products, it also oils the wheels of international trade.

IPR has become an instrument of economic and trade policies in many countries. The key component for growth plan. To generate new knowledge and to give up their rights, the creators should have an incentive in terms of Economic benefits. Knowledge has the characteristics of non-appropriability, non-divisibility, non-rivalry in use. Knowledge not only helps to produce other goods but also produce more knowledge. The protection of IPR enables them to carry out international trade and helps them to proceed with investment decisions. IPR has a great impact on industries. It controls the multinational behaviour of firms. To engage in FDI, industries with high capital costs are more likely to maintain control over production knowledge in countries with weak IPRs. The IPRs helps to evolve anticorruption measures, effective competition policy on both FDI and licensing.

4. IPR and Role of Information Science Professionals

With the development of Science and Technology, telecommunication and Internet technologies, IPR has acquired multifaceted characteristics. They are the fundamental players for the economic development of a country which determine the trade and commerce policies and also stretch their impact on the governance of knowledge. The Patenting system creates a balance in protecting the inventor and also focuses on the harnessing of the invented product to achieve maximum economic benefits and promote Research and Development. IPR also makes its impact on the social and cultural behaviour of a society and hence justifies its multifaceted characteristic.

Information is non-rivalrous (everyone can use information), non-exclusion (cannot define exclusion for its use) and therefore, it is considered as a public good. The Economy lies in investing on the person who is able to use the information and to evaluate it. IPR defines to what extent the information can be transparent, define non-exclusion terms and non-rivalrous terms, so that there is a balance created between user and the creator.

Many studies and debates have revealed that there has been a drift in the knowledge generation and dissemination from corporate model to social networking, firms attached to Academic Institutions. Universities are playing a key role in generating new knowledge and thus achieving economic benefits out of the process. Therefore, information centres which supports *this drift of generating new knowledge, new economy has become a subject of importance in the 21st century* for further analysis and understanding. Understanding the importance of Intellectual Property Rights, their impact and influence on various facets of life, Information Professionals tend to acquire a broad spectrum of information and their protected rights to manage the information for their effective utilisation.

The role of information professional is dynamic in nature. He/She is not only well versed with the information management and retrieval techniques, it is a fact that the information professional is expected to be knowledgeable in social, economic, cultural, political, psychological, technological issues related to information. As Intellectual Property Rights is one among the issue which has its inter-disciplinary and multi-disciplinary scope which is dominating the information era, it is worth that the information professional is aware of its economic and various other impact on information and thereby to manage the information resources and services.

5. Patents and their role in promoting Economic development

The ultimate purpose of the IP system is economic in nature. The Patent system has greatly contributed to the orderly exploitation of inventions in newer and evolving fields of technology. Patent documentation as an information resource has become more intensive to those who are forced to compete in order to maintain and improve their position in the market place. The economic value of patent information lies primarily in its ability to provide industry and enterprise with technological and market information which could be used to their commercial advantage.

If the patenting policy is stronger, then it might not be able to yield the expected results out of its innovation to the society giving rise to monopoly. There are lots of discussions happening on the ***Patent Paradox*** Front where the patent is used as a fence for discrete inventions, building negotiating power through patent portfolios instead of its social costs and benefits.

New forms of reduced intellectual property rights seem necessary for both the dynamic efficiency of the system at large and for the working of the professionals. Constant upgrading of legislation, modernising infrastructures and administration, making them increasingly market oriented and user friendly together with collection and computerisation of patent documentation and its availability to industry, establish modernising of collective administration of copyrights.

6. Limitations

Greater awareness needs to be built of the economic value of IP for the private sector as well as national development and growth. The threats for the promotion of

Intellectual Property System are:

- ❖ Lack of adequate information
- ❖ Spreading misinformation about the usefulness of IP System

With fast emerging technologies, legislation is with the time taken in the formalities of its magnification usually a pace behind.

7. Conclusion

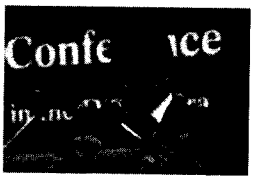
In the prevailing information age, knowledge is power and the driving force behind socio-economic, politico, technological, cultural development of a nation. Information has become a key factor due to the development of telecommunication and computer technologies. The only monitoring and controlling device is creating a strong intellectual property right to address the issues of globalisation to promote economic development. Intellectual property rights through licensing, patenting, transfers, turnkey arrangements through joint ventures can define a economic strategy. Many international institutes which are involved in this promotion becomes an area of exploration to understand their functioning and impact on developing country like India.

The triangle namely the institutions, government and firms responsible for new knowledge generation, dissemination through constant research are attaching an economic value to information. Information generated by professionals bears an economic impact in its absorption and creation. The information professionals who weaves and moulds the information, so as to make information as an economic product is given due importance in information society. In the information age, the person who uses the software to generate required output is more in demand than the software itself. The skill and knowledge of a competent and dynamic person to exploit the features of a software tool, databases are more valued than the product itself. An information professional possessing the skill, knowledge of the product and the required rights of intellectual property rules the world.

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Intellectual Property Rights and Its Categories: An Overview

Umesh Kumar Y **Manjunath M** **Vijayaraj Kumar US**

Abstract

The paper throws light with the introduction to intellectual property rights its definition, its journey, different laws enacted and which are in enforcement. The paper also highlights different categories of IPR along with their related laws such as copyright, patent, Trade marks, Trade secrets, Industrial Designs Geographical Indications etc. The paper also provides some issues related to IPR and finally with conclusion as to how best we can learn, share and inform some basic information related to IPRs with fellow beings in today's revolutionary World and Knowledge society.

Keywords: Intellectual property rights(IPR), TRIPs, Copyright

1. Introduction

The brain of human is very inventive and is never taking rest and it continuously creates intellectual output in the form of new designs, inventions, trademarks and other new-fangled things etc. When these entities appear intangible then it takes a form of property i.e. (Intellectual Property Right) "Right associated with intellectual property which gives legal protection is referred to as IPR. **'IPR'** is the creation of human mind. Potential efforts of human beings lead to intellectual outcomes, which in turn have considerable value in economy. Intellectual property Rights surrounds us in nearly everything we do. No matter what we do, we are surrounded by the fruits of human creativity and invention. The IPR covers almost all walks of life such as agriculture, biotechnology, industries and many more and library and information science is no exception.

2. Intellectual property rights: a conceptual framework

Intellectual Property is a term referring to a number of distinct types of legal monopolies over creations of mind, both artistic and commercial, and the corresponding field of law. The concept of intellectual property in the work as distinguished from the physical property in the material containing the words was developed by leading philosophers like Kant, Hegel and Schopenhauer. Under intellectual property law, owners are granted certain exclusive rights to a variety of intangible assets, such as musical, literary, and artistic works, discoveries and inventions, and words, phrases, symbols , and designs. Common types of intellectual property include copyright, trademarks, patent, industrial design, and trade secrets in some jurisdictions Although many of the legal principles governing intellectual property have evolved over centuries, it was not until the 19th century that the term intellectual property began to be used, and not until the late 20th century that it became common place in the majority of the world.

The four primary areas of intellectual property are

- **Copyright:** protects an original work of authorship fixed in a tangible medium of expression, such as a book, computer program, graphic artwork or motion picture
- **Patent:** protects a novel, useful and non-obvious invention, process or design
- **Trade secret:** protects confidential business information, including a computer programming code or other business formula, that gives its owner an advantage over other businesses
- **Trademark:** protects a word, symbol, name or other designation of a product. or service.

3. Intellectual property rights and its categories

3.1 Copyright

The original creators of works protected by copyright, and their heirs, have certain basic rights. They hold the exclusive right to use or authorize others to use the work on agreed terms. The creator of a work can prohibit or authorize:

- its reproduction in various forms, such as printed publication or sound recording;
- its public performance, as in a play or musical work;
- recordings of it, for example, in the form of compact discs, cassettes or videotapes;
- its broadcasting, by radio, cable or satellite;
- Its translation into other languages, or its adaptation, such as a novel into a screenplay.

3.2 Copyright in India

The journey of copyright in India may be traced back in the year 1847, when first Copyright Act was enacted. A modified version of the same was enacted in 1914. In India, the development of copyright law has been closely aligned to the British Copyright law. In 1911 India passed the first copyright act in 1914. A number of amendments to this act were affected in 1983 to avail benefits arising from the revision of Berne Convention and Universal Copyright Convention to which India is an adherent. Recent amendments of 1992 extended the term of copyright protection from the lifetime of the authorship plus 50 years to the lifetime of the authorship plus 60 years. The Copyright act of 1957 was passed by both the Houses of Parliament and the last amendment was on 13th May, 1994. The result was the enactment of Indian Copyright Act of 1957 replaced the act 1914. Act 1957 came into force on 21st January 1958. The Copyright Act of 1957 further became amended four times in the years 1983, 1984, 1994 and 1999. With these amendments Offence of infringement of copyright has been declared as an economic offence. The Copyright Act, 1957 provides copyright protection in India. It confers copyright protection in the following two forms:

1. Economic rights of the author, and

2. Moral Rights of the author.

3.3 Object of Copyright

The object of copyright law is to encourage authors, composers and artists to create original works by rewarding them with the exclusive right for a limited period to reproduce the works for the benefit of the public. On the expiry of the term copyright the works belong to the public domain and anyone may reproduce them without permission. Initially copyright law applied to only the copying of books. Over time other uses such as translations and derivative works were made subject to copyright. Copyright now covers a wide range of works, including maps, sheet music, dramatic works, paintings, photographs, architectural drawings, sound recordings, motion pictures and computer programs.

3.4 General Principles of Copyright

The moral basics for protection under copyright Law rests in the 8th Commandment "Thou Shall Not Steal". The law does not permit one to appropriate to him what has been produced by the labour, skill and capital of another, which is the very foundation and philosophy of the copyright law. In Library and Information Centres a few operations where copyright issues involvement are -

- Printing of copies
- Audio, Image and Audio visual copies
- Multimedia products
- Archiving
- Digital libraries
- electronic copies
- Electro copying and networking

Librarians are managing information and responding to requests from students, academics. Librarians work at the interface between information and technology, and have acquired a sound understanding of the realities and implications of the knowledge society. A few challenges posed are in -

- Preservation
- Interlibrary loan and document supply
- Education and classroom teaching

A library or educational institution should be permitted to make copies of a work in support of classroom teaching.

- Reproduction for research or private purposes
- Reproduction for research or private purposes
- General free use exceptions should also be applicable to librarie

3.5 Copyright Law Protects

In addition to protecting works such as a books, articles, computer programs, visual or graphic artwork, dramatic works, motion pictures, sound recordings, choreographic works and architectural works, copyright law covers certain types of compilations and derivative works. In the case of "work for hire" and some commissioned works, the employer or person for whom the work is prepared is considered to be the "author" for copyright purposes (and therefore the copyright owner) unless a written agreement states otherwise.

4. Patent

A Patent is a legal monopoly, which is granted for a limited time by a country to the owner of an invention. Merely to have a patent does not give the owner the rights to use or exploit the patented invention. That right may still be affected by other laws such as health and safety regulation or the food and drugs regulation or even by other patents. The patent, in the eyes of the law, is a property right and it can be given away, inherited, sold, licensed and can even be abandoned. As it is conferred by the government, the government, in certain cases even after grant or even if it has been, in the meantime, sold or licensed, can revoke it.

- A Patent gives an inventor the right for a limited period to stop others from making, using, selling or importing an invention without the permission of the inventor. That is why patent is called a "negative right"
- Patents are generally concerned with functional and technical aspects of products and processes and must fulfill specific conditions to be granted.
- Most patents are for incremental improvements in known technology - evolution rather than revolution. The technology does not have to be complex.
- Patent rights are territorial; an Indian patent does not give rights outside of India.
- Patent rights last for up to 20 years in India and in most countries outside India.
- Depending on where you wish your patent to be in effect, you must apply to the appropriate body. In India, this is The Indian Patent Office. There are various Patent Offices around the world. Alternatively, a Patent Agent can apply on your behalf.

5. Trade Mark

A Trademark is any sign which can distinguish the goods and services of one trader from those of another. A sign includes words, logos, colours, slogans, three-dimensional shapes and sometimes sounds and gestures. A trademark is therefore a "badge" of trade origin. It is used as a marketing tool so that customers can recognise the product of a particular trader. To be registrable in India it must also be capable of being represented graphically, that is, in words and/or pictures.

A trademark is a word, symbol, name or other designation that identifies and distinguishes a good or service. Trademarks exist mainly for the protection of the consumer; the ability to identify the source of a good or service helps the consumer to confirm quality and authenticity. Trademarks also help businesses prevent competitors

from usurping the goodwill associated with their products and services. Trademark law's origins lie in the common law on unfair competition, but statutory law has codified and expanded these protections.

5.1 Trade Secrets

A trade secret is a formula, practice, process, design, instrument, pattern, or compilation of information which is not generally known or reasonably ascertainable, by which a business can obtain an economic advantage over competitors or customers. In some jurisdiction, such secrets are referred to as "confidential information" or "classified information". The precise language by which a trade secret is defined varies by jurisdiction (as do the particular types of information that are subject to trade secret protection). Undisclosed information refers to trade secrets or know-how that has the commercial value because it is secret and that has been subjected to reasonable steps to keep it secret. For example the know-how to produce Rooh Afza, a popular drink is a trade secret.

6. Industrial Design Rights

An Industrial design right is an intellectual property right that protects the visual design of objects that are not purely utilitarian. An industrial design consists of the creation of a shape, configuration or composition of pattern or color, or combination of pattern and color in three dimensional forms containing aesthetic value. An industrial design can be a two-or three-dimensional pattern used to produce a product, industrial commodity or handicraft. Under the Hague Agreement concerning the International Deposit of Industrial Designs a WIPO-administered treaty, a procedure for an international registration exists. An applicant can file for a single international deposit with WIPO or with the national office in a country party to the treaty. The design will then be protected in as many member countries of the treaty as desired. Design rights started in the United Kingdom in 1787 with the Designing and Printing of Linen Act and have expanded from there. The Integrated Circuit Layout design Act of 2000 provides protection for the **IC** layout Design. The term of IC layout protection is for 10 years.

7. Geographical Indications

The term Geographical Indications (GI) identifies a good as originating from a territory, a region or a locality where a given quality reputation or other characteristic of the good is essentially attributable to its geographical origin. A few examples of GI are Darjeeling Tea, Basmati Rice, Kashmiri Shawls, Mysore mallige, Toys of channapatna etc. any association of persons or producers or any organization or authority established by law can apply for GI's registration. The term of GI is 10 years but may be renewed from time to time.

8. Some Issues of IPR

- The lack of awareness of IPRs among all sections of society is a major setback to a developing country like India. People spread across the countries who are concerned about Cultural growth and preservation as well as improved health and economic wellbeing, should understand how intellectual protection serves.

- It is known that although there is WTO's agreement (TRIPS) on IPR, the coordination across countries for the protection of IPR remains insufficient till now.
- The domain names, Jurisdiction and applicable laws are some issues in enforcing the IPRs in today's cyber world.

9. Conclusion

The faculty members of professional institutions need to become more familiar with IPR and IP laws. One of the important sources of technology lies in patents which is an important component of IPR. The knowledge of IPR is important for students and faculty of engineering, management, pharmaceutical and Law Institutes. This would help them in the process of R&D. Engineering and Management students who are well equipped with the knowledge of IPR will make the Industry they work in more competitive through timely sourcing the right technology.

Librarians should play an important role in protecting the rights of copyright holders, patent holders, trademarks, industrial design etc. The Librarians, information officer should also keep themselves aware with latest changes in the Intellectual Property Right and Information Technology Act and their implementation. It is an obligation of the Librarian to keep the user aware about copyright. Library science curriculum should include the IPR related issues every copyright law has always given maximum advantages and exceptions as it is done with honest intention of putting into use for readers as well as protecting interests of copyright owners. The technologies of computing and communication have engendered digital communication. Digital communication has in return accelerated knowledge creation and distribution". Libraries and information centers are responding to these trends. Thus Copyright tries to balance the needs of users and creators.

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Plagiarism: An Experience in Detecting It!!!

Rajendra Babu H **Mohan T A**

Abstract

Plagiarism is a social sin. It is an ethical issue. Here is an attempt to highlight the plagiarism, levels of plagiarism, types and issues aroused out of plagiarizing. Today everything is available in internet (at least snippets enough to satisfy the 'Information/ knowing thirsty'). This ready availability of information on anyone's fingertips is empowering information seekers to use it for the right reasons/ purposes. The same phenomenon is also luring information seekers to malpractice with the easy availability of information by over producing thus plagiarizing. This article also deals with the various automated/ software tools in detecting the plagiarism. We discuss here the plagiarism detection process using a specific software tool called "Plagiarism Detector". A detailed analysis of the plagiarism reports are discussed in detail.

Keywords: Plagiarism, Plagiarizing, Over-production, Copyright, Piracy, Academic dishonesty, Plagiarism detection, Plagiarism detecting Software

1. Introduction

The word plagiarism got into the English dictionary and thus gained usage since 1620. But, the word started its usage dates back to the first century. The word 'plagiarius' was meant for kidnapping in Latin. The instances of plagiarism as the intellectual theft or stealing an idea from original works and projecting it as someone else's has been evident since the civilization. With the advent of paper by the Chinese, movable types in 15th century by Gutenberg, leading the way to the invention of printing and its technologies and eventually internet in the fag-end of 20th century. Today everything is available in internet (to satisfy the 'Information/ knowing thirsty'). The magnitude of literary theft has grown exponentially ever since the advent of internet. With the decline in both 'reading habits and ethics', the amount of 'COPY and PASTE' has increased with the increased availability of information in electronic/ digital formats adding up to the increased plagiarism. With the advent of internet the information flow made is easy thus the research productivity and also reuse. This ready availability of information on anyone's fingertips is empowering information seekers to use it for the right reasons/ purposes. The same phenomenon is also luring information seekers to malpractice with the easy availability of information by over producing thus plagiarizing.

2. Definition of Plagiarism

The word derived from the use of the Latin word plagiaries -means "kidnapping"/ kidnapper - In the 1st century.

- According to the word web Dictionary, Plagiarism is "A piece of writing that has been copied from someone else and is presented as being your own work", it also

defines plagiarism as "The act of plagiarizing; taking someone's words or ideas as if they were your own".

- According to Merriam-Webster's online dictionary, plagiarism is defined as "an act or instance of plagiarizing" or "something plagiarized".
- According to the American Heritage Dictionary of the English Language, plagiarism is a serious scientific misconduct.

3. History

In ancient and medieval Europe, there was something of a double standard about plagiarism. Many authorless genres like religious texts were freely copied and incorporated into later works, "good writing" usually meant slavishly imitating a small number of respected authors (Cicero being the most important), and scholarship meant demonstrating mastery of the ancient greats. On the other hand, poets and playwrights have always jealously defended their words[2].

This began to change during the Renaissance when original scholarship became more respected and individual accomplishment was recognized in many more fields that it had been previously (for example, this is when painters began signing their works). Why this happened is an enormous subject that I won't go into right now. The point here is that, by the mid 1600s, accusations of plagiarism and stealing ideas were common in every creative field including the sciences. An accusation of stealing someone else's words or ideas and passing them off as your own was one of the worst insults imaginable and grounds for lawsuits and duels[2].

Just as a sidebar, the word "plagiarism," in the sense we use it today, first appeared in English in the various battles among Shakespeare and his peers. The mighty and majestic Oxford English Dictionary credits Ben Jonson with being the first to use it in print. The form they used was "plagiary," which is a Latin term for a type of kidnapper or illegitimate slaver[2].

4. What is plagiarism?

Plagiarism is an ETHICAL ISSUE and is termed as a social sin in modern day. It is also termed as the "wrongful appropriation," "close imitation," or "purloining and publication" of another author's "language, thoughts, ideas, or expressions," and the representation of them as one's own original work[1]. The copying from a book, article, notebook, video, or other source material, whether published or unpublished, without proper credit through the use of quotation marks, footnotes, and other customary means of identifying sources, or passing off as one's own the ideas, words, writings, programs, and experiments of another, whether or not such actions are intentional or unintentional."[3]

According to the Gallup Organization's September 2011 study, two of the top ten problems faced by the countries worldwide today are

- Education and
- Ethical and Moral Decline

Both the above were ranked over crime, poverty, drugs, taxes, guns, environment, and racism, wars/fear of war to name a few. The issues such as Education and Decline ethics can be attributed to the increased plagiarism. The majority or >2/3rd or slightly more of the plagiarism takes place in the education today.

5. Plagiarism Implications

As with any plagiarism issue, the degree of intent must be determined to see the nature of committed offense levels. The punishment varies based on the amount of malpractice. If found guilty, may result in minor reprimand to denial of higher positions and job expulsion based on the magnitude of the offense. To quote an Indian example, The Hindu reported on Saturday, 17th March 2007 that, Dr. R A Mashelkar (Former Director General of Council of Scientific and Industrial Research aka CSIR) resigns from high power Indian patent drafting panel following the allegation of plagiarizing in his report's concluding remarks ('Report of the Technical Expert Group on Patent Law Issues' to check that the amendments to the Indian Patent laws are TRIPS compliant or not). Dr. Mashelkar confirmed to news paper that certain lines used in their report's conclusion had been taken "verbatim" from a November 2005 paper that was authored by Shamnad Basheer, a doctoral student and an Associate at the Oxford Intellectual Property Research Centre, University of Oxford. (Feb 22, 2007). Plagiarism derails careers, name, fame, instills a sense of ethical malpractice in ones works ending up as a national shame in the global scenario, as we (India in total) are rapidly growing and predicted as the future global super power.

6. Facts about plagiarism[4]

Here are some recent findings regarding plagiarism:

- A study by The Center for Academic Integrity found that almost 80% of college students admit to cheating at least once.
- According to a survey by the Psychological Record 36% of undergraduates have admitted to plagiarizing written material.
- A poll conducted by US News and World Reports found that 90% of students believe that cheaters are either never caught or have never been appropriately disciplined.
- The State of Americans: This Generation and the Next (Free Press, July 1996) states that 58.3% of high school students let someone else copy their work in 1969, and 97.5% did so in 1989.
- A study conducted by Ronald M. Aaron and Robert T. Georgia: Administrator Perceptions of Student Academic Dishonesty in Collegiate Institutions found that 257 chief student affairs officers across the country believe that colleges and universities have not addressed the cheating problem adequately.
- According to the Gallup Organization (October 6-9, 2000), two of the top ten problems facing the country (USA) today are:
    - Education and
    - Decline in Ethics (both were ranked over crime, poverty, drugs, taxes, guns, environment, and racism, to name a few).

- A national survey published in Education Week found that 54% of students admitted to plagiarizing from the internet; 74% of students admitted that at least once during the past school year they had engaged in "serious" cheating; and 47% of students believe their teachers sometimes choose to ignore students who are cheating.

7. Types of plagiarism

- Intentional v/s unintentional plagiarism
- Word for word (Direct, Text)
- Thesaurus (Paraphrase)
- Stealing Ideas.
- False Authorship gained for others work/idea
- Self Plagiarism
  - The practice of an author using portions of their previous writings on the same topic in another of their publications, without specifically citing it formally in quotes.
  - This practice is widespread and at times unintentional
  - Violates the copyright that has been assigned to the publisher
  - No consensus whether this is scientific misconduct
  - If journals have developed a policy on this matter, it should be clearly stated for authors.

8. Why do people plagiarize?

- Everyone does it, so do I, attitude.
- Ignorance on part of individual abut plagiarism
- Lack of knowledge on the ethics of scholarly writing / poor writing skills
- Ambition, fierce competition, Pressure from peers/seniors
- Prevalence of Publish or perish system
- Plagiarizing is Faster, in the digital environment
- Chances of getting caught or action being taken is slim, while paraphrasing unless it is detected
- Intellectual Challenges faced while Academic Writing

9. Ways to avoid plagiarism

- Increasing the levels of ethical education/ behavior among the students/researchers/ employees and so on.
- Educating the information user/producer on the implications of plagiarism
- Do not rephrase, paraphrase, if so, cite/ provide appropriate references or sources
- For short quotes, please use quotation marks in the sentence.
- For longer quotes, please indent the entire passage
- If you have used a table, chart, diagram etc., cite the source directly below with a statement that permission has been requested/obtained.

- "All sources should be disclosed and, if large amounts of other people's written or illustrative material are to be used, permission must be sought."COPE, 1999.

10. Copyright and Plagiarism

- The issue of Plagiarism is not strictly related to copyright issues - but the two may overlap.
- Copyright is a legal concept; plagiarism is literary and plagiarism is more of an ethical issue.
- Publishers/ copyright holders are more worried about copyright violations.
- Copyright laws provide protection to the authors of "original works of authorship," including literary, dramatic, musical, artistic, and certain other intellectual works. This protection is available to both published and unpublished works. (Title 17, U. S. Code)
- Plagiarism is the unearned increment to the author who does plagiarism.

11. Plagiarism Detection

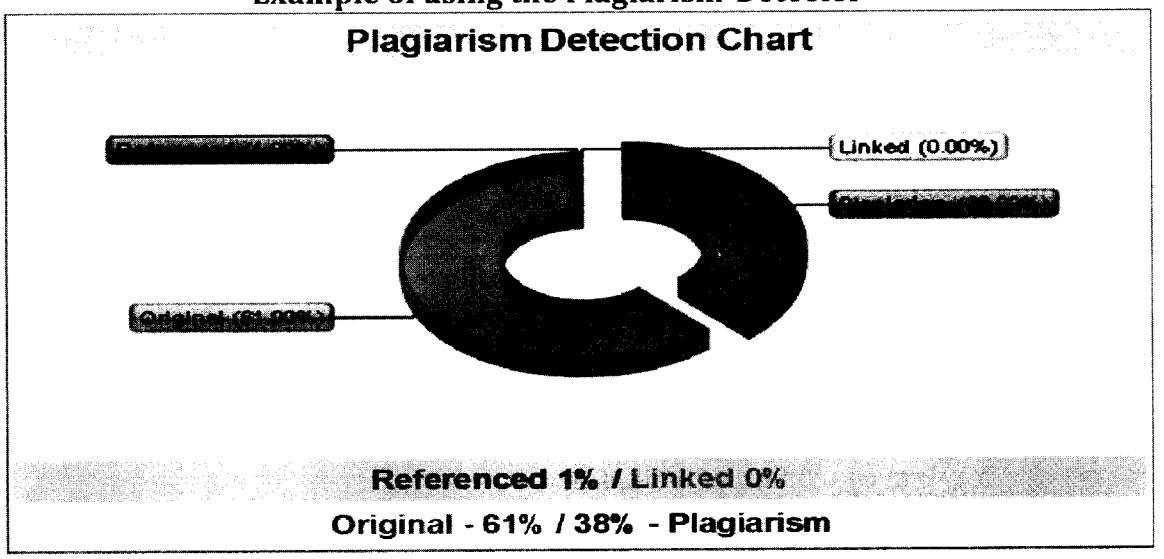
- **Manual Detection:** A great deal of expertise needed in their particular domain. In total it is non-comprehensive
- **Automated/ Computer/ Software Assisted Detection** (A digital problem addressed through a digital solution). Typical features of an effective plagiarism detection system are;
  - Detect Plagiarism and levels of plagiarism
  - Compares many sources
  - Quick and comprehensive
  - Generates report on exact data (Original, plagiarised and referenced)
  - Can check all forms/ formats of the documents
  - Provide Detailed Reports (DOC & HTML) with % of Originality, Plagiarism and References for further analysis

12. Software Tools to Detect Plagiarism

- DOC CopTM: A plagiarism, cryptomnesia and collusion detection tool.
- Viper: Free Plagiarism Detection tool
- Plagiarism Detect.com
- TurnItIn: The global leader in addressing plagiarism and delivering rich feedback
  - TurnItIn: for Educators
  - WriteCheck: for Students
  - TurnItIn: for Admissions
  - iThenticate: for Researchers & Publishers.
- Dupli-Checker: Free Online Plagiarism detection tool
- Plagiarism Detector: Proprietary Plagiarism Detecting tool
  - Checks >7 billion sources
  - Uses Google, Bing and AltaVista
  - Works fast - takes less than 1 minute
  - Supports Multiple Formats: pdf, doc, docx, html, txt, rtf

- References Detection
- Multiple document processing
- 97% effective
- Compatible with all MS Office versions
- State-of-art Advanced Report Generation and view

Example of using the Plagiarism-Detector



Top 3 Plagiarized Sources:

Words #	Source URL
90	http://tips.webdesign10.com/drupal/about...
59	http://www.contentmanager.eu.com/cms.htm
59	http://javascript-reference.info/modx-aj...

Detailed Document Analysis:

Chars#: 80
Words#: 40
http://www.forbes.com/sites/docentral/2...
WEB CONTENT MANAGEMENT SYSTEMS: DRUPAL A CASE STUDY Rajendra Babu H What is Content? Content is,
in essence, any type or 'unit' of digital information. It can be text, images, graphics, video, sound, documents, records etc - or in other words - anything that is likely to be managed in an electronic format. Definitions of Content. Something that is contained Something that is to be expressed through some
Chars#: 350
Words#: 59
https://www.adwebtech.com/portal/cms.html
medium, as speech, in writing, or in any of various arts
Content, stated as simply as possible, is information put to use. Content is the intellectual capital of an organization.
Chars#: 122
Words#: 19
http://www.cmscalendar.com/glossary.html...
Where It (content) Resides? Distributed across the intranet Individual desktops Division, dept. servers, websites Company websites – external, internal Servers: Database, E-Mail, Library What is Content Management? Management of the content,
by combining rules, process and/or workflows in such a way that its electronic storage is deemed to be 'managed' rather than 'un-managed'.

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Benchmarking: A Theoretical Approach

Veerabasavaiah M **Anjanappa M** **Manjunatha M**

Abstract

Benchmarking is management technique to improve performance. It is the continuous activity of identifying, understanding and adapting best practice and processes that will lead to superior performance. Benchmarking measures an organization's products, services and processes, to establish targets, priorities and improvements leading to competitive advantage and/or cost reductions. The data and information collected and analyzed as part of a self-assessment can be used in a benchmarking exercise. It is important to appreciate the difference between external comparisons, where just data is collected, and benchmarking as described here, where the drivers of the performance are identified. This paper describes Benchmarking Introduction, Evolution, Definition, Types, Benefits, Strategies and Conclusion.

Keywords: Benchmarking, Evolution of benchmarking, Strategies

1. Introduction

Benchmarking is the process of measuring an organization's internal processes then identifying, understanding, and adapting outstanding practices from other organizations considered to be best-in-class. It is systematic search for new ideas, methods and new measurements aimed at improving the quality of products and services, this practice gives librarians a common language to discuss their professional work process and solidify relationships. It provides methods for librarians to identify the attributes of 'good' library practices and implementing the same, benchmarking as journey of continuous improvement.

2. Definitions

According to Holly J. Muir defines Benchmarking is a Total quality tool used to measure and compare the library's works process with those other libraries. The goal of benchmarking is to increase your library's performance by adopting the best practices of the library benchmarking partners. Since best library practices are always evolving, benchmarking should be applied at lasted annually [7].

David T. Kearns defines Benchmarking is the continuous process of measuring products, services, and practices against the toughest competitors or those companies recognized as industry leaders" *[8].*

"Benchmarking is the search for industry best practices that lead to superior performance" [4].

3. Types of Benchmarking

There are different types of benchmarking as summarized below:

Types	Description	Purposes
Strategic Benchmarking	Where libraries need to improve overall performance by examining the long-term strategies and general approaches that have enabled high-performers to succeed. It involves considering high level aspects such as core competencies, developing new products and services and improving capabilities for dealing with changes in the external	Re-aligning libraries strategies that have become inappropriate
Performance or Competitive Benchmarking	Libraries consider their position in relation to performance characteristics of key products and services. Benchmarking partners are drawn from the same sector. This type of analysis is often undertaken through trade associations or third parties to protect confidentiality	Assessing relative level of performance in key areas or in comparison with others in the same sector and finding ways of closing gaps in performance
Process Benchmarking	Focuses on improving specific critical processes and operations. Benchmarking partners are sought from best practice organizations that perform similar work or deliver similar services. Process benchmarking invariably involves producing process maps to facilitate comparison and analysis. This type of benchmarking often results in short term benefits.	Achieving improvements in key processes to obtain quick benefits
Functional Benchmarking	Libraries look to benchmark with partners drawn from different library activity to find ways of improving similar functions or work processes. This sort of benchmarking can lead to innovation and dramatic improvements.	Improving activities or services for which counterparts do not exist.
Internal Benchmarking	Involves benchmarking in libraries within the same organization (e.g. libraries in different countries). The main advantages of internal benchmarking are that access to sensitive data and information is easier;	Several libraries within the same organization exemplify good practice and

	standardized data is often readily available; and, usually less time and resources are needed. There may be fewer barriers to implementation as practices may be relatively easy to transfer across the same organization. However, real innovation may be lacking and best in class performance is more likely to be found through external benchmarking.	management want to spread this expertise quickly, throughout the organization
External Benchmarking	Involves analyzing outside library organizations that are known to be best in class. External benchmarking provides opportunities of learning from those who are at the "leading edge". This type of benchmarking can take up significant time and resource to ensure the comparability of data and information, the credibility of the findings and the development of sound recommendations.	Where examples of good practices can be found in other organizations and there is a lack of good practices within internal libraries units
International Benchmarking	Best practitioners are identified and analyzed elsewhere in the world, perhaps because there are too few benchmarking partners within the same country to produce valid results. Globalization and advances in information technology are increasing opportunities for international projects. However, these can take more time and resources to set up and implement and the results may need careful analysis due to national differences	Where the aim is to achieve world class status or simply because there are insufficient" national" libraries against which to benchmark.

4. Benefits of Benchmarking

There are three sets of benefits:

- **Cultural Change:** Benchmarking allows organizations to set realistic, rigorous new performance targets, and this process helps convince people of the credibility of these targets. It helps people to understand that there are other organizations that know and do job better than their own organization.
- **Performance Improvement:** Benchmarking allows the organization to define specific gaps in performance and to select the processes to improve. These gaps provide objectives and action plans for improvement at all levels of organization and promote improved performance for individual and group participants.

- **Human Resources:** Benchmarking provides basis for training. Employees begin to see gap between what they are doing and what best-in-class are doing. Closing the gap points out the need of personnel to be trained to learn techniques of problem solving and process improvement.

5. Strategy

- **Develop a Plan:** This plan will include the purpose or why you want to benchmark; how you will go about doing the benchmarking study including training, selecting the team & model, gaining mgt support and approval, etc.
- **Select a Team:** To get volunteers from the staff that are interested and committed to the purpose and process. Someone that works with the selected process should be on the team because they will be instrumental in making needed changes.
- **Select & Follow a Model:** involved to use a specific model they have chosen.
- **Gain management support:** get the support of upper management is willing to provide and how they feel about staffing levels and workflow during the benchmarking project. Are there funds available for travel, hiring temporary help, etc
- **Implement Improvement:** a plan for actually implementing improvements after conducted the study and **analyzed the data.**

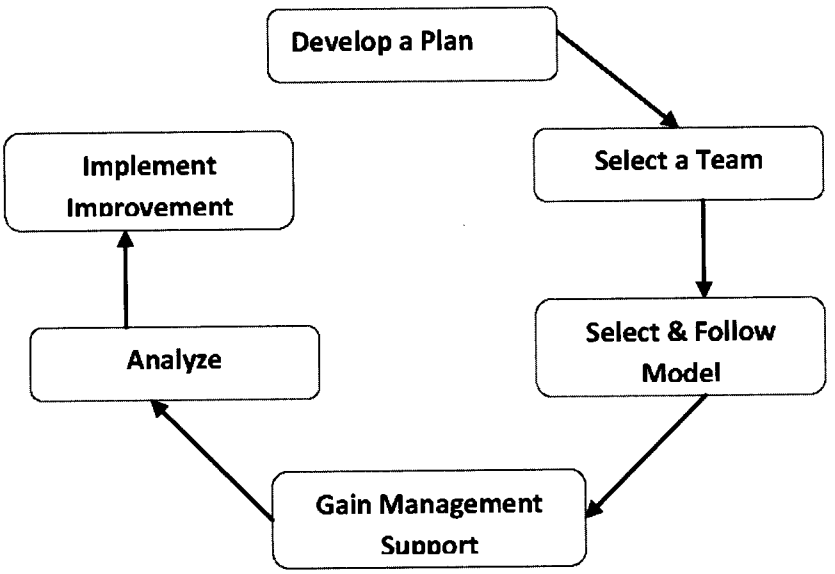


Figure-1

6. Conclusion

The highest goal of any library and information centers is credibility and respect. It becomes more visible and valuable to administrative and managerial decision makers contribution and a well thought-out approach to benchmarking and attention to their application can enhance the quality and success of any libraries. It involves the basic

procedures: measurement of key processes; identification of gaps in performance; comparison of the processes with other libraries leading to improved performance.

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Best Practices in Academic Libraries

Karekar Shobha U **Mudhol Mahesh V**

Abstract

The present study is aimed at assessment of the best practices followed by the different academic institutions in the state of Goa. The selected institutions are funded through different agencies such as UGC and AICTE. Questionnaires are distributed to the librarians of four colleges affiliated to Goa University. Two colleges are professional colleges which conduct engineering and law courses. Engineering college is funded by AICTE; other two colleges are non-professional colleges. An attempt had been made to compare the best practices followed by all the four academic libraries under different academic environment.

Keywords: Best practices, CAS, User orientation, Library services, Library resources

1. Introduction

University Grants Commission and higher education experts are concerned about quality of higher education and they want to develop higher education infrastructure keeping in view the quality as yardstick.UGC defines best practices as an application of procedures to yield superior results which means ways of doing things in particular organization as guidelines for good practices. Library and information services of Higher Education institutions play a central role in enhancing the quality of academic and research environment. Library is the fulcrum of support for the entire range of academic activities on an educational campus. In today's high tech learning environment, the library as a learning resource is taking up increasingly more academic space and time in the life of a learner. Globalisation is playing major role in making today's students more focussed and demanding. At the same time it is introducing resource crunches and concept of value for money even in education sector. In this scenario, only those libraries satisfy its users which can develop best practices with the available resources.

3. Objectives of the study

- To find out various methods of best practices followed in the academic libraries.
- To compare the best practices followed in the different institutions funded by different agencies.
- To compare the best practices followed in professional and non professional institutions
- To find out the new methods of best practices to enhance the usability of academic library resources and services.

4. Methodology

Questionnaires are distributed to the librarians of four different colleges. The colleges selected are, Smt.Parvatibai Chowgule Cultural Foundation's college of Arts and

Science Ftorda, Margao, a non-professional and NAAC A+, funded by UGC;D.M.'s college of Arts, Scence and Commerce Assagao a non professional and NAAC B, funded by UGC.; V.M.Salgaonkar's college of Law, Miramar a professional college funded by UGC; Goa engineering college a professional college funded by AICTE, which are assigned as college.1,college.2,college.3,college.4respectively for the convenience of explanation.

Table 1: Working of library on holidays

Days	College.1	College.2	College.3	College.4
Saturday	yes	Saturday1/2day	yes	no
Sunday	yes	no	yes	no
Holiday	yes	no	no	no

Table 1 explains that only college.1 keeps the library open throughout the year where as college.3 keeps the library open on Saturday and Sunday .Other two colleges do not keep open the libraries on Saturday and Sunday except college .3 keeps the library half day open on Saturday. In all the colleges libraries are working beyond the class hours.

Table 2: Working hours of the library

Extended working hours			
College.1	College.2	College.3	College.4
yes	yes	yes	yes

4.1Manpower Development

Table 3: Librarian's participation in professional programmes

	College.1	College.2	College.3	College.4
International	yes	yes	-	-
National	yes	yes	yes	yes
Local/Regional		yes	yes	yes

Librarian of college.2 attended all the three level professional programmes, librarian of college.1 attended national and international professional programmes and other two college librarians attended national and local professional programmes.Table.3 indicates that all the librarians are attended professional programmes of different levels to enhance their ability to improve the services rendered by their library to the users.

4.2 Infrastructure of the library

Table 4: infrastructure facilities in the library

Infrastructure Facilities	College.1	College.2	College.3	College.4
Staff area	yes	yes	yes	yes
Reading Hall	yes	yes	yes	yes
Periodicals Section	yes	yes	yes	yes
Circulation Counter	yes	yes	yes	yes

Information Display	yes	yes	yes	yes
Magazine rack	yes	yes	yes	yes
Ventilation	yes	yes	yes	yes
Water &Toilet facility	yes	no	yes	yes
Notice Boards	yes	yes	yes	yes
Research cubicles	yes	no	yes	yes
Un interrupted power supply	yes	yes	yes	no

All the four libraries have separate premises of their own for the libraries.

4.2.1 ICT infrastructure

Table 5: ICT infrastructure

ICT infrastructure	College.1	College.2	College.3	College.4
Networking	yes	yes	yes	yes
Fully automated	yes	yes	yes	yes

All the four libraries have network connections and they are fully automated.

4.3. Library Policy

Table 6: Approved library policy

Library policy	College.1	College.2	College.3	College.4
Collection Development	yes	no	yes	yes
Introduction of new service	yes	no	yes	yes
Annual increase in budget	yes	no	Subject to availability of fund	yes
Binding procedure	yes	no	yes	yes
Removal of obsolete books	yes	no	yes	yes
Policy on loss of books	yes	no	yes	yes
Promotion and training of library professionals	yes	no	yes	yes
Stock verification	yes	no	yes	yes

Table.6 displays that there is approved library policy in majority of the colleges except one college.

4.4 Budget

Table 7: library budget

Library Budget	College.1	College.2	College.3	College.4
Books	yes	yes	yes	yes
Journals	yes	yes	yes	yes
Other	yes	yes	Digital lib.	Lib.furniture
ICT Infrastructure	yes	yes	yes	yes

In table.7 all the libraries displayed that there is appropriate growth in the library budget college.3 and college.4 displays that there is growth in budget for digital library and library furniture respectively.

4.5. Library collection

Table 8: Library Collections

Library Collections	College.1	College.2	College.3	College.4
Books	1,20,000	32,000	17,364	76,662
Text Books	25,000	10,000	8,520	70,630
Ref.Books	25,000	22,000	2672	6,032
Current journals	130	55	31	87
1.Indian		50	9	41
2.Foreign	100	5	2	46
Online-journals	2100	2100		IEEE &JRNL.OF Bio fuels
Peer Reviewed		45	16	
Back Volumes	5006	127		5020
Magazines		25		44
CD s/DVDs	500>	1600	200 >	2307
Databases	unlimited		Two online, 3 off line	
Competitive exam books		400		150
Braille materials		nil		___
Rare Collection	plenty	2500	Rare reports	
AV Materials	unlimited	nil		
Collection of : UNO	Access through licence			
World Bank	"			
EU	"			
UGC	"	2800		
DST	"			
Other	"			
Govt.documents	"			
Book bank	6000	available	8000	11867
Ratio of library books to the students	20:1	5:1		44:1

Table 8 displays that there are sufficient number of current journals both Indian and foreign and good number of online journals to keep the users well informed about the current developments in the fields of their interest. Book bank facility is available in all the

four libraries under these scheme students get additional number of books for their use, which they can use for longer period.

4.6 Services

Table 9: Library facilities/services

Library facilities/services	College.1	College.2	College.3	College.4
Publication and research support services	yes	yes	yes	no
Information display	yes	yes	yes	no
Bibliographic compilation	yes	yes	yes	yes
ILL/Resource sharing	yes	yes	yes	no
Reprographic facilities	yes	yes	yes	yes
Book Bank	yes	yes	yes	yes
User Orientation	yes	yes	yes	yes
Computers	yes	yes	yes	yes
OPAC/Indexing Services	yes	yes	yes	yes
A/V Resources	yes	yes	yes	yes
Internet	yes	yes	yes	yes
Digital Library Services	yes	yes	yes	yes
Any other	yes		Scand print	yes

Table 9 displays that almost all most all the college libraries provide above listed services to the readers except college.4 where some services are not provided to the readers.

4.8 Extent use of Services

Performance evaluation of college libraries needs to be carried out at regular intervals in order to sustain and enhance their quality. Normally evaluation can be made on compilation of use statistics. The parameters would help in assessing the extent of use of library and its services.

Table.10: Extent use of services

	College.1	College.2	College.3	College.4
Average no. of books issued per day	500	100-120		400-450
No. of reference enquiry per month	200	150		4000-5000
Average no. of users per month	300	4500	3000>	47000-60000
No. of e-library/e-documents delivered per month	500	180	Not calculated	100-150

Table.10 displays that college.1 and college.2 and college.4have maintained the statistics of extent of use of the library services where as college.3could manage to keep the record of the average users visit do the library in a month.

4.9 Best Practices

Table 11: Best Practices followed by the libraries

Best Practices	College.1	College.2	College.3	College.4
Library brochures/diaries	yes	no	no	no
Central Reference library	yes	yes	yes	yes
A feedback from users	yes	no	no	no
Compiling & displaying student/teacher attendance statistics	yes	yes	yes	yes
Communication of current awareness to different user groups	yes	yes	no	no
Information literacy programmes: 1.Begining of the academic year with a general presentation	yes	yes	yes	yes
2.Periodically for the need based groups	yes	yes	yes	yes
3.Teaching library programmes	yes	no	yes	yes
Circulation of digital repositories: 1.Article repositories	yes	yes	yes	no
2.Publication repositories	yes	yes	yes	no
3.question paper repositories	yes	yes	yes	no
4.Course ware repositories	yes	no	yes	no
Displaying the new arrivals	yes	yes	no	yes
Suggestion box & timely response	yes	yes	no	yes
Development of the webpage/website from the library	yes	yes	no	yes

Table.11 displays that all the four colleges practice almost all best practices except some practices not followed by the libraries.

5. Findings of the study

An attempt has been made to give summary form of the study and suggestions to improve the best practices in academic libraries in the state of Goa.

- All the colleges provide library services beyond the lecture hours of the college.
- All the colleges have library advisory committee which constitute faculty members. Library committee approves recommended books and journals, provide suggestions to render best services to the users and take care of the library staff to get best out of them.
- All the librarians are well qualified as per the norms of UGC and AICTE as per the requirements of their parent organisation and they attended International, National and regional professional programmes to enhance their ability to provide the best services to the users of their respective libraries.

- All the libraries have their own premises and contain other infrastructure amenities like staff area, reading hall, periodicals section, information display, etc.
- All the four libraries are fully automated and have networking facilities.
- Except one library other three libraries have approved policy on collection development, introduction of new services, annual increase on budget, binding procedure, removal of obsolete books, loss books, promotion and training of library professionals and stock verification.
- All the four libraries positive about the appropriate growth in the budget for books,Journals,ICT infrastructure and college.3specified that there is growth in the budget for the development of digital library and college.4 specifies that there is growth in the budget for the purchase of library furniture.
- All the college libraries except college 2 said that they do not have research cubicles this exhibits that three colleges promote research activities in their institution but when discuss about the collections college.2 has 68.75% of the total number of books as reference books which is very much appreciated where as on the contrary college.3 and college.4 both have only15.3% and 4.74% of the total books as reference collection which is a very small proportion for the professional colleges.
- Book bank facility is available in all the libraries which help the students to have more books in their subject which they can retain for longer period.
- Ratio of the library books to the students varies as per the norms of the funding agency of the institutions.
- All the college libraries follow best practices such as ;library brochures/diaries to information to the users, a feedback from the stake holders through a significantly designed and analyzed questionnaires to collect the users 'opinion to improve the library facilities and services.

6. Suggestions

An attempt has been made to address the recommendations based on the findings of the study that may help further to implement the other best practices other than those mentioned in the study to improve the services and the facilities to the users of the libraries. The suggestions are given below,

- Library should be kept open preferably on Saturdays and Sundays so that researchers and faculty members can make use of the library facilities during their free hours.
- User orientation should be strictly provided by all the libraries for the new users and whenever new services facilities are introduced in the library.
- Inter Library Loan and Resource Sharing should be practiced by the academic libraries to fulfil the growing demand of information by the users, which lessen the financial burden of the library budget of the academic institutions.
- Libraries should produce brochures, diaries, information packs which display the services, facilities, collections and other information to the new users and the visitors of the library.

- A feedback from the stake holders through a significantly designed and analyzed questionnaire to improve the existing services, facilities and resources of the library.
- Professional colleges in some aspects lagging behind the non professional colleges. College.3 and college.4 should revise their collections to enhance the research activities among the users of the libraries.

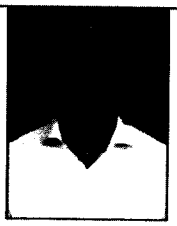
1. Conclusion

College libraries have to create an image of being interesting and happening place to attract the young generation towards them. Many events can be organised to promote library activities such as sports day, cultural day and special days such as national day, environmental day should be effectively used to promote library resources and services. To cope with the timely challenges every library has to identify and develop its own tailor made best practices to enhance the collection development process, services, dissemination and use of the services as a whole. Appropriate planning, fore thinking, a detailed analysis of user base, objective of the affiliating institute and its future strategies should be taken into account while planning best practices. Many library stakeholders grumble that any best practice means involvement of a lot of resources especially in terms of money and equipment. In terms it requires active participation, willingness, creativity and problem solving attitude from the library stake holders.

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Best Practices in Library Information Services of Central library, Guru Ghasidas University, Bilaspur (India): An Overview

Arya M K **Brajesh Tiwari**

Abstract

The paper is based on the best practices and it describe the strategy of an organization, to enable in improving its processes, activities, resources and high quality information value-added services to its users. It presents the study of the central library of Guru Ghasidas University, Bilaspur to illustrate that adoption of well defined, user focused and technology oriented processes and services with a flexibility to change and improve can lead the library to be the best. It concludes that the best practices in library information services can provide best services and resources to meet users' needs.

1. Introduction

Information is a dynamic and unending resource that affects all disciplines and all walks of life. ICT has revolutionaries the field of library and information services. It has developed to such a stage that it has given access to information. Information Technology is a generic term that covers the acquisition, processing, storage and dissemination of information. Developments in Information technology and best practices in library services have brought many changes in university library services and infrastructure of Guru Ghasidas University, Bilaspur. Best practices are used as a tool for the continuous improvement of products, process & services. The main purpose of the best practices can be summarized as the:

- Development of the fundamentals that leads to success
- Focus on the continuous improvement
- Management of the institution by over all changes.

This term is used frequently in the field of administration, educational system, construction, management, business management, project management, hardware & software product development etc.

2. Aim and Objectives

The aim of the study is to find out the modern services through best practices in central library of Guru Ghasidas University, Bilaspur.

3. Methodology

The focus of the study is to find out the Information services in the university library of Guru Ghasidas, Bilaspur. The data is derived from Librarian and library staff by interview and by discussion. The Collected data were analyzed and interpreted in a suitable manner to find the result.

4. Best Practices in Central Library Guru Ghasidas University, Bilaspur

Guru Ghasidas University Library is a place where information are acquired, collected, processed, organized and disseminated to the users according to their need, in simple way information are prepared for the information seeker according to their demand. Thus, Guru Ghasidas University library may be redefined as a place to get unrestricted access to information in many formats and from many sources. More recently, this library is understood for extending beyond its physical walls providing assistance in navigating and analyzing tremendous amount of knowledge with a variety of digital tools.Guru Ghasidas University library providing the best possible facilities for education, research and management, it was first automated University library in Chhattisgarh to provide the needed infrastructure in term of finance, manpower, equipment, training and retraining facilities for the success of such exercise.

5. Central Library Guru Ghasidas University, Bilaspur

5.1 Library Facilities

The library is having excellent reading facilities with ergonomically design furniture, and equipments and congenial atmosphere. The library is having a seating capacity of about 700 readers at a time. The researchers cubical are provided in the library for the research scholars as well as for the faculties of the university. The library also possesses a digital library with one powerful Xeon server (Rack model) connected with the institute's optical fiber LAN of the university. It has about 30 personnel computers, all connected with the LAN. The access to the full text online journals (more than 4000) may be accessed in the digital library as well as anywhere in the university. The table 1 shows frequency of users visiting the Library.

Table 1: Frequency of Visiting the Library

S.No	Frequency of visiting the library	Students	Others	Total %
1.	Daily	97.82%	81.25%	90.12%
2.	Once a week	2.18%	12.5%	6.97%
3.	Once a month	0.00%	6.25%	2.91%
4.	**Total**	**100.00%**	**100.00%**	**100.00%**

From the table 1 we can understand that (97.82%) student and (81.25%) other users used the library daily for their information needs. (2.18% and 12.5%) of both users used the library once a week and only (6.25%) of other members of library used the library once in a month. The table shows that total (90.12%) users visited the library per day for satisfying their information requirement.

5.2. Library Resources and Management

Library Networking: Library is having its own subnet connected with the backbone of the university LAN with ISO certified and D-Link brand optical fiber cabling and media converters. Internal networking has 44 nodes for clients with CAT-6 cable, and 24 ports D-Link 10/100/1000 Mbps switch.

Servers & Computer work station: Library is having two servers. One of the server is an inter Pentium –IV, being used for websites development activity as well as for the digitization of thesis. Another one is a powerful Rack model inter Xeon @ 3.02 GHz and 310K rpm HDD for library automation, acquisition, technical processing, circulation, serial control, bar-coding, and other housekeeping activities. There are 43 clients with Intel P-IV @ 3+ GHz, 800 MHz with FSB technology, 1 mb catch, Intel 865 G chip sets. In addition to this laser printers are also available.

Online UPS: Library is having a 15 KVA with one hour back up online UPS for un-interrupted power supply. All the clients and server are attached with the said online UPS.

Library Automation: The library automation is being done with the help of library software package, SOUL developed by the INFLIBNET of UGC. A bibliographic database of about 40,000 books has already being created.

5.3 Collection Development

Reference books, Text books & Book bank: Library is having a collection of about 1, 00000 (1 lacks) documents. It also has a strong database of about 90,000 books which may be accessed through Library OPAC at University INTRANET as well as on INTERNET all over the world.

Online full text titles including e-journals: The library holds permission to access as many as 20,000 full text titles of online journals and 7000 full text online journals under INFONET Consortium of UGC with J-gate consortia JCCC **http://jccc-infonet.informindia.co.in/** and 12000 full text titles of online journals under J-Gate. **http://www.j-gate.infomindia.com**. 3000 full text journals on management science under ABI informatics form.

Printed Journals: About 257 titles of current journals in printed form are also available for the use of readers.

Theses Achieve: The archive of 7,000 theses has been created using SOUL Software and some of them are also accessible in University LAN.

6. ICT based Services offered by the Guru Ghasidas University Library

- **OPAC (On-line Public Access Catalogue):**
- **Electronic Information Services:**
- Online Search and Internet service
- Audio-visual aids and CD-ROM services

Table 2: Use of ICT-based services by Students Vs others N=100

SL	ICT-based services	Students	%	Others	%	Total N=100	%
1.	OPAC	60	65.22	24	30.00	84	48.84
2.	Internet/online journals	32	34.78	50	62.5	82	47.68
3.	Audio-visual/CD-ROM	00	0.00	06	7.5	06	3.48
Total		**92**	**100**	**80**	**100**	**172**	**100**

Table-2 shows that (65.22%) students searching OPAC and only (34.78%) students use of internet/online journals for searching their information followed by others members of library who use (62.5%) Internet/online journals and (30.00%) OPAC and (3.48%) Audio-visual/ CD-ROM. From the table is clear that most of the visitors of the university library make use of one or other types of ICT-based services.

7. Best Practices on Different Section of the Library

The Guru Ghasidas university library has 05 major sections.

7.1 Acquisition Section

With the help of web, acquisition work has become very simplified. Order placing, duplication checking, price checking etc are done very effectively using ICT technique. For the procurement of journals, order is placed in the prescribed format to the publisher through Internet. E-mail helps in sending reminders to the publishers, vendors and even to the borrowers of the books. IT also helps in the process of the serial control in the university library. It helps in preparing union list of serials and helps in circulating via e-mail to the branch libraries.

7.2 Technical Section

Establishing links to the most frequently used library catalogues have the librarians for authority work. With the help of OPAC, it is found very convenient for the technical staff to assign call numbers to the newly added books. IT has reduced the volume of work done in catalogue card preparation with the help of SOUL software Guru Ghasidas library created a central bibliographic record for the library management system.

7.3. Circulation Section

The use of technology device such as computer, barcode scanners and its software in circulation helps in performing the routine operations easily and quickly. For accurate and expeditious circulation service in the library, almost all the collection of library is bar coded with thermal printing. The bar coding of students IDS are also being made using polyester barcodes labels, all the barcodes are coated with transparent tape. The SOUL software helped in transaction process of the collection in the library and in issue and return of books.

7.4. Reference Section

Reference section of Guru Ghasidas university library has both, printed and

electronic reference sources. It can be defined as a way of establishing contact between a user and his/her document in a personal way. "It is a contact between the right reader and the right book at the right time and in the right personal-way".

- ❖ Providing of information using reference books in response to specific queries of the users.
- ❖ Giving referral service for inquires which the information centre/system cannot answer.

7.5. Electronic Information Services

- ❖ Online Search Service:
- ❖ CD ROM Search:
- ❖ Internet Search: Audio Visual Aids:
- ❖ E-mail Service:
- ❖ Bulletin Board Services:

8. Finding and Conclusion

- Users are making very good use of the available ICT facilities.
- About (65.22%) students of the library prefer printed materials by searching OPAC for getting information and (34.78%) students depend on internet and online journals provided by the library.
- About (62.5%) other member of the library prefer non-printed material such as internet and online journals and (30.00% and 7.5%) members search OPAC and use CD-ROM/ Audio visual material for getting their information.
- With the help of technology like internet, E-mail, telephone, fax etc reference queries are answered faster than before.
- With the use of Information communication technology, CAS, SDI, reference service is also done faster.
- Circulation section is also working easily and faster with the help of ICT.
- Book selection, price checking is also done very efficiently using ICT.

The Best Practices in a central library of Guru Ghasidas University have changed the idea of LIS (Library Information Service). It helps in discovery the process of information and close performance gaps, solve the problem, and It create new opportunities and idea. It pursuit of superior performance that can motivate and lead libraries to best practices. It is a process to changing the idea in a new term, it is an attitude or a philosophy based on the desire for continuous learning and improvement.

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Building state-of-art Information Centre in Aerospace Domain at CSIR-NAL: Best Practices

Raghavendra R **Shivaram B S** **Poornima Narayana**

Abstract

The key to effective library collections management is to implement simple structural organizations and be able to present those organizations in a way that library users find useful and can understand easily. The present article provides a comprehensive description of collection management principles and practices followed in modern library situations in a Research and Development (R&D) setup, NAL, ICAST. It attempts to forecast the increasingly complex and dynamic interplay between the evolving system of scholarly communication and the collection management function of libraries. It will be a useful reference tool for practicing librarians and library professionals.

Keywords: Collection development, Modes of collection development, Polices, ICAST, CSIR-NAL

1. Introduction

The library, historically an archive of scholarly endeavor, is reinventing itself in today's networked society to meet the new demands and challenges of user's instantaneous requirements and needs. Instead of a building that holds books, the library is evolving into an electronic portal to a growing global collection of digital content. The doors to this virtual library are accessible 24x7. Today's library includes sophisticated tools and technologies, thus making easier to access the best information resources, delivering them to one's desktop or handheld devices (2G,3G..) at a push of a button away. These services require appropriate software as well as equipment. The ultimate mission of a library and information centre is to assist users by satisfying their needs and requirements. The key to effective library collections management is to implement simple structural organizations thus be able to present those organizations in a way that library users find more useful and easy to access

2. Collection development policies / Procedures at CSIR

All scientific and technical KRCs of CSIR have a common objective to provide its users the information they want in right time. Since collection is heart of any library or information center, its strength is measured with quality of collection and services it offers to its patrons. A good collection can be developed with the help of established document acquisition polices. CSIR had compiled document acquisition policies for all its constituent KRC's to facilitate and simplify the process of collection development. Following are few unique polices adopted at ICAST as per CSIR recommendation apart from routine acquisition polices.

- CSIR KRC's are special libraries and its collection should be confined to objectives of the organization with thrust on the newly emerging area.
- Documents with ephemeral value and those whose revised editions to be purchased from contingent expenditure budget and maintained separate register to facilitate weeding out.
- Acquisition of micro-documents though they are not ephemeral documents should be purchased under contingent budget and archived for futures use.
- 2 percent of project contingent budget should be used for expensive and project specific documents.
- Acquisition Vs Access policy refers to the economical mode of making document available.
- Venders are evaluated and venders list prepared to facilitate purchase of different kinds of documents.
- In case of short term /no discount titles or titles procured from abroad against specific orders, handling and postal charges will be paid.
- First copy of particular title will be purchased from library budget, for second copy requester has to prove the necessity of a title for a project and amount will be paid from that project only.
- A copy of a Papers, Patents, and Books etc., published by institution members should be deposited at institutional repository.

3. ICAST collection size

The Information Centre of NAL (ICAST), is an ISO-9001: 2008 Certified Centre along with its parent organization NAL. ICAST with its state-of - the-art expertise, infrastructure and services caters to the information requirements of the Indian aero-space community along with its aerospace collection of books, journals and specifically technical re-ports from world's leading organizations. The centre offers online, Web and CD-ROM based literature search services including access to > 4000 e-journals, news clipping services, AIAA Meeting Papers, NAL Institutional Repository, Online Public Access Catalogue, Union Catalogue of Serials held by CSIR/ Aerospace Libraries and many more. The centre is equipped with necessary infrastructure and trained Manpower. The sub library at NWTC campus houses collections pertaining to ATF, C-CADD, C-CMMACS CTFD, E A D, NTAF and Propulsion divisions.

Over the years ICAST has systematically built up its document collection in the areas of Aeronautics, Aerospace and related disciplines in print and electronic medium. ICAST has rich collection as of now 87,000 Books, 360 Current Journals, 42,000 Bound Volumes, 367 CD-ROMS, 2,50,00 Technical Reports, 11,050 Conference Proceedings, 9,000 Standards, 500 Patents, 290 Audio / Video Cassettes, 83 Motion Films, 4000 e-journals and 3000 e-books

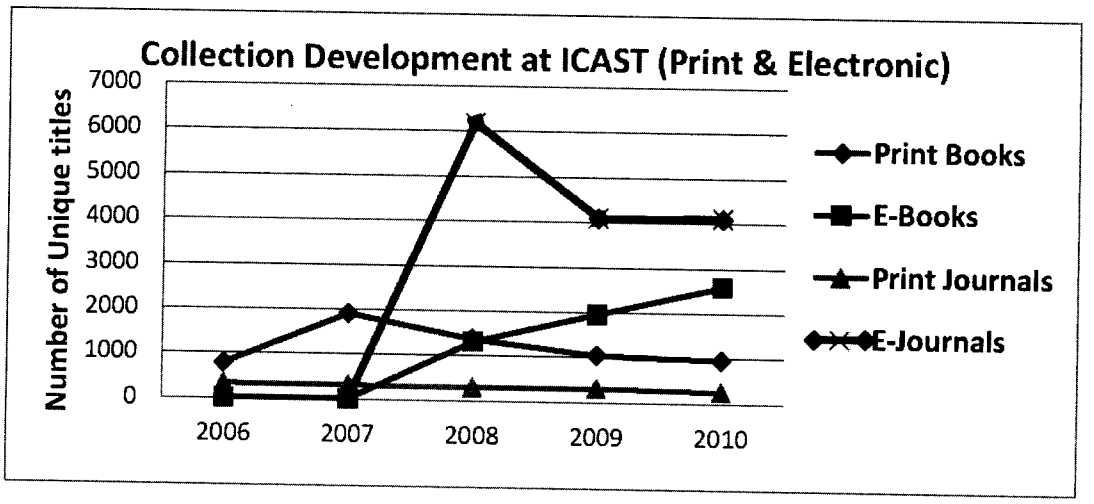


Chart 1: ICAST collection development

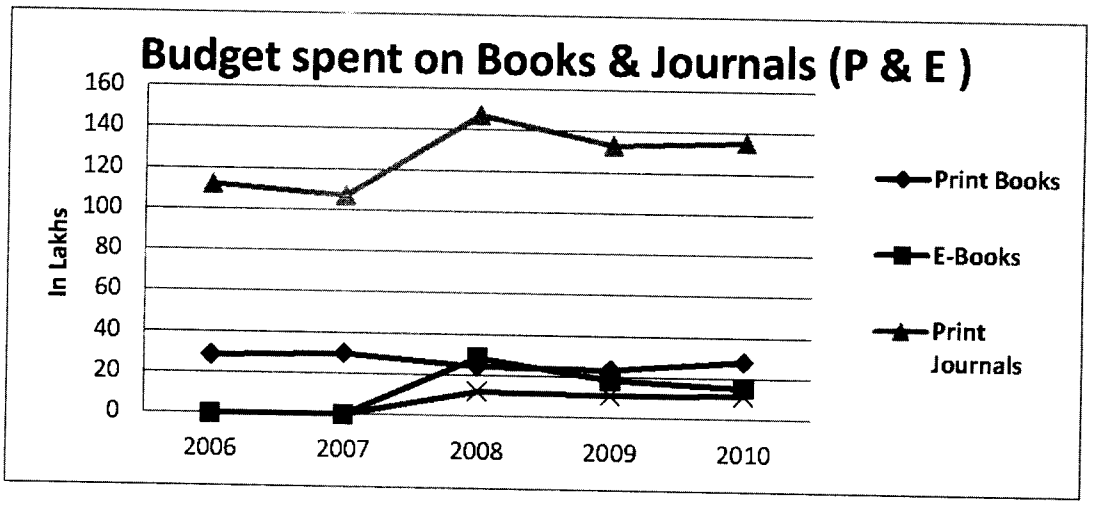


Chart 2: Budget Spent

The diagram 1 & 2 reveals that the collection develoment of NAL- ICAST is slowly shifting towards electronic versions from print version at institutional level and through the consortia . In the year 2006 and 2007 purchase of print resources existed. It is interesting to note that, 2008 onwords there was a massive demand for e-resources and the request for print resources have plunged. Also, ICAST focused more on e-documents than print versions in the fothcomming years. As a result, the collection of e-resources have been increased and the purchase of print books have declined to some extent.

4. Modes of Collection development at ICAST

Document acquisition: The process involves selecting from (publisher's catalogues) reader's requests, core collection, duplicate checking and ordering, processing then adding to library knowledge base.

Book exhibitions/fairs: these events are organized at ICAST at regular intervals with wide publicity is given across the campuses to encourage scientists and technologists to participate in the event. Selected documents are processed and added to library collection.

Document recommendation: online document demand form is provided on ICAST intranet to facilitate scientist and technologists to request for document required for their projects or research. Steps are taken to procure documents in time, once document is acquired and processed requester will be informed immediately about the document.

Document donations/gifts: donations of used documents are accepted by ICAST on a non-provisional basis. Ut most care is taken before accepting the documents by satisfying the following criteria.

- Currency of the information in the document
- Condition of the document, e.g., tight binding, no pen marks or highlighting, no visible mold or other damage to the book
- Whether or not the library already owns a copy of the document
- Whether or not the document is in purview of NAL research area

Organization policy: Apart from the usual procurement, NAL has policy for the project work done by students, scientists, fellows etc., at NAL in their fulfillment of course work should submit one copy of their reports, thesis, dissertation etc., to ICAST. These documents are processed and added to collection.

Consortia: NAL is an active member of CSIR-DST Consortia (NKRC) and acting as regional center in streamlining its activities. Large numbers of e-journals, patents, bibliographic databases, etc., are provided to access in ICAST collection. This has proved highly cost effective in adding relevant online collection to existing knowledge base.

Open access resources: emergence of open access publishing has enabled S & T libraries to access large amount of scholarly literature. ICAST has made best use of OA and linked all resource like open source E-journals, Institutional repositories, Subject portals, patent sites related to Aerospace and allied areas.

5. Conclusion

Libraries today face a challenging task of meeting unlimited information demands of their users with limited financial resources. The demands of user are justified because of information explosion in every subject area. It is the balancing act of selective in-house collection development and use of information technology which can quench the thirst of research community. A successful step towards this has been taken at CSIR-NAL, Information Centre for Aerospace Science and Technology, Bangalore which has been always in pursuit of adoption to the latest tools and technologies.

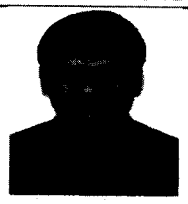
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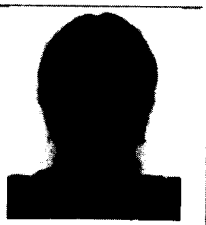
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Conventional Library Versus Digital Library: A Comparative Study

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Abstract

The new, emerging and innovative technological tools, techniques and strategies are significantly influencing on every aspect of library and information centers activities. More particularly the digital revolution has altered the way society's functions at the global, local and personal level. In this revolution, we have seen certain changes in information field; especially in relation to collection, storing processing and transmitting of information. The authors of this paper made an attempt to study and compare the cost benefit analysis of conventional library with digital library.

Keywords: Conventional library, Human resources, Reasonable cost, Digital library, Information technology

1. Introduction

Over the years, institutions have established library and information centers where books are kept for people to read, a place where information are sought after. The frequency of people going to a library is indeed significant and considered that libraries are intellectual's workshop. It is true that digital age has marked a great leap in today's' situation but, the conventional truth of physical books still lies in the minds of the known. Digital libraries are as a manifestation of changes in the information media. The adoption of digital technology in libraries is a part of historical process. The library and information centers are pioneering to adopt and explore new technologies for day to day activities. From this point of time the present day users are well experienced that they are access all types of resources and resources around the clock with click away due to development of digital and virtual libraries. But every library activity consumes lot of cost, work and time as equal to, less as or more than conventional library. If the cost effective and cost benefits are equated then the organizations and institutions are ready to spend on new technological, tools and services. Hence this study was proposed, in this paper an attempt was made to compare the cost benefit analysis of conventional library with digital library.

2. Objectives of the Study

- To study the comparative benefits of traditional and digital library through cost effective and const benefit analysis
- To compare the benefits of both traditional and digital libraries.
- To suggest the ways and means to build digital libraries for the benefits of the user community.

3. Hypotheses

The librarians were asked to consider two hypothetical types of libraries:

1. A "conventional" library comprised completely of paper books with no electronic or digital media.
2. A "digital" library comprised completely of electronic books with no paper media.

4. Methodology

To gather current thinking and experience regarding the potential benefits and costs associated with the paper and the digital library, a study group of librarians was convened. The group was comprised of eleven ARL librarians who have experience with the selection, acquisition, organization, circulation, maintenance, storing, and deselecting of both paper and electronic materials. There were ten academic librarians and one public librarian who represented different types of library services including two access services librarians (one public and one academic librarian), two collection development librarians, two reference librarians, two technical services librarians, one acquisitions librarian, one catalog librarian, and one electronic resources librarian.

This study was based on several assumptions developed during discussions with practicing librarians during a three-year period and on librarians' responses and reactions to two pre-tests conducted prior to the distribution of the formal cost allocation spreadsheet to the study group. The first pre-test conducted with catalog, collection development, acquisition, and reference librarians provided sufficient feedback to warrant a major revision of the cost allocation interactive spreadsheet. The pre-test of the revised cost allocation instrument demonstrated that the interactive spreadsheet accurately portrayed the functions associated with providing print materials and electronic materials, but also indicated the need for discussion before and after the completion of the cost allocations.

Table 1

Comparison of Cost Benefit Analysis of Conventional Library with Digital Library

SN	Factor	Conventional Library	Cost involved	Benefit Consumption of		Digital Library	Cost involved	Benefit Consumption of	
				Time	Work			Time	Work
1	Entry	Physical Entry noted by the beneficiary itself in entry register	No (1)	Yes (0)	Yes (0)	The login time of beneficiary noted by scanner with the help of bar code ID	Yes (0)	No (1)	No (1)
2	Enquiry	Sometimes Vague and sometime specific	No (1)	Yes (0)	Yes (0)	Always specific and rarely vague.	Yes (0)	No (1)	No (1)
3	Searching	Searching in catalogue and searching on the shelf	NO (1)	Yes (0)	Yes (0)	Searching through on line public access catalogue by the	Yes (0)	No (1)	No (1)

						beneficiary itself or with the assistance of librarian.			
4	Availability accessibility of book	Not ensured	No (1)	Yes (0)	Yes (0)	Always ensured	Yes (0)	No (1)	No (1)
5	Training to Librarian	Training to librarian to manual work	No (1)	Yes (0)	Yes (0)	Training to librarian to gather Computer knowledge	Yes (0)	No (1)	No (1)
6	Communicati on (subscription & order)	Mostly by Personal contact /mail and rarely by telephone/e-mail	Yes (0)	Yes (0)	Yes (0)	Mostly by e-mail /telephone and rarely by Mail/personal contact	Yes (0)	No (1)	No (1)
7	Journal	Journal in Hard copy	Yes (0)	Yes (0)	Yes (0)	On –line Journal	Yes (0)	No (1)	No (1)
8	Consumption of Electricity	Electricity is not essential	N (1)	N (1)	N (1)	24 hrs Electricity is needed.	Y (0)	No (1)	No (1)

5. Analysis and Discussion

Table 1 shows the comparison of cost benefit analysis of conventional library with digital library. Thirteen factors from entry to exit of users have been compared on the basis of cost and benefit to be met or meet by the conventional library with digital library. The comparison may prove the following equations.

Conventional Library = Human Resources + information + Reasonable Cost

Digital Library = Technology + Information + High Cost

Table 2: Positive score of conventional and Digital library

Score	Conventional Library			Digital Library		
	Cost	Time	Work	Cost	Time	Work
	9	1	1	0	13	13

6. Major Findings of the Study

It is inferred from the Table 2 that the positive score of cost of conventional library is nine times better than the digital library. But, the time and work consumed in digital library is thirteen times better than conventional digital library. It indicates the digital library is too conducive for the institution and users. The findings of this study indicate an

agreement among the participating librarians that labor, aggregate space requirements, and material resources are estimated to be less in an all-digital library than in a conventional library. Although the results suggest that aggregate equipment use in a digital library will be less than for a paper library, the greater range between maximum and minimum suggests an uncertainty among participants in equipment requirements in an all-digital library. The participants also expressed uncertainty and concern about the possibility of higher salaries needed to hire and retain a more knowledgeable and skilled level of staff to effectively manage an all-digital library. There is also an expressed concern for managing the costs of maintaining both the digital and paper library simultaneously, which seems to be the current scenario. Participants believed that this will not only manifest in the selection, acquisition, cataloging, maintenance, circulation, storage and warehousing, and deselect ion of materials, but also in the demand for more and different reference services, bibliographic instruction, and technology support.

6.1 Suggestions

- New user should be educated and trained to gather computer knowledge to utilize the digital library in better way
- The library and librarian should be more specialized, highly technical and better equipped to provide high tech services.
- The user should become computer literate and develop the skills of exploiting computerized information services to the maximum.
- The certificate course in library and information service should be offered to the students.
- Consolation Charge should be charged for all information services except clientele in order to meet the high cost of digital library.
- LAN/WAN internet connection will be improved to share resources among libraries because DELNET, SIRNET, INFLIBNET depend on net work and internet connections.
- More Workshop/Seminars/Short-term Training courses should be arranged for librarian and clientele because ICT is updated day by day.

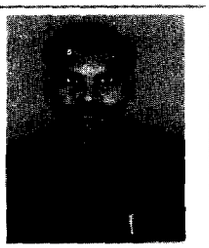
7. Conclusion

The cost, physical work and consumption of time in digital library is too conducive for the institution and users when compared to the conventional library even though it bears very sky-scraping cost when compared to the conventional library. Besides, the comparison revealed that the digital library is the impact of technology and it provides information rapidly with high cost. In this situation, the academician welcomes digital library due to the availability of data at faster rate and rationally reduce the physical work. Hence, the future libraries should balance between library with human face and library with virtual electronic resources because the digital library ca not be visualized without the human eyes and hands. These uncertainties and the lack of available resource allocation data warrant the continued study of the resources needed for the transition from a paper to a digital library. This study provides a list of resource allocations by library function that

can be used to monitor the resource allocations required to offer content in the paper library and the all-digital library. Since this study is exploratory and does not include a representative, random sample of librarians, its results cannot be generalized to all libraries. In an effort to provide information for library decision-making, researchers should continue to collect and compare data to the results generated by this study.

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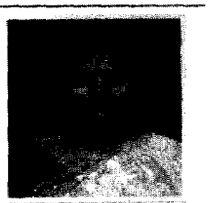
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Designing of Bio-Informatics Web Portal using Bluevoda Software

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Abstract

The main objective of this study was to design a bio-informatics information based web portal that would help both teachers and students of Bio-informatics discipline. This web portal has been created using the BlueVoda web designing software. The required information for this study has been collected from the Internet. The URL's of the created web pages are connected and links are provided for all topics. The topics are selected from the bio- informatics syllabus of the Kuvempu University.

Keywords: Web portal, BlueVoda, Kuvempu university, Subject directories, Databases, Research laboratories

1. Introduction

Web Portals are Internet-services that support systematic resource discovery. They provide links to resources, objects, sites, or services, predominantly accessible via the Internet. The service is based on resource description. Browsing access to the resource via a subject structure is an important feature of any web portal. A web portal is a web site that provides searchable and browsable access to online resource focused around a specific subject.

A subject portal, in the context of network based resources access, can be some facility that allows easier access to network based resources in a defined subject area. The subject portals are also known by different names as; Information Gateways, Subject Gateways, Subject Based Gateways, Subject Based Information Gateways (SBIGs), Subject Trees, Virtual Libraries, Clearing Houses, and other variations thereof.[1] Portal design can create an effective website that satisfies users and meets the organization's goals and objectives.[2] "Subject Portals are Internet based services designed to help users to locate high quality information that is available on the Internet. They are typically databases of detailed metadata records which describe Internet resources and offer a hyperlink to the resources."

The main objectives of the web portals are to:

- Design individually his/her own homepage within the community portal
- Take and edit digital photos, afterwards will set up a digital photo album on the web
- Install the software on personal computer
- Record, edit and publish video and audio
- Prepare and present a multimedia presentation
- Plan and moderate a forum discussion
- Participate activity in a videoconference
- Update daily his/her personal learning diary, reflecting on new experiences, knowledge and skills.[3]

2. Objectives of the study

The main objectives of the study are:

- To provide quick and reliable access to a managed information environment in the field of Bio-informatics.
- To save the time of the users at remote locations by means of providing access to more information related to bio-informatics.
- To give extensive links to other related web resources in diverse areas of bio-informatics.
- To link well referenced sites and customizable homepages by single log in.

3. Methodology

Terms related to bio-informatics subject are selected from the syllabus of bio-informatics subject from Kuvempu University and arranged logically using DDC. Search has been conducted using Google search engine to retrieve relevant information sources related to selected topics. Web Portal was designed using BlueVoda web designing software. Relevant information source's URL's are connected and links are provided for all topics, which are selected from the syllabus.

4. Software for creating a web portal

Now days there are several open source software available for creating a web portal. To create a Web Portal one can use HTML editors like BlueVoda Web site Builders, Front Page, MS Publisher, Dream Weaver and MS Word. The present model Web Portal has been created Using BlueVoda (www.vodahost.com) web designing Software. [6]

5. Free Web Space Providers

There are number of free web space providers have greatly increased over the past few years. To register a web portal one can use Internet Service Providers like Free webs, 50Megs, Geocities, Net Colony, Brinkster, Tripod, Host Voice, Free web Space and others.

6. Content of the Web Portal

This section mainly highlights the salient features of the Bio-informatics Web Portal, which was designed by keeping in view the guidelines given by significant authors. As the Web Portal is related to Bio-informatics the main content of the Portal has been focused on different subjects of Bio-informatics only. The arrangement of subjects of the Bio-informatics portal are mainly depends upon the Dewey Decimal Classification (DDC) scheme. The Web Portal's home page covers the following information.

- About Bio-informatics Web Portal
- Journals
- Books and Study Materials
- Databases Research Laboratories

- ❖ Department of Bio-informatics
- ❖ Kuvempu University
- ❖ About Us

7. Model Web Portal of Bio-informatics

7.1 Home Page of Bio-informatics Web Portal

The Bio-informatics Web Portal main page shows the main contents of the Web Portal, which includes information about the Web Portal, Journals, Books and Study Materials, Databases, Research Laboratories, Department of Bio-informatics, and Kuvempu University.



Fig-1: Home page of Model Web Portal

7.2 Subject Directories

Subject Directory has been given in this page (Fig.2) to get more information or clarification on different subjects of Bio-informatics. Links are given for titles so that by a single mouse click users can easily get information about different concepts like Structural Biology, Molecular Biology, Recombinant DNA technology, Bio-informatics basics Biometrics, Proteomics, 3D Modeling, Networking and Web designing and others.

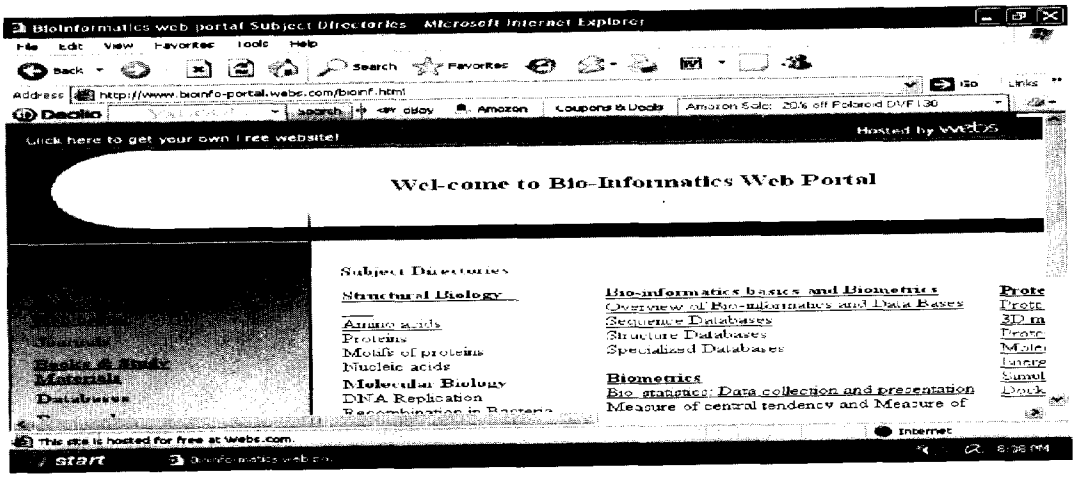


Fig-2: Subject Directories

7.3 Journals

Figure 3 shows the 'Journals' where all the journals related to different subjects of Bio-informatics discipline. When you click on the term 'journals' it will display list of Journals. After selecting a particular journal and click on that journal, user will get comprehensive information on particular journal.

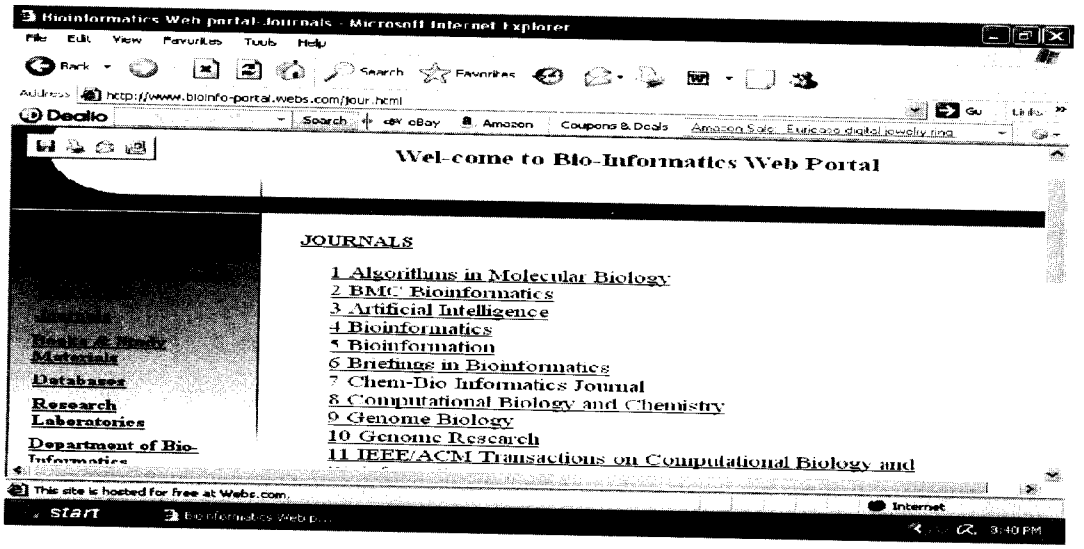


Fig.-3: Journals

7.4 Books and Study Materials

Figure 4 shows the 'Books and Study Materials' which display all the books related to different subjects of Bio-informatics discipline. When you click on the term 'Bio-informatics' in this page you will get list of books on different subjects of Bio-informatics and full text information of that particular book.

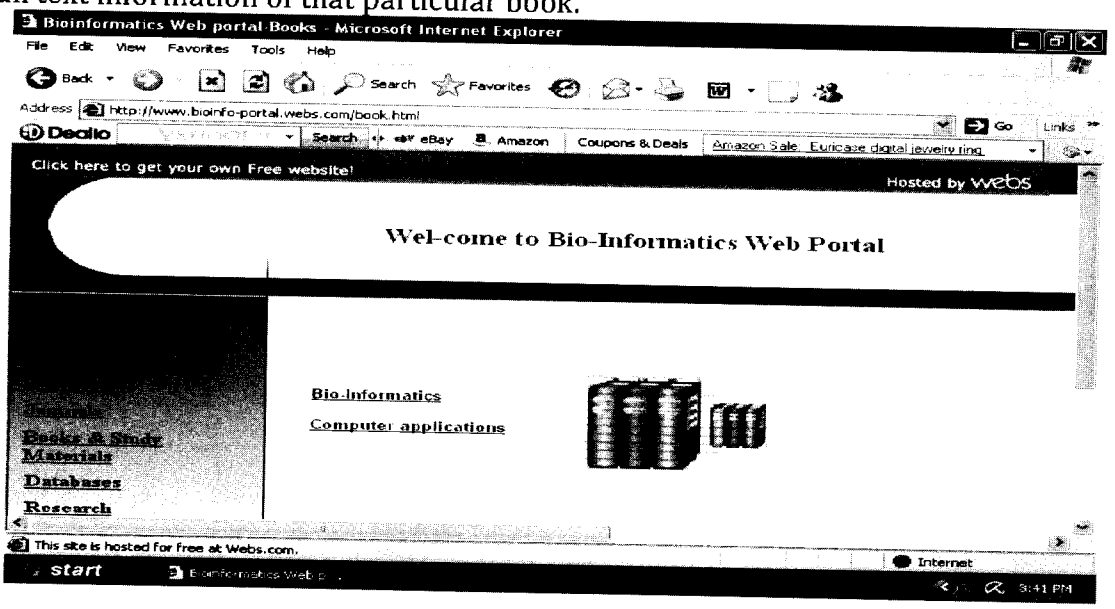


Fig-4: Books and Study Materials

7.5 Databases

A database is an integrated collection of logically-related records or files consolidated into a common pool that provides data for one or more multiple uses. Figure 5 shows the list of databases related to different subjects of Bio-informatics discipline. Users can get comprehensive information on particular database in this webpage.

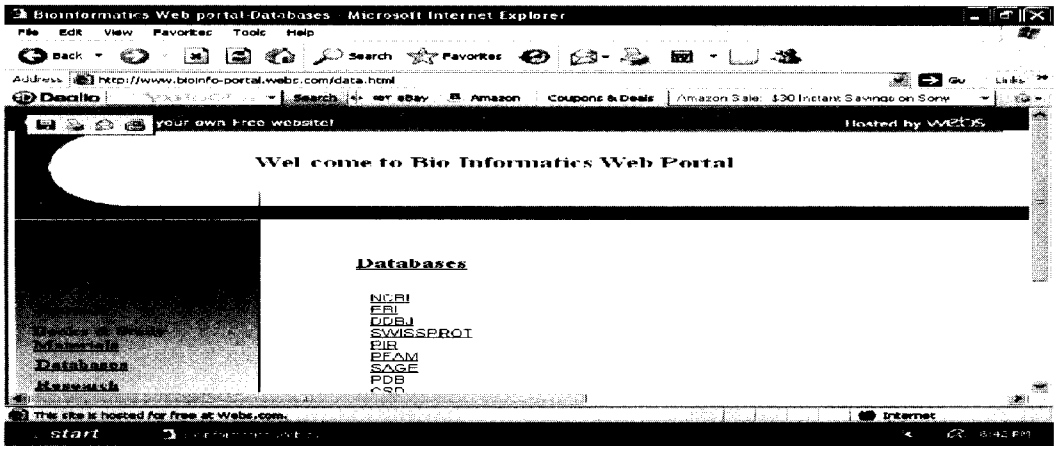


Fig.-5: Databases

7.6 Research Laboratories

Figure 6 shows the list of 'Research Laboratories' related to Bio-informatics discipline, located at different countries. This web page provides detailed information about particular laboratory.

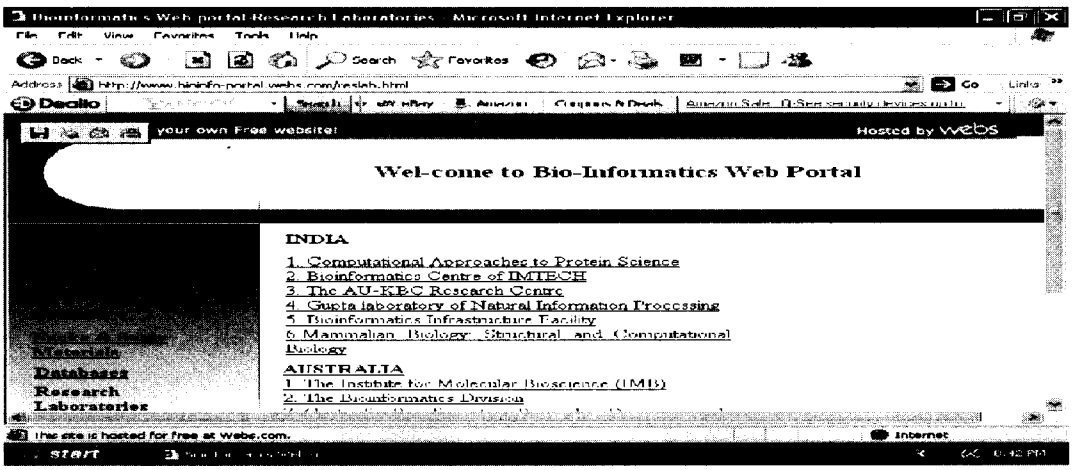


Fig. 6: Research Laboratories

7.7 Kuvempu University

This page (Fig.8) demonstrates the salient features and also an overview of Kuvempu University. It highlights the detailed information of Kuvempu University such as its location, number of departments and buildings, number of faculty members and students, facilities like the library, hostels, guesthouse etc.

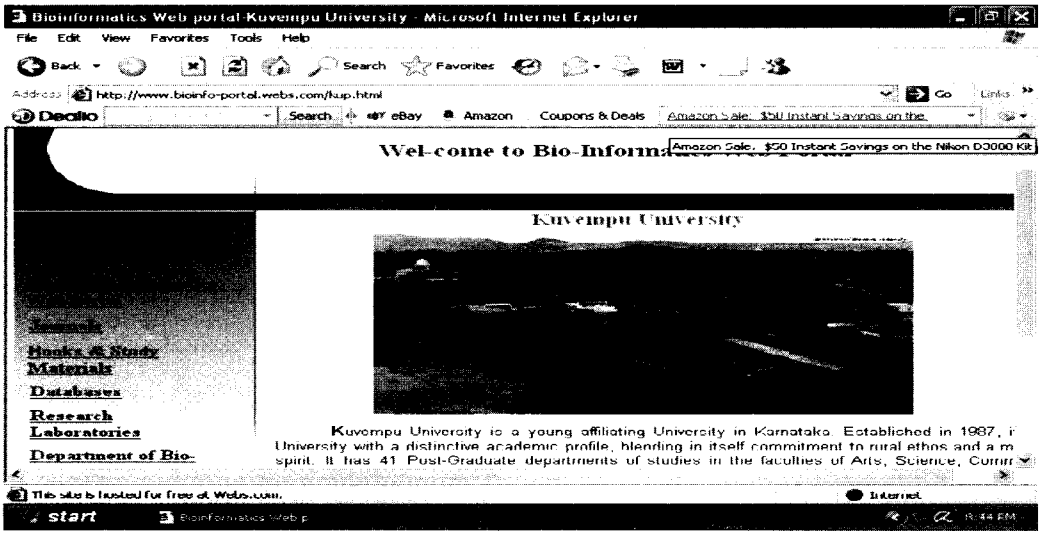


Fig-8: Kuvempu University

8. Hosting of Bio-informatics Web portal

When it comes to hosting, there's a wide range of options available in the form of hosting companies and ISPs. They provide space on their servers for any website. To choose one, one need to look at various factors, including the price one has to pay, the space provided, and services the provider offers, including the kind of access provided, server-side programming support, and e-mail services. The amount of space depends on the content and how exhaustive or interactive the site would to be. Before launching a website there must be some space on Internet. One should register this space using different free web space providers. Web hosting service providers help us in this regard. Website can be hosted either on price or free of cost. In case of free of cost web hosting, service provides do not allow using one's own domain name on their own sub domain. There are few service providers who host the domain and with advertisements. The space provided by such providers varies from one to another. In price of web hosting, the service provider takes care of hosting a site, provides technical support and takes back – up of files for a fee, which may be paid monthly or yearly. The cost depends on the type of website and amount of space required.

The selection of service provider should be made carefully. The opinion of the experts must be taken in this regard. Our requirements, need of users, situation of our library, and policy of management must be discussed with the experts. Internet Service Provider (ISP) also provides space to host a small site as part of its subscription fee. However, the major drawback will be the URL, which will be the sub domain of the ISP. [7] Since this Web Portal has been designed in the Bio-informatics discipline, it was planned to host this web site with the help of Internet Service Providers.

9. Conclusion

From the above study we conclude that role of information technology plays a major role in all the spheres of academic's activity. It is essential and an urgent need of all

academic institutions must maintain their own website for effective services to the targeted group. Since, in the present information society the web portal has become an important medium for publishing and disseminating information. Web document should be user friendly, much transparent, and interactive. Library and Information centers should also develop their own web page for giving links to all web sites created by different departments so that in single window all need based information can be provided to the users community.

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Digital Information Literacy among the Post Graduate Students of University of Mysore: A Study

Chandrashekara M **Ramasesh CP** **Raju C**

Abstract

The paper highlights the ways and means the students search the information from different digital information sources. Further, the study finds the digital information resources used by the post graduate students to get information relating to their own areas. The paper focuses on whether the students are computer literate, what are the resources used to get familiar with the subject(s). Finally, it concludes by giving some fruitful suggestions to improve the digital information literacy programmes for post graduate students in the university level.

Keywords: Information literacy; Digital information literacy; Post graduate students; University of Mysore

1. Introduction

In the recent years due to the development of Information and Communication Technology (ICT) i.e. computers and communication the ability to access, interpret and create digital information has increased its level of importance in the continuum of literacy. The computer and Internet has become integral to many forms of information access, communication, and knowledge. There are four core competencies of digital information literacy, invariant to technology changes. They are knowledge assembly, Internet searching, hyper textual navigation, and content evaluation. Now irrespective of category all the information seekers have to imbibe these core competencies with them.

The present study has been conducted to identify the level of information literacy of the post graduate students of various departments of the University of Mysore with a view to provide recommendations for planning and implementing the appropriate digital information literacy programmes. The study reveals that majority of the research scholars are able to identify, locate, evaluate and use the required information. An important point noted down is that, the students are not much aware about electronic information resources and their use. The study also reveals that information literacy programme is inevitable for the post graduate students in the University to make them more information literate. The library and information professional can do a lot to attain this goal.

2. Digital Information Literacy

Information Literacy is defined as the lifelong ability to recognize the need for, to locate, evaluate and effectively use information (American Library Association; 2006).The digital information literacy is one aspect of Information Literacy and very relevant for the 21st Century. The term 'digital information literacy' has been used by a number of authors. It refers to an ability to read and understand hyper textual and multimedia texts (Lanham;

1995), Glister defines digital information literacy as, "a set of skills to access the Internet; find, manage and edit digital information; join in communications; and otherwise engage with an online information and communication network.

3. Objectives of the study

- To find out the computers and Internet literacy of the students
- To know the purpose of use of digital information
- To know the frequency of use of digital information
- To know the familiarity with the digital information sources
- To evaluate the features of digital information

4. Methodology

Keeping in view the above objectives in mind, a structured questionnaire was administered to collect the details about the attitude of respondents towards the digital information literacy by the students of Post Graduate Campus of the University of Mysore, Manasagangotri. Totally 200 questionnaires were distributed among post graduate students, out of which 150 filled in questionnaires were received back. This constitutes 75% of the total response and same was used for analysis purpose.

5. Results and Discussions

Use of computers: The investigator asked the question among the respondents about the use of computers. It is found that all of them are using the computers. This shows that all the post graduate students are computer literate.

5.1 Use of Internet: Internet facility is the backbone to access digital information. So the investigator asked the question about the use of Internet. It is found from the study that all the respondents are using Internet.

Table 1: Frequency of use of Internet

Sl. No	Frequency	No of respondents	Percentage
1	Daily	80	53.34%
2	Once in two days	32	21.33%
3	Thrice a week	14	9.33%
4	Once in a week	19	12.67%
5	Occasionally	05	3.33%
Total		**150**	**100%**

The table 1 clearly shows that 80 (53.34%) respondents are using Internet daily, and 32 (21.33%) respondents using Internet once in two days; 19 (12.67%) respondents using Internet once in a week, 14 (9.33%) of the respondents using Internet thrice a week and 5 (3.33%) respondents are using it occasionally.

Table 2: Formal training obtained in the use of computers and Internet

Formal training	No of respondents	%
Obtained	131	87.34%
Not obtained	19	12.67%
Total	**150**	**100%**

The table 2 shows that majority (131; 87.34%) of the respondents are of the opinion that they got training in the use of computers and Internet. The remaining (19; 12.66%) respondents did not get training in use of computers and Internet.

5.2 Use of Digital Information Sources

Table 3: Use of different types of digital information sources

SL	Types of information sources	No. of respondents -150	%
1.	E-Newspapers	142	94.66%
2.	General e-articles	131	87.33%
3.	E-journals	115	76.66%
4.	E-databases	92	61.33%
5.	Websites	51	34.00%
6.	News groups/ Mailing lists	36	24.00%
7.	E-books	14	9.33%
8.	Blogs	02	1.33%

Table - 3 reveals that the demand for e-newspapers is greatest, i.e. 94.66 percent. The next place is for general articles available on the Internet i.e. 87.33 percent. The e-journals, e-databases, websites, and newsgroups/mailing lists placed next order. They accounting 76.66 percent, 61.33 percent, 34 percent and 24 percent respectively. The students also the uses of other type of resources such as e-books, blogs were 9.33 percent and 1.33 percent respectively.

Further the investigators were asked the questions with the students as "For what purpose do you use digital information?"

Table 4: Purpose of use of digital information sources

SL	Purpose	No. of Respondents N=150	%
1	To update subject knowledge	112	74.66%
2	To prepare notes	44	29.33%
3	To write assignments	44	29.33%
5	To prepare seminar papers	24	16%
6	To carry out project/dissertation work	18	12%
7	To prepare for competitive exams	15	10%

The above table - 4 shows that, among the 150 respondents 112 (74.67%) respondents stated that they need digital resources to keep their knowledge up-to-date.

Followed by this, 44 (29.33%) each respondents stated that they use digital information to prepare notes and write assignments. 24(16%) respondents use digital information to prepare seminar papers, 18(12%) to carryout project/dissertation work and 15(10%) to prepare for competitive examinations.

Table 5: Familiarity with the use of digital information sources

Response	No of respondents	%
Familiar	86	57.33%
Not familiar	64	42.67%
Total	**150**	**100%**

The table 5 shows that among the 150 respondents, 86(57.33%) of them are familiar with the use of digital information sources and the remaining 64(42.67%) of them are not familiar. So they need more orientation on digital information sources.

Table 6: Use of different search engines to get information through websites

SL	Search engine	No. of respondents -150	%
1.	Google	108	72.00%
2.	Yahoo	20	13.33%
3.	MSN	16	10.67%
4.	AltaVista	06	4.00%
5.	Bing	03	2.00%

The table 6 shows that among 150 respondents, 108 (72%) respondents use Google search engine, 20 (13.33%) use Yahoo search engine, 16(10.66%) use MSN, 6 (4%) of them use AltaVista, and 3 (2%) respondents use Bing search engine.

Users' preference on use of combination of words to find information on the topic "The impact of television on the academic result of college students" in a database was asked by the investigators. The responses received are presented in the table-6.

Table 7: Users opinion on use of combination of words to find information

SL	Databases	No of Responds	5
1	Television, Academic result, College students	48	32.00%
2	Impact, Television, Academic result, College students	43	28.66%
3	Television, Academic result	32	21.34%
4	Impact, Television, Academic result	27	18.00%
Total		**150**	**100%**

The above table shows that among 150 respondents 48 (32%) respondents replied that they use 'television, academic result, college students' combination of words to search for the above said title in the Psychology database. Another set of 43 (28.66%) of respondents replied that they use 'impact, television, academic result, college students' combination of words for search information, where as 32 (21.33%) users use 'television', and 'academic results' as combination of words, following 27(18%) users use 'impact,

Television, academic result' to identify the 'impact of television on the academic results of college students'.

Table 8: Users preferred options to find the digital Information on current developments

Sl. No.	Options	Ranking					
		1	2	3	4	5	6
1.	Reading news papers	66 (44%)	31 (20.66%)	32 (21.33%)	10 (6.66%)	06 (4%)	05 (3.33%)
2.	Internet searching	26 (17.33%)	20 13.33%)	20 (13.33%)	25 (16.66%)	23 (15.33%)	36 (24%)
3.	Browsing electronic news papers	19 (12.66%)	18 (12%)	25 (16.66%)	31 (20.66)	26 (17.33)	31 (20.66)
4.	Watching TV	18 (12%)	32 (31.99%)	27 (11.33%)	17 (11.33%)	27 (18%)	29 (20.66%)
5.	Reading journals	17 (11.33%)	28 (18.66%)	23 (15.33%)	43 (28.66%)	23 (15.33%)	16 (10.66%)
6.	Listening to radio	4 (2.66%)	21 (14%)	24 (16%)	24 (16%)	45 (30%)	32 (21.33%)

The table 8 shows that users preferred options to get digital information on current developments in a field. 66 (44%) respondents are giving first preference to get the digital information on current topics is by reading newspapers and it placed first. The other options are internet searching, browsing e-electronic newspapers, watching television, reading journals, and listening to radio.

To find out the rating of the features of digital information, the investigators posed a question with the students as "How would you rate digital information on each of following features as far your study?"

Table 9: Rating of the features of digital information sources

Feature	Poor	Fair	Good	Very good	Excellent	Total
Accuracy	39 (26 %)	18 (12%)	41 (27.33 %)	27 (18%)	25 (16.67%)	150 100%
Authority	41 (27.33%)	38 (25.33 %)	25 (16.67%)	22 (14.67%)	24 (16%)	150 100%
Accessibility	21 (14%)	33 (22%)	63 (42%)	13 (8.67%)	20 (13.33%)	150 100%
Coverage	99 (66%)	19 (12.67 %)	19 (12.67 %)	13 (8.66%)	0	150 100%
Usefulness	97 (64.67%)	22 (14.66%)	31 (20.67 %)	0	0	150 100%7
Currency	93 (62%)	39 (26%)	18 (12%)	0	0	150 100%

Consistency	101 (67.33%)	30 (20%)	19 (12.67 %)	0	0	150 100%
Easy to use	107 (71.34%)	32 (21.33%)	11 (7.33%)	0	0	150 100%
Timeliness	119 (79.33%)	31 (20.67%)	0	0	0	150 100%

The above table shows that out of the many features given in the table for only few features such as accessibility, accuracy, authority and coverage the respondents rated as excellent and very good. Remaining all other features was rated as good, fair and poor. It is also found from the table that majority of the respondents poorly rated the different features of digital information.

Table 10: User opinion about the criteria used to evaluate the quality of the Internet site

SL	Criteria	No of Respondents -150	%
1.	Known author	45	30.00%
2.	Date of publication	38	25.33%
3.	Publisher	34	22.67%
4.	Content	33	22.00%
5.	Authorized site	12	8.00%
6.	Speed of accessibility	11	7.33%
7.	Up-to- datedness	10	6.67%

The table-10 shows that among 150 respondents, 45(30%) respondents have chosen that if author is known then the quality of the Internet site is good. Further, 38(25.33%) respondents opine that the date of publication provided in the site, 34(22.68%) name of the publisher, 33(22%) base on content, 12(8%) based on authoritative site for example if a website is government or institution are the criteria to evaluate the quality of a Internet site. It is also found that the other criteria such as speed of accessibility (11; 7.33%) and up-to-datedness are used to evaluate the quality of the Internet site.

6. Conclusion

Digital information literacy is need of an hour topic. Due to the technological advancement, most of the information sources today are available in the form of digital. So all categories of people must know how to access, store, use and dissemination of information. They should be digitally literate. The present study is an attempt in this regards. There should be lot of studies should be conducted in this level to provide the effective services to the users community in the libraries. These types of studies also help much in any organization while taking important decisions such as procuring the digital information resources to their library or organization.

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Digital Libraries versus Traditional Libraries: Changing Perspectives

Gurav Dhananjay S

Abstract

The emerging Information Communication Technologies (ICTs) greatly influencing on the traditional libraries in collection development, management and providing need based services to the user community. Due to advancement of technological revolution many libraries are moving traditional stand alone libraries to electronic and digital libraries. Digital libraries are organized collections of digital information and resources. Digital information can be accessed rapidly around the World and copies for preservation is easy, without error, stored, compactly and searched very quickly. Digital resources help in various activities of library and enhance its effectiveness and efficiency. In this paper the author highlights the importance and the impact of digital libraries over traditional libraries.

Keywords: Digital library, ICT, Traditional libraries

1. Introduction

With the digital revolution, data and information can now be transmitted to all corners of the World, and that is significant for almost all humanity and it is also significant for libraries. So it has made the transfer of information from one place to another place easily and can be accessed from any corner of the globe with the help of computer networks. Before the development of new ICT technologies traditional libraries giving information to their users in traditional system but now the situation is changed and today's libraries using new ICT technologies for providing better and instant services to their users. So it is the need of the time.

Nature of information is changing every day as well as their use. The method to store of information data using papers is old now. Preservation of data in digitized format is a preferred choice today. People are interested in this method not because it is the current trend and heard more fashionable, but it offers several advantages, over the traditional one. It is easy to preserve a paper full of data in digital format. It can be stored for an infinite time; no further care to the digital object is required as it is required in case of books, papers, etc. Infinite number of copies can be produced from a single digital object by just a single click of a mouse on the computer screen. So, naturally the importance of digital library is becoming higher than the earlier times.

2. Need and importance of the digital library

A digital library helps to fulfill the basic five laws of library Science as quoted by Dr. S.R. Rangnathan. In the electronic and digital environment these five laws may be restructured as web resources are for use, every user his/her web resource, every web resource its user, save the time of the users, web is a growing organism.

Dr. A.P.J. Abdul Kalam (2007) described the role of Digital library is where the past meets the present and creates a future. A digital library provides equitable access to knowledge to all the people, irrespective of place, caste, creed, color or economic status with this there are some following reasons for digital library:

- Easy to understand – The visual or geographical information system of digital libraries is more popular as compared to text based information system.
- Shifting of the environment – The new generation readers becomes only happy when they will be able to read from the computer screen.
- Multiple functions – By using hypertext it is possible to structure and organize the same digital information in a variety of ways.
- Information explosion – It will be able to handle and manage large amount of digital content by simply providing link without actually procuring the document.
- Information retrieval – By using digital library one will be able to retrieve information.
- Distance learning
- Online publication – Digital libraries to procure the online publication and to provide link to important sources of information.

3. Traditional Libraries

Traditional libraries are physical containers of information are capable for direct access to their users. On the other hand digital libraries are containing data in the digital formats. There are some basic functions of traditional libraries which are following:

- Collection of information resources – It includes techniques for evaluation of information resources directed towards target users and cost effective storage and preservation of such resources.
- Organization and representation of information – Classification and cataloguing of information resources which is relevant to the potential users.
- Access and retrieval of information – Access considerations include design of physical space and organization of materials within such space to respond effectively to user needs and expectations. Information retrieval has been addressed in the design of systems specific to that task.
- Analysis, synthesis, dissemination and circulation of information and value added services like reference service, etc.

4. Impact of Digital Libraries on Traditional Libraries

With development of the modern information technology the traditional library has not been fit on the requirement of the information time and knowledge economic development. So it faces the basic changes and innovation. Differing from the traditional libraries, a digital library has its own characteristics and functions that are the direction of the traditional libraries. According to the needs of the users the traditional libraries are changed their ways of providing services.

Traditionally, libraries operated as a way of sharing books and focused on print-on-paper can be seen as large repositories ready to deliver information it demanded. The new technologies are boosting the emergence of a variety of resources, electronically locally or remotely stored and delivered anywhere in formats that transcend the limitations of print-on-paper. The library becomes a gateway for its users. This transition forces a re-examination of all facets of library methods and services. The core activity in the changing model for the scholarly process is the digitalization – coding of information for computers to process. It is clear that digital library technology is becoming an essential enabler of library services. With the continuous technological progress and the growing popularity of digital libraries, the term itself might be heard more rarely.

The use of information technologies will be inevitable for the libraries of the future. It is certain that every library will become a digital library one day. Still, taking into consideration the great volume of material and information existing and being further created in its traditional – print – form, we must agree that print and digital material will have to co-exist for a very long time.

The dynamic information environment brings major opportunities as well as difficulties. The biggest problem of the traditional libraries at the moment is the cost crisis now affecting their current services. The fraction of the world's publications that traditional libraries can afford is decreasing. It is getting harder and harder for libraries to afford their previous level of purchases due to increases in journal prices, in the number of publications and due to currency shifts. Very many universities are reviewing their subscriptions and canceling journals. In addition to problems buying material, libraries have to face such difficulties as increasing costs for buildings and storage. Through a constantly growing number of books there is not one library not complaining about lacking place for book storage. In order to increase this space a library would have to face further high expenses [Lesk]. Another problem of the conventional libraries is the lack of place for readers in the libraries, especially in those libraries, where the number of students rises. This problem has always been there leading to serious inconveniences.

There is also a steadily growing problem of acid paper books, that is books published between 1850 and 1959, which are deteriorating and need treatment right away [Lesk]. This treatment is very costly. Many library users simply lack the time needed to make the way to the library.

5. Conclusion

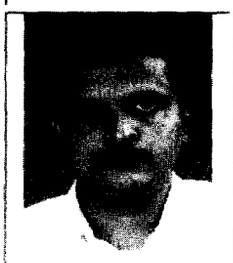
In this age of digital revolution traditional libraries are offering good environment and services to the users. Digital resources are providing efficient, cost effective and instant services to the users and users are depending on digital information and also this is the need of the time. Digital library connects the information resources such as books, publications, pictures, A/V materials, databases, web and multi-media, etc. It offers services for the developments of users and it has become a kind of knowledge management system that the readers can use rich digital information resources.

The use of information technologies will be inevitable for the libraries of the future. It is certain that every library will become a digital library one day. Still, taking into consideration the great volume of material and information existing and being further created in its traditional – print – form, we must agree that print and digital material will have to co-exist for a very long time.

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Document Delivery Service at Kwench: A Case Study

Rajesh R Aldarthi **Shanthadevi D**

Abstract

Article provides an overview and analysis of document delivery service changes and details how the Kwench plan was managed and how it was modified in the light of changes in the document delivery environment. Kwench (DDS) is one of the major initiatives looking at potential new patterns and services for document delivery in India. Article discusses challenges likely to be faced by libraries and information centers. The article will be useful to those thinking about how document delivery systems and services might be managed and to anyone contemplating the establishment of a new service.

Keywords: Library services, DDL

1. Introduction

The document delivery service has undergone very significant changes over the past ten years. These changes have come about through a combination of factors, including: the increasing availability and use of journals in electronic format; the introduction of the "big deal" where publishers offer a large range (or all) of their titles in one bundle to a library or group of libraries; more material being made available through third party electronic suppliers and journal publishers' own electronic databases; the emergence of e-prints and e-print repositories; and the digitization of full runs of print journals. The impact of these initiatives is still being assessed. Paradoxically, at the same time as these initiatives were being introduced, document delivery remained one of the areas of library management touched by the improvements in technology and the uptake of international standards.

2. About Kwench

One such revolution of change is India's first corporate library solution by Kwench founded in 2008 by Sunder Nookala with the help of three batch mates from IIM Ahmedabad. Krishnan Madhabhushi, Mitesh Damania and Prashant John, all approved of Nookala's idea. Kwench signs contract licenses with various corporate companies to provide books for its employees to enhance their professional as well as personal knowledge. Kwench kicked off with two corporate clients-WNS Global and Yes Bank-in a small place in Mumbai has now grown to 150 clients. The team has provided a solution to clients across India by providing virtual library solutions and thereby minimizing the latter's cost in setting up infrastructure at their premises. Kwench eraned 2 crore funding from Indian Angel Network in March 2009 and 1 crore from SIDBI under the MSME technology fund. Kwench has expanded to Bangalore, national capital region around Delhi, Pune and Gurgaon as its delivery centres. Now it is planning to enter tier-II cities such as Ahmedabad, Nagpur, Jaipur, Jamshedpur and other upcoming cities where corporates are investing on employee enhancement.

2.1 Collections @ Kwench

Document delivery exists on a continuum between publishers or libraries and the end user. There are generally considered to be five notable categories of commercial document delivery, based on Higginbotham and Bowdoin, 1993:

a. Document clearinghouses;
b. Database producers;
c. Table of contents vendors; (TOC's)
d. Full text vendors;
e. Interlibrary Loan

With Kwench employees can access books from more than 40 categories. Kwench aims to enhance employee engagement by its four-pronged value proposition. It aims to provide extensive collection of books in the following four dimensions for overall employee development:

- Professional Development
- Personal Development
- Community Building
- Work-Life Balance

The startup has also added DVDs, mobile phones, mobile accessories and gift coupons to their repertoire. One can also gift books by clicking on their portal. This way Kwench helps the HR to enhance employee engagement by providing access to many professional books which can be borrowed online.

2.2 How does kwench delivery work?

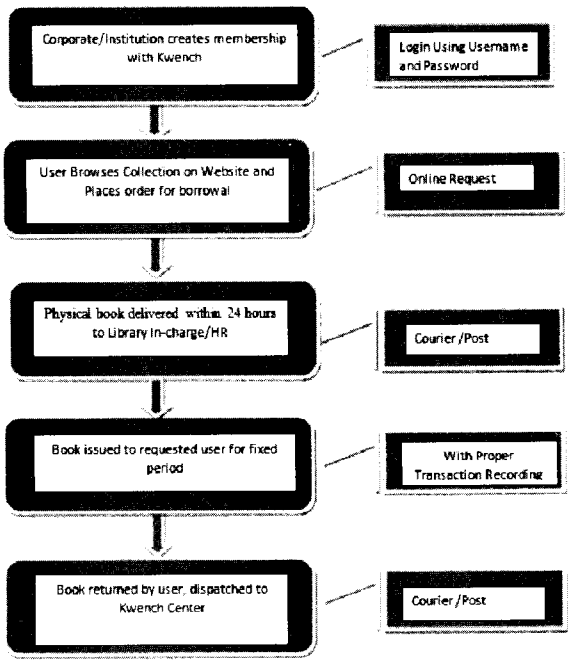


***Figure 1*: Kwench Delivery service**

Users can browse the collection of titles through our website and place an order for borrowal. While the collection is accessed online, the physical book is delivered to the user's workplace within 24 hours by courier/postal service, Arrived book is issued to requested user, after making proper transaction entry in records. When user returns book back to concerned in-charge/HR, same is dispatched back to Kwench center after examining any physical damage.

2.3 Methods of Delivery

Methods of delivery are the single most important critical success factor a business must address, since it single-handedly determines customer support and satisfaction.

- Mail and Courier

The Indian Postal Service is the slowest of delivery systems, and the cheapest, barring their overnight service. Courier services such as Parcel Service or Speed Post are fast, but the cost to the provider is passed on to the consumer. Both mail and courier services will continue to be used for normal or rush requests. The Courier service will offer tracking and receipt of documents; price of transmission is predicted to be significantly lower than other delivery service. There are online courier services for delivering e-documents, which be future area of research.

Features of Kwench Delivery

Client context

- A large player in the financial services sector.
- Kwench has one of the finest corporate libraries in India.
- Professional team managing the library and knowledge services.
- Enhance value proposition of employees through wider choice and convenience.

Kwench approach

- Developed a shared license model which will complement the existing library facility.
- Joined hands with the motivated client knowledge services team to communicate how the in-house library and Kwench service will co-exist.
- Conducted periodic campaigns to rekindle reading interests among Employees.

Impact

- Kwench today serves employees of below companies in India.

It is instructive to examine in detail the number of documents delivered by kwench for all centers; due to unavailability of data it's not possible

3. Challenges to Library and Information Center

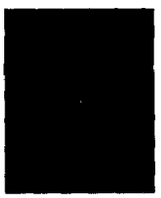
Collection development of information sources in the networked environment has been order of the day and definitely Kwench is a future for librarians to meet their active

collections and user needs. The services of Kwench are of course available in a corporate sector but how far and to what extent it is feasible in the academic and research university libraries in Indian context is still a greater challenge before us. Some of the challenges like physical availability of books, payment options, e-governance and users passion for e-books etc. have to be worked out to ensure proper utilization of services like Kwench. Acceptance of commercialized, profit oriented services is major challenge.

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Emerging Innovations and Trends in Library and Information Centers to Sustain in the Knowledge Society: A Case Study of Government College for Men, Andhra Pradesh

Jahan Ara S

Abstract

Library and information centers have gained absolute importance in the knowledge society. For human development information is as essential as the oxygen to the democratic society for survival and success. Lack of access to information resources is a death knell to social development and international peace. Access to information avoids ignorance, fundamentalism, wars and obstinacy hence provision of libraries and channels to information access is essential for the survival of democracy. On the other hand* Information *and communication technology (ICT) have made a profound impact on the life and work of people. In the context of library landscape, the impact of ICT is seen in the areas of library automation, networking, knowledge management, information storage and retrieval etc. But, the library information professionals (LIPs) are faced with a diametrically opposite situation with declining library budgets on one side and growing user expectations on the other. The information and knowledge seekers are overwhelmed with the growing information deluge in the digital age. So, it is inevitable for LIPs to develop information literacy skills among the end users and bring order to the web based chaos. In this context our college is taken as a live example and the study in innovations is undertaken in LIC in turn to the Librarianship.

Keywords: Knowledge society, ICT, LIS professionals, College libraries

1. Introduction:

Government College for men, Kurnool is established in the year 1971 with B.Com and B. A. courses only in old building called "bhooth bungalow" with a small library of 1200 books in it. When the building became old and reached to a dilapidated condition. On a rainy day, roof of one of the class rooms collapsed and the students went to the then Collector and demanded a New place and building. After a long struggle it shifted to the present building in the year 1992. The Batchelor of Science was introduced in 1993 with slowly developing labs and other minimum amenities. Though there are 17 acres of land is allotted due to lack of funds and interest of the administrators it is restricted to a quadrangle building. The Information Resource Centre (IRC) is situated in the left wing with the area

2. Need for the Study:

Use of modern technology in library has great relevance in the context of fourth law of library science. "Save the time of the Reader \ User," in which the internal efficiency of the Library develops. IT facilitates collection, storage, and organization, processing analysis, Presentation, Communication and Dissemination of data. The main reason for adoption of

ICT are information explosion availability of information in machine readable form and multi use of machine readable records by many users for any number of times and users can access information irrespective of time and location of the information source.

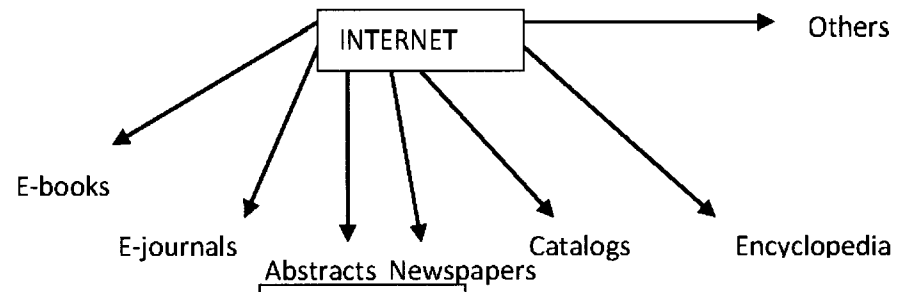
3. Objectives of the Study

The main objective is to know and have a clear picture of changing in the services and in infra structure which in turn effects the changes in the environment of services from the good old book reading to the latest developed one – Virtual reading environment. The infra structure changes that have taken place in the Government College for Men (GCM) from 2005 onwards reflect in the content management and services available in the Information Resource Centre. It effects the ability and efficiency of the Librarianship that how far he/she is going to satisfy the demands from the users. The stakeholders in a Degree College are the Teaching staff, Non- teaching staff, students and other specially enrolled in the Library as members. The innovative services that are available are studied in brief one by one in IRC, GCM, Kurnool.

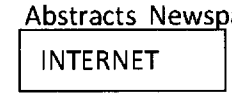
4. Implementation plan for modern technologies in GCM, Kurnool:

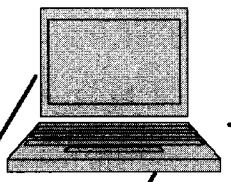
The changing role of a traditional functions and services of the LIPs:

PHASE-1



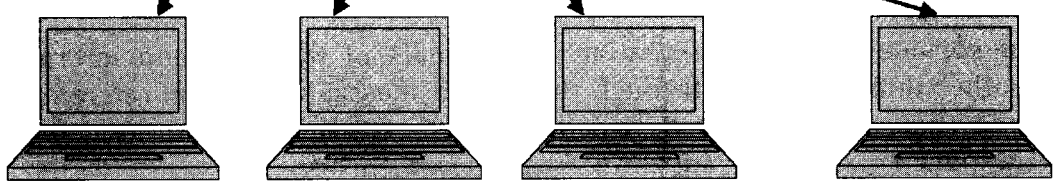
PHASE-2:





MAIN SERVER

PHASE-3:



USER TERMINAL

5. IT based Library and Information services offered the user community:

- Free Online Journals: eg; http:// www. jodi.ecs.soton.ac.uk/ http://www.information.net;
- Free online books: http://www.free ebooks.net; http://www.etext.libvirginia.edu/ books.
- Free Encyclopedia: http://www.britannica.com.
- Free News Papers: e.g.: http://www.dinamalar.com : http://www.hinduonnet.com
- Free Online Dictionaries e.g.: http://pdictionary.com
- http://www.wesu.edu/library/odlis.htm
- Free abstract service: http://www,wkap.nl/kaphtml.htm/ to CSEARCH
- Free Online Catalogue Service: http://www.catalog.loc.gov/; http://www.pindia.com

In GCM to save the time of the Reader / User the important websites which are useful for them are written on a board where they can search for freely available online e-journals, e-books other information sources like news clippings which are useful for research work.

Examination Cell Service: In GCM when the Examinations are going to start, the Librarian has to keep ready all the previous and expected question papers for the stakeholders. The model papers for competitive examinations are also taken care for the final year students.

Helpline Center: From 2008 onwards Library is also acting as the Helpline centre for the students. According to Sri. S.R. Ranganathan Reference service is "Personal service to each reader in helping him to find the documents answering his interest at the movement pin-pointedly, exhaustively and expeditiously."

Telephone or Cell phone service: If the user asks any question or any query to the Librarian through phone or mobile, he /she should give the proper answer and guide the user in a right way to the information.

Online enquiry service: If the user want any information regarding his research or seminar or any topic for competition through online then it should be answered.

E-mail service: E-mail service has the advantage of providing more complete answers than what could be possible be given at a busy reference desk. When answering a question though e- mail, the Librarian usually has more time to think about the question, the users information needs and if necessary consults with other colleagues who have more related expertise or knowledge.

Chat based service: sometimes any announcements of the tests and internal competitions and other things are sent through the instant messaging. Virtual reference: real-time reference line on the web is the latest trend in Libraries. E.g.: http://www.libraryspot.com/spotlight/cdrs.htm; http://www.cpi.org

Inter Library Loan service: GCM is having loan facilities and vice versa with other colleges in Kurnool. Staff and students from other colleges approach our Library for the Model Question Papers, reference Material and for their research work in different fields.

Change is Compulsory for Lips:

The above are the advantages of the implementation of new technologies in the Library, GCM, and Kurnool. LIPs should not fear that the new emerging technologies will replace the traditional services completely. Though the staff and students go through the news everyday on their Pcs and Laptops they prefer to go through the Newspapers with a cup of coffee or tea in their hand.

6. Opinion of the Students of GCM:

The development in the usage of electronic media, internet has increased the horizon of competition even among the students. The preparation for competitive examinations like CAT, NET, SLET, UPSC, PSC of the concerned states ,Entrance examinations to the Universities , applying for Bank jobs, Defense, Army, Navy, Air force etc. should be given priority by the Government of India in all Colleges.

7. Suggestions from the student's Point of view:

1. The common student studying in a Government College should get all those facilities / services accessible to that one in a corporate college.
2. The Government of India should take interest in providing all the information of all facilities, courses available to the student category in all colleges.
3. The scholarships in various categories, mode of applying, the sty fund, fee structure, hostel facilities etc. etc. through a common network of Higher Education.
4. Every citizen of India and student should feel free to take part in all types of competitions and National Level Examinations. They should be aware of the information and material for preparation through the Common net.
5. The infra structure should be given priority in the Government sector as the rural people and the poor will come into these college for study. So, it is the most important to be care of for the development of the country and the youth

8. Suggestions from the Librarianship of the GCM:

The Librarians are striving hard to satisfy the demands of users which are increasing day by day due to Competition in every field – whether it is science or humanities. They should be given proper training and a Common Policy adopted for the Standardization in syllabus and other recruitments. As a Librarian of the Government Institution the fallowing are the suggestions to be considered and taken care of for the better building of the Nation and its youth.

Lack of Finance: In Government sector, the budget released for the Library purchase of books and journals will be very less. For infra structure and for equipment the

funds given by the Government are very meager and it will not meet the demands of the users. The Knowledge Commission has recommended to strengthen the Libraries and it's infra structure but in practical the situation is very pitiable.

Inadequate Infrastructure: Web accessibility is the most important point and it has great impact on virtual learning. The supply of computers and other supportive equipment is highly impossible in a Government College where as the US schools are having 24x7 online technical help.

Lack of knowledge and training: Though LIPs have interest to learn more and do the Best due to lack of knowledge and training, they are helpless and they will a fear to touch and operate the system.

Conclusion:

Though we adopt all the modern technologies as infra structure and say that we are developed, it has its own consequences when the trouble arises in the system and every one feel that the new modern infra structure gives a new problems to face and solve.

Think of when you lost your entire term paper because your hard drive crashed. That is the part of danger of our digital world. We do not know how to store things for safe keeping hundred of years into the future. Without stable HARDCOPIES, everything that has been "born digital" is at risk. While e- books are great replacing paper books. The most recent calculations estimate that people need to read at least 100 books a year on their e-readers to break even with books on environmental impact. But it is a lot more difficult to recycle an e- reader than a paper book. (Source: http://www.treehugger.com/)

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Evaluation of Innovative Practices in Bishop Heber College Library

Swaroop Rani B S **Justin Prabahakaran S**

Abstract

This paper presents a case study of Bishop Heber College Library which provides a student's friendly services center a wing of the college main library. The study is carried out among the students of Bishop Heber College by adopting Questionnaire method and simple random sampling is adopted. The sample size is 279. The study assesses satisfaction of competitive exam resources, counseling/career guidance, information on scholarship, personality development, usage of Information Communication Technology and maintaining liaison with user community. The finding would endeavor to nurture the innovative services to enhance the libraries image in the eyes of the users.

Keywords: Student services center, Personality development, Liaison activities, ICT

1. Introduction

Libraries play a vital role in the development of higher learning. In present stage we are in the midst of an intellectual and technological revolution. This change has brought revolution in the library services also. In an educational institution it is not merely to provide stimulate to reading by procuring and displaying material for study and research, by introducing open access but in real sense it should feed the intellect of the student.

2. Bishop Heber College Library: A Brief Profile

Bishop Heber College, Tiruchirappalli is a Christian Minority Institutions accredited by NAAC with A^+ status and acquired Autonomous status in the year 2004. The college offers under Graduate Programmes, Post Graduate programmes, M.Phil and Ph.D. There are 5,990 students and 256 faculties. The college is affiliated to Bharathidasan University. The space in the library is adequate and Students Services Center started in 1990 is a wing of the library doing yeoman services. After the visit of NAAC, in its attempt to improve the academic programmes and to ensure excellence and introduce best practices in the library **'Student Service Center'** was carved out.

3. Objectives of the Study

The study began with the following objectives

- To know the level of satisfaction of collections on various competitive exams.
- To identify the effectiveness of counseling / career guidance service.
- To know the level of satisfaction on workshop held for personality development, confidence building etc.
- To identify whether they receive information on National and International Scholarship, other financial assistance.

- To know the level of ICT usage in rendering these services.
- Lastly, to identify the extent of laison maintained by the librarian.

4. Need for the Study

The idea of evaluation seems to be one which has come into the professional consciousness only recently. However, the impetus to evaluate has come from the need to justify budget more explicitly than ever before. All service functions in college libraries are being reviewed in terms of their necessity for the aims of the college. The consequence of this is that the idea of cost has come to be associated with evaluations and there have been perhaps a number of studies on the grounds of library users. Hence, this study was taken to evaluate the usefulness of innovative practices in the college student services center.

5. Method of Study

Questionnaire method was used to collect the primary data. The study uses simple random sampling and the sample size is 279. Students who were leaving out during 2009-2010 in UG, PG and M.Phil/ Ph.D level were included in the present study. The responses were elicited from respondents personally. The questionnaires consisted questions on personal data, satisfaction of resources and services.

6. Analysis and Interpretation

Table - 1: Level of Satisfaction of Collection on Various Competitive Exams

S. No.	Level of Satisfaction	No of Respondents	%
1	Highly satisfied	45	16
2	Satisfied	198	71
3	Not satisfied	36	13

The above table shows the distribution of respondents based on satisfaction of competitive book. 16% are 'highly satisfied' 71% and 13% of the respondents are 'satisfied' and 'not satisfied' respectively. The analysis also showed that latest material for TOFEL and CSIR was not available. Few updated CD's were also not available.

Table - 2: Effectiveness of Counseling / Career Guidance Service

S. No.	Level of Effectiveness	No of Respondents	%
1	Highly effective	48	17
2	Effective	135	48
3	Not effective	96	35

The above table shows the distribution of respondents based on effectiveness of counseling/ career guidance service. 17% say it is 'highly effective'. 48% say it is 'Effective' and nearly one fourth of the students in 34% felt it 'not effective'.

After considerable evaluation it was found that this service was less effective due to insufficient staff and space.

Table 3: Level of Satisfaction of Workshops held for personality Development and Confidence Building

S. No.	Level of Satisfaction	No of Respondents	%
1	Highly satisfied	60	22
2	Satisfied	87	31
3	Not satisfied	132	47

The above table shows the level of satisfaction on workshops held for personality development and confidence building. 22% agree it is 'highly satisfied'. 34% say it is 'satisfied' and 47% say it is 'not satisfied'. Student Service center invites staff from employment exchange, Bank officials, Entrepreneurs and conduct programmes. Since funds are barrier full fledge programmes could not be conducted.

Table 4: Information Received for Scholarship and Financial Assistance

SL	Level of Information passed	No of Respondents	%
1	To large extent	42	15
2	To some extent	177	63
3	Not at all	60	22

The above table shows the extent to which the information about scholarship and financial assistance is passed to the students 15% say information is passed to a 'high extent'. 63% and 22% say to 'some extent' and 'not at all'. Thus more than half of the respondents are satisfied with this service. An attempt to create an exclusive website for scholarship has been made by the using center Visual Basic. Visual Basic makes use of the features of MS Windows including MDI, OLE, DDE, graphics and more. Using these features is we had created powerful and full featured application.

Table 5: ICT usage in rendering these services

SL	ICT Usage	No of Respondents	%
1	To large extent	78	28
2	To some extent	45	16
3	Not at all	156	56

The above table shows the usage of ICT in rendering these services 28% say ICT is used to a large extent 16% say ICT is used to render service by the staff 'to some extent' and 'not at all'. The popularity of social media has increased during the parts years. Librarians can use few social networking tools like Blogs, Wiki, RSS, twitter, face book, flieker, Ning, Meebo, library thing, Myspace, etc. these social medias will enhance, supplement and complement the above services rendered to students.

Table 6: Laison Maintained by Staff

S. No.	Option	No of Respondents	%
1	Yes	159	57
2	No	120	43

The above table shows how students perceive laison maintained by staff in student services center. 57% say 'Yes' laison is maintained. However 43% say 'No'. Customer management, usage analysis and marketing provide library professionals with an important tool to deliver laison programs that are aligned with user needs information resources and services. Staff should remember that Customer. Relationship Management (CRM) strategy places the customer at the center of the library's universe[1].

7. Conclusion

There is no doubt that collection and compilation of a wide range of information is not as essay work. While initiating a new activity it is essential to go with an open mind and a high degree of imagination. The online experience further more should mirror a new paradigm of information delivery extending beyond search to involve collaboration and community building. To prove this Bishop Heber College is maintaining a full fledged self-financed student service center an innovative library facility.

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Authors Profile



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Justin Prabahakaran S: M.Phil Scholar, in the Bishop Heber College, Trichy-17.

Evaluation of University Library Weblogs

Geetha M **Padmamma S** **Savitha K S**

Koteppa Banateppanavar

Abstract

Blogs are providing a new mechanism for current awareness and professional development. Librarians can apply blogs for their community and also in the library. The challenges for librarians are to become familiar with weblogs/blog and its potential and explore new ways to future development and application in the field of library and information science community. The aim of this study was to evaluate the features of library weblogs with some criterias. To evaluate the features, 20 university library weblogs were selected for this study from different countries. The study describes that blogs are providing a new mechanism for current awareness and professional development and further states that libraries should use the weblogs to promote and market library services and resources to faculty and the students.

Keywords: Library weblogs, In-house and external sources, Archives.

1. Introduction

Blogs are providing a new mechanism for current awareness and professional development. Librarians can apply blogs for their community and also in the library. Promoting the library's services, resources and programs online blog can be helpful. With the emergence of a large number of wikis, weblogs, and social networking platforms like MySpace, Wikipedia, and Facebook, social networks has become very popular in the personal context. In the current research, we focus on Weblogs. Weblogs are websites in which an author or a group of authors publishes articles sporadically or at regular intervals. A great library blog requires three ingredients: inspiration, motivation, and dedication. The challenges for librarians are to become familiar with weblogs/blog and its potential and explore new ways to future development and application in the field of library and information science community. [1]

2. Objectives

- To identify and select the University Library Weblogs on the Internet;
- To study and analyse the content coverage links on home page of Library weblogs;
- To study and evaluate the content displayed with most recent entries;
- To study the facility of posting comments on University library weblogs;
- To know in-house documents, resources and other external sources.

3. Scope of the study

The study is restricted to surfing the internet of 20 university libraries weblogs. The home page and the webpage of these weblogs were surfed selected study criteria such as; Date of content posted; Links to archives; Most recent entries; Add links; Comment facility; Subject coverage; Links to in house sources; and Links to external source.

4. Limitations of the study

This study has the following limitations

- The study is limited to 20 university library weblogs on the Internet;
- The study is focused on the home pages of 20 University library weblogs and
- The details included regarding the websites under the study were effective as on the date of accessing the websites of university libraries weblogs till April 2009.

5. Methodology

The research methodology adopted for the study is investigative, which further includes surfing and tracing the websites of library weblogs of 20 universities.

- Homepages were examined for the study by using selected criterias;
- Detailed worksheets were prepared for data collection and analysis; and
- Conclusion and suggestions are drawn.

6. Analysis and Discussions

There are different types of weblogs but for the current project work organizational weblogs are chosen. The homepage of 20 university library weblogs were studied by applying above stated criteria. The list of university library weblogs shown in table 1 along with their abbreviations used for university library weblogs.

Table 1: List of University Library Weblogs

SL	Name of university library blogs	Abbreviation	URL
1	La Trobe University library blog	LTULB	http://www.lib.latrobe.edu.au/blog
2	The Bush Library Blog	BLB	http://bushlibraryblog.wordpress.com
3	University of Baltimore Law Library Blog	UBLLB	http://ublawlibrary.wordpress.com/
4	Temple University Library News	TUL	http://blog.libray.temple.edu/blog/
5	Government Publications Library of Colorodo at Bouldr	GPLUC	http://cubgovpbgbs.blogspot.com
6	Georgia University Library blog	GULB	http://www.librarygsu.edu/news/

7	Ashland University Library blog	AULB	http://aulibrarynews.blogspot.com
8	Wester Kentucky University Library Blog	WKULB	http://bog.wku.edu/library
9	Dentistry Library blog University of Toronto	DLB	http://uopftdentistrylibrary.blogspot.com
10	Binghamton University science library blog	BU-SLB	http://library.lib.binghamton.edu/
11	Roosevelt University Library Blog	RULB	http://rulibrary.typepad.com/roosveltuniversity-libr/
12	Curtin University Library Blog	CULB	http://apps.libray.curin.edu.au/blog/public
13	McMaster University Library	MUL	http://ultamac.wordpress.com/
14	The University Library Blog	TULB	http://blogs.uwa.edu/library/
15	Mulford Library Blog University of Toledo	MLB	http://mulford.utoledo.edu/mblog
16	Princeton University Library engineering Library blog	PUL-ELB	http://blogs.prenciton.edu/englib/
17	UOL Library Blog	UOLLB	http://uullibraryblog.wordpress.com/
18	University of Houston Downtown library blog	UHDLB	http://undlibrary.typepad.com/
19	Carmichael Libraries Blog	CLB	http://carmichaillibray.blogspot.com/
20	Medical Library Blog	MLB	

6.1 Study of Homepage of University Library Weblogs

Homepage plays a major role in providing web based university services to the users. Home page is like 1st page of a book. Website is a mean for publicity for the organization hosting the home page.

The University home page of any university library plays a definite role in dissemination of information. The home page of university library blogs have been studied by applying set study criteria like contact details, authority, search facilities, comment facilities, hyperlink, content coverage, ease of navigation, and archives.

6.2 Contact Details of University Home page

The home page of any university library should include all the possible contact details on home page. These details include postal address, phone number, fax number, email address, and the information regarding separate contact link. The websites of university libraries weblogs are analyzed using these criterias.

The observations have been reported in table 2. It is observed that the homepage covers the contact details in three ways.

a. By providing a separate hyperlink "contacts us".
b. By providing contact details in the footer region.
c. In both the ways mentioned above.

Table 2: Analysis of Contact Details of Universities Homepage

Sl. No.	Criteria	No of University Faculty	Percentage
1	Address on HP	17	85%
2	Photo	6	30%
3	Phone	18	90%
4	Fax	10	50%
5	Email	20	100%
6	Separate Contact Links	19	90%

It is observed from the above table that of 20 universities, 17 universities were included "postal address" (85%). 30% of websites "photos" and 90% websites show "phone numbers", 50% of show "fax number". It is observed that 100% of homepages of universities have given their "email address" and "separate contact links" which include all the contact details of universities.

6.3 Content coverage

A great site shares meaningful and useful content that educates, informs or entertains. Content should be easy to read and understand by its intended users. The homepage serves as a window for the information organization. While designing website effort should be concentrated on the information content and it is easily retrieved rather than just cosmetic appearance.

These observations were noted while studying the websites of universities and have been reported in Table 3. Based on the tables the data was further analyzed and percentages of the universities having respective links have been calculated.

Table 3: Analysis of content coverage links on Home Page of Universities

Sl. No.	Criteria	No of universities having facility	Percentage
1	About us	20	100%
2	History	20	100%
3	Administration	20	100%
4	Academic	20	100%
5	Admission	20	100%
6	Publication	20	100%

It is observed that out of 20 universities general information about the universities has been included under the content "About us" and this link is found in 20 homepages. Further, link to the "History" is provided by 100% homepages and 100% of homepages provided the link to "Administration," "Academics", "Admission" and "Publication."

Table 4: Analysis of content coverage links on Home Page of Library weblogs

Sl. No.	Criteria	No of university having facility	Percentage
1	Contact us	20	100%
2	FAQ	7	35%
3	User service	20	100%
4	Archives	19	95%
5	Recent entry	20	100%
6	News	20	100%
7	Text only	6	30%

It is observed from table 6 that "Contact link" is provided by 20 university library weblogs (100%). "FAQ" link provided by 35% of weblogs. "User service" link is provided by 20 University Library Weblog (100%). Link to "Archives" is provided by 19(95%) university library weblogs. "Recent entry and News" links are provided by all 20 University Library Weblogs (100%). Finally, 6 University Library Weblogs provided links to Text only (30%).

6.4 Ease of Navigation

It is observed from table 5 that 20 (100%) university libraries weblogs have given "Home link" on each page so that users can access directly the homepage without using back and forward option. But 18 (90%) universities used "Back, forward and top links" to access the front page. "Search facility and index/site map" has been given by 16 universities (80%).

Table 5: Analysis of Links Supporting Navigation on Home Page of University Library Weblogs

Sl. No.	Criteria	No of University having the facility	Percentage
1	Home links of each page	20	100%
2	Back & forward top links b/w page	18	90%
3	Effective search facility	16	80%
4	Index/site map	16	80%

6.5 Comment

From the above table it is found that "comment" and "link to post" facilities are produced by 20 (100%) university libraries weblogs so that users can give their comments,

after reading the entries posted by bloggers. "Map links" are provided by 13 (65%) universities and followed by "Categories links" are provided by 19 (95%) universities. It is very important to know who has posted the particular entries and it is shown by "Contributor's link" which is provided by 16 (80%) library weblogs. Finally, all 20 (100%) university library weblogs were provided link to "copyright" on their homepages.

Table 6: Analysis of Comment Facilities on Home Page of Library Weblogs

Sl. No.	Criteria	No of university having facility	Percentage
1	Blog Comment	20	100%
2	Post	20	100%
3	Map	13	65%
4	Categories	19	95%
5	Contributors	16	80%
6	Copyright	20	100%

6.6 Ask Librarian

Instant message is new means of communication and this link is given by seven (35%) university libraries weblogs, followed by "Chatting" facilities are given by 12 (60%) universities. Phone numbers details followed by 17 (85%) universities. Email is a fast method of communication: this link provided by 20 (100%) universities. Visit link provided by 6 (30%) university library weblogs.

Table 7: Analysis Statement "Ask Librarian" Links

Sl. No.	Criteria	No of University	Percentage
1	IM	7	35%
2	Visit	6	30%
3	Chat	12	60%
4	Phone	17	85%
5	Email	20	100%

6.7 Search Facility

Weblog is more useful for users when search can be done easily. Weblog entries can be searched by "Keywords", "Title" and "A to Z" facility.

Table 8: Analysis of Search Facility Statement

Sl. No.	Criteria	No of university having facility	Percentage
1	Keyword	17	85%
2	Title	18	90%
3	A - Z	12	60%

From the above table it is found that most approachable point is "Title" which is provided by 18 (90%) university libraries weblogs followed by "Keyword" searches by 17 (85%) and "A to Z " searches by 12 (60%) university library weblog.

14(70%) universities and 9 (45%) universities provide only directory links.

6.8 Archives

Blog entries can be frequently posted in every month to provide recent information to the users.

Table 9: Analysis of Blog Archives (2007 - 2009)

Sl. No.	Name of University Library Blog	2007	2008	2009
1	LTULB	6	12	4
2	BLB	5	0	0
3	UBLLB	10	12	4
4	TULB	12	12	4
5	GPLUCB	12	12	4
6	GUL	12	8	4
7	ALB	0	7	4
8	WKULB	12	12	4
9	DLB	5	7	3
10	BU-SLB	12	12	3
11	RULB	7	12	4
12	CULB	12	12	4
13	MUL	12	6	1
14	TULB	9	12	4
15	MLB	12	12	4
16	PUL-ELB	12	7	4
17	UOLLB	0	6	4
18	UDHLB	0	7	4
19	CLB	12	12	4
20	MLB	12	12	4

The above table shows the analysis of year wise archives. In 2007, 11 universities posted the entries i.e. regularly (12 months) followed by 1 university which has posted their entries in 10 months. 3 universities were not provided any single archive. 5 universities provide 5, 7, 9, 6, archives. In 2008, 12 universities posted entries in 12 months. Followed by 2 universities shows the 8 months archives and 3 universities provided 7 months archives. In 2009, 15 universities posted regularly i.e. 12 months, and one university has not posted any entries. But 2 universities were included 3 months archives.

7. Major Findings of the study

The following findings were found from this study:

- During the study, it is observed that maximum number of universities i.e. 20 (100%) provided the link of "E-mail". So that users can easily get access to further communications.
- It can be observed from the study that all 20(100%) library weblogs have given the links to contents covered in their homepages.
- "Ask Librarian" is the criteria for evaluate the weblogs and it observed from the study that "e-mail" and "Phone" facilities are given by all 20(100%) library weblogs.
- "Search" has been chosen as other criteria for the study. It is observed from this study that most of the entries in weblogs can be searched by "Title" which is provided by all 20(100%) library weblogs.
- "Add link" includes "external" and "internal" links. It is found from the study that majority of the library weblogs i.e.14 (70%) provided internal links rather than external links.
- "Archives" are important links to access previous entries posted on weblogs. During the study it is observed that maximum no. of archives included in all 20 library weblogs is in the year 2008.

8. Suggestions

- Weblogs and weblog home pages should be attractive, well structured, and regularly maintain and update the contents so that readers will depend on and expect new content daily.
- Weblog posts should be hyperlinked with other resources and make it easy to publish by providing a ready source of subject matter.
- Weblog conveys a sense of immediacy that is absent from most homepages. A weblog can thereby provide a way to feel closer to friends and librarians who may be geographically distant.
- Weblog tools should provide space for lively discussion through "Comment" feature, so that writers can engage in a discussion with their readers.
- The post in a blog should contain a hyperlink to the subject of the comment so that it is possible for a third party to follow the chain of commentary.
- Library weblog should give internal and external resources links on same and related subjects and links for the list of new services should be given on homepages of libraries.

9. Conclusion

There are many ways in which blogs can be used in an academic library environment to promote and market library services and resources to faculty and the students. Librarians can use the weblogs in personal knowledge management, class

announcements, posting student work for viewing, publication of tutor essays and as a community forum. To utilize these benefits libraries should maintain their weblogs. If they miss and remain backward in the new technology, they cannot go ahead with newer technologies.

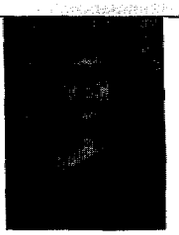
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Framework and Process for Library and Information Science Online Certification in India

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Abstract

Obtaining IT certification is compulsion for information technology (IT) students and& professionals. However, LIS depends on ICT for providing even simplest of service but still online certification is not compelled. Need for Library and Information Science (LIS) certifications constantly increase. This study proposes Library and Information Science certifications as alternative educational program briefing needed for LIS certification examination. Article synergy designs a framework for kick starting LIS certification in India, One that would meet not only state of requirement, but also would conform to international certification criteria, involving qualitative based content areas of university course offerings, core functions considered vital by the state, and various educational programs throughout the country. The proposed framework can be beneficial to examine their practice skills and knowledge via online certification in LIS.

Keywords: LIS certification, Online certification, Certification needs, Certification process

1. Introduction

Today approximately 200 – 400 computer-related certifications exist. Age of professional certification has arrived. 78% of IT managers believe that certified employees are more productive than others. The educational background is becoming an essential but not decisive factor for employee competition. Certification exam never disappears but blossom. Not much has been written about LIS certification in general or particular. Professional certifications are becoming increasingly important. The only way to obtain these certifications is to pass the related exams; certification is an increasingly important part of recruitment, often even becoming a vital screening mechanism. contended that IT certification, like educational background, can be considered as a standard for determining the suitability of IT workers9. However, these questions are hard to answer in diverse LIS profession. Most trades and professions are now developing their own professional certifications. Most Professions are currently following the hottest "certification trend". The requirement for LIS certification exams can be expected to rise constantly. This study presents mechanism for of LIS certification via e-learning systems.

2. Objectives of Article

- To propose online certification in LIS subject.
- To explain need and benefits of online LIS certification in present era.
- To Brief mechanism of Online LIS certification program.
- To identify possible areas of certification in LIS subject.

3. Need For LIS Professional Certification

3.1 LIS Professional Recognition and Solving Hurdles

One of the primary motivations for certification is that it raises the professional stature of the LIS profession. As most of professional subject have variety of certification which enhance quality and learning appetite of member, so doe's certification will elevate the status of LIS. Adding the certifications to your name correlates to professional credibility. The certification sets a standard that supersedes academic background; professionals have proven they have knowledge to do the job at any level but can't undergo formal course of education. Further, there are many programs that are not accredited which could be a barrier in some cases. The certification removes some of these career hurdles.

3.2 Interdisciplinary Nature of LIS

Many professionals practice in cross disciplinary areas overlapping information science, archiving and museum. A certification in Library Management, Information Specialist, Archiving Specialist or Museum Specialist will benefit professionals as a differentiator and establish credibility. Similarly, professionals working in subject specialized Library, says Biological, Chemical, Physic R&D's or law library if possess specialization certification, will have versatility and mobility not possible otherwise. A certification formalizes education and training and certifies competence in the field. The certification may open the door to greater responsibility. In government work environments, many states may require librarians to have Certification in Public Administration, Sociology, Political Science, or Management, Museum may opt of librarian with History certification in the job title.

3.3 LIS work and industry need

Many LIS services require specialized knowledge and skills from professionals; hence, employers may encourage certification as standard. Likewise, certification opens up online teaching and learning opportunities, as it qualifies one as a consultant and an expert in profession. In addition, universities may encourage, their LISc faculty members to obtain certification to enhance knowledge, update and apply same while teaching and practice.

3.4 Base for Salary, Incentives and Promotions

A study and observation revealed that, on average, certified professionals in other fields earn more than non-certified. Obtaining the certification indicates an ability to apply ones knowledge to practice in the field, dedication to one's profession, and a certain level of competence. It is not surprising then, that the salary hike, increments, and Incentives will be based on certification LIS professionals obtain in near future. Certification will be any excellent evaluative criteria and performance appraisal tool.

4. Framework for LIS Certification

Professional certification could be issued by universities or state government through professional associations web portal, so the process and requirements may be

based on job requirements of states convenience in conducting programs. However, the institutions like UGC (University Grants Commission) has to establish model law and guidelines, and Universities and state government will be representative at international, nation, and state level to conduct certification based on guidelines developed by agreed UGC committee of experts, which will act as administrative authority.

The certification at different levels should be established from basic to specific. It should be designed for students who are close to finishing an undergraduate degree and master's degree in LIS and practicing professionals. Certification for the LIS professions should be organized and conducted by universities and state government recognized via professional associations web portal. Candidates interested in pursuing certification are encouraged to check the requirements in the web portal guidelines and plan to pursue. For standardization, the professionals-in-training and certification exams are be graded by a central organization, Universities and State Government. However each professional association or university individually sets the requirements including educational requirements and exceptions. Professional association or university approval should be made mandatory to register for the examinations; candidates should be informed to plan well in advance. Applicants are referred to UGC credentials evaluations by associations or university. The evaluation process helps ensure that a candidate is qualified academically for certification. When professional association conducts an evaluation, it should base on UGC LIS education standard.

5. Certification Process

There are several steps to consider before proceeding with a certification or certification pathway. First, the individual has to assess the IT industry as a whole and decide his or her area of interest. Some of the services commonly found in the IT industry include systems management, disaster recovery, software and hardware installation, network administration, and information systems management. Irrespective of the area of interest, some issues need to be considered before proceeding:

5.1 Deciding certifications to be created (or certification pathway).

Although this seems rather obvious, it can be very confusing to decide upon which certification(s) to establish or which pathway. Minimally, consider setting one or two certifications in each area of LIS and depending on Industry requirements that can serve as a stepping stone to a certification pathway. The decision should account for the area of interest such as Archiving, Museum, Digitization, IPR, and subject specializations like Law, Management etc.

5.2 Setting Eligibility

Some certifications require a minimum educational level and practical experience. If the individual cannot meet these requirements, then another certification needs to be considered or additional training has to be taken to attain the minimum requirements. To get a certification a candidate must accumulate professional experience.

5.3 Creating appropriate study material for the certification.

Fundamentals of LIS examination preparation helps to refresh basic knowledge in

LIS profession. Many candidates may find that this step is extremely helpful. Can't imagine LIS certification without any knowledge of five laws of library science! Candidates must complete a standard basic written examination, which tests applicants on their breadth of understanding of basic Library science principles, and including some elements of ICT, Archiving, and Museum work. The core of the results envisaged is a skill set which clearly fit the competencies required for becoming a LIS specialist (basic level and advanced level). For all the skill elements training material should be provided in several languages (English, and Indian Languages) and should be upload-able on an e-learning system. A pool of test questions will be defined, which provides the basis for the trainees' certification process. The training materials development should be based on result of an initial consolidation of our experiences in research, education, (University Programs) as well as in collaboration with employers, and professional LIS associations.

5.4 Framing Rules and Regulation.

Depending upon the certification requirements, rules and regulations concerning criteria, selection of venue, fee fixing, mode of payment, mode of instruction, frequency of exams etc, should be framed. An important factor to be considered is minimum waiting periods before taking an examination as some may require the candidates to have a certain amount of experience. Also, if the person is unsuccessful in initially passing the testing requirements, there may be additional waiting periods before reapplying to take the test.

5.5 Maintaining certification.

Candidates could be allowed to take an open-book written Principles and Practice LIs examination, testing the applicant's knowledge and skills in the LIS discipline. Passing the test demonstrates a mastery of fundamentals and practical subject matter over a span of time. In many states higher educational degrees can be partially accounted in lieu of professional experience. Certification exams should be offered twice a year, after careful study of formal course schedule.

6. Current Practices in Online certifications

Most certifications generally require periodic retaking of an examination to be recertified. This may be necessary particularly if pursuing a certification pathway. Other certifications have no expiration date. The requirements (or none) for recertification should be considered as it will usually involve additional costs. All certifications are not equal and all do not require the same steps to be completed to obtain the certification. Becoming certified or attaining certification means that an individual completed the necessary steps outlined by the particular certification process. In some instances, an individual can become certified or attain certification by paying a fee or attending a 1- or 2 - day training course or seminar. Other certifications require the individual to take written and/or practical tests. Still others require the successful completion of a series of training courses that may take several years. The attainment of a certification attests that the individual has successfully completed the requirements and can be expected to perform at a certain skill level.

7. Advantages

Certification generally provides below advantages:

- Credibility to the individual by enhancing his or her confidence and skills level;
- A means of recognizing personal achievement;
- A mechanism to ensure quality assurance.
- Certifications available are recognized as industry standard credentials,
- Attaining one or more certification can improve the potential for job advancement and/or salary increases.
- Low cost documentary proof to show case existing knowledge and skills.
- Quick documentary evidence for testing self skills and knowledge.
- Great timely learning platform for working professionals.
- May add flavors to enhance more quality in existing LIS professional standards etc.

8. Disadvantage

- Acceptance of online certification as standards among LIS professionals, administration, thinkers, scholars, with par with other existing standards.
- Over existence of norms and standards eg. UGC API Score, AICTE norms and standards.
- Cost and Time may be high initially.
- Battle of importance between existing courses and certification.

9. Conclusion

Professional certification protects LIS professional's interest by enforcing standards that restrict practice to qualified individuals who have met specific qualifications in education, work experience, and exams. Those who do achieve certification, however, enjoy the professional benefits that accompany this distinction. A certification examination in LIS is one means to set high standards of professional quality. The professional association and universities are also actively working on the establishment of procedural guidelines in LIS, which are being compiled by a panel of experts. Future challenges will be to improve the accreditation in nuclear cardiology. The development in the other fields has demonstrated that this is a successful way to guarantee and improve the professional standards.

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FRBR in Libraries: An Overview

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Abstract

FRBR is a new conceptual model of the bibliographic universe that offers great potential benefits to various users groups, including both end users and library and information professionals, in the increasingly digital information environment. This has outlined the major FRBR development fronts and related critical issues, current, integrated and systematic view of FRBR that is supported by current literature, practice examples, research and results generated from the Delphi Study.

Keywords: FRBR, Catalogs, Bibliographic records, IFLA, Entities

1. Introduction

In 1998, the International Federation of Library Association and Institutions (IFLA) published Functional Requirements for Bibliographic Records: The FRBR model was developed based on an entity relationship analysis that is commonly used for the conceptual design of relational databases. The purpose of this entity relationship analysis was to discover the logical nature of the bibliographic data in terms of the following elements.

- Entities
- Attributes or Characteristics

2. FRBR (Functional Requirements for Bibliographic Records)

FRBR needs of the following audiences:

- Library professionals, such as catalogers, indexers, and metadata librarians who need to know the latest state of the models application. Current issues that need to be addressed and changes in descriptive standards and practices.
- Library and other information agency administrators who need to be aware of the changes in practice and system development to better plan and manage resources
- Reference librarians who need to know how a FRBR based catalog will improve their ability to more effectively help end users
- System developers and vendors who need to be aware of the implementations and tools that have been developed and tested thus far for future development
- Researchers and practitioners who need to know the latest developments in the FRBR model, its theoretical framework , and the most important issues that need to be explored and systematically examined.
- Library and information science faculty and students who need a comprehensive account of all aspects of the FRBR model.

2.1 Benefits of Implementing FRBR

- FRBR Helps Develop Better systems for users
- FRBR Helps Improve Cataloging Efforts
- FRBR Helps Better Manage Resources in a Digital Environment

2.2 Current Status of FRBR Development

- Review, evaluation, revision, and expansion of the FRBR model itself
- Creation and revision of standards related to FRBR
- Application of FRBR in various collections, settings, and disciplines
- Development of FRBR based systems, algorithms, and software conducting research in the above areas and FRBR user studies

3. FRBR Model: Entity Groups

FRBR identifies a total of ten entities categorized into the entity groups. The first three entities are included:

Group 1

- Work
- Expression
- Manifestation
- Item

Group 2

- Person
- Corporate Body

Group 3

- Concept
- Object
- Event
- Place

4. Impact of FRBR on Current Cataloging Standards and Practice

The FRBR report was published in 1998, but our current cataloging standards and practices have been slow to implement the changes. In order to implement the FRBR model, revisions of description standards are needed so that libraries might develop a better idea of how the model will change record structures and what information will be necessary to describe and provide access to the FRBR entities. Further it would aid in developing interfaces and displays that will facilitate the FRBR defined user tasks.

It is still unclear how much change the new description standards will bring to cataloging practice, speculation suggests that cataloging will be easier due to the elimination of duplicate description of works and expressions since each work and each

expression will need to be described only once no matter how many manifestations are associated with them.

5. FRBR Application

FRBR model can be applied to a variety of settings and collections, including both format based collections and domain specific collections. A number of benefits have been identified for both the end user of a library catalog and the library staff. Such benefits include easier searching, focused result, clustering at the work level, understanding and using bibliographic relationships.

Following is a brief overview of FRBR application as related to various types of collections and differing information environments with a brief description and discussion of some of the issues that have been identified for each area.

5.1 Format and Disciplinary Communities

- Works of Arts, Cultural Objects
- Classical Texts
- Fiction
- Hand press materials
- Literature(National)
- Live performing Arts
- Moving Images
- Music
- Oral Tradition Works

5.2 Setting

FRBR was developed by the library community to better serve user tasks. However, this does not mean that FRBR is applicable only within traditional libraries, other and more specialized settings for the potential application of FRBR have been discussed among the international community the following sections describe some examples of such setting .

- Traditional Libraries
- Consortia
- Digital Libraries
- Institutional Repositories
- Internet Archives
- Museums

5.3 FRBR Implementations in Library Catalogs

FRBR provides great opportunities for creating retrieval systems that better support user information seeking. This divided into two categories

a) Implementing FRBR in online library catalogs
b) Implementing FRBR in nontraditional library settings

5.4 Current FRBR Implementation Projects

- ❖ Full scale systems
- ❖ Prototypes or experimental systems
- ❖ Algorithms and software

6. Conclusion

The entities, relationships, and attributes in IFLA's FRBR model enable us to fulfill objectives of the catalog and will help us better provide bibliographic control in a global environment. FRBR brings a new vocabulary, new terminology, and a conceptual model that seems more relevant to today's Internet and digital world.

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Impact of ICT on Information Seeking Behavior of Commerce Faculty of First Grade Colleges in Dakshina Kannada District

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Abstracts

Information and Communication Technology has dynamically affected the information seeking behavior of the user community. Basically the emergence of internet technology has made it possible for the remote access of databases. Now- a- days, access is considered more important than ownership. In the changing scenario, library and information centers have to focus towards the user community in understanding their changing information needs and information seeking behavior. This paper describes on an ongoing survey into commerce teachers information-seeking behavior, including their use of new information technologies.

Keywords: ICT, Information seeking behavior, E-resources, Search engines

1. Introduction

Demand for information in the field of management studies has increased due to the improvement of managerial participation in both government-sector and private-sector industries. A number of institutions have established separate departments for conducting courses on Management Studies and the libraries of these institutions too have given emphasis to providing the information required in the field of Management Studies. The purpose of the survey was to explore the use of information technology by the teaching faculty for seeking information and to know how they access e-resources.

The changing information policies and devices necessitate the uses as well as the professionals to learn and adopt new techniques and methodologies to cope up. Faculty in higher education is a potential user segment to the Library. They are expected to be aware of the Library resources and technologies.

2. Literature Review

Suriya, Sangeetha and Nambi (2004) studied out a research work on "Information seeking behaviour of Faculty Members from Government Arts Colleges in Guddalore District". Challener (1999) investigated artists and art historians teaching in five liberal arts colleges and three universities. Results found that they need information for teaching. Shokeen and Kushik (2002) studied about information seeking behaviour of social scientists working in the universities located in Haryana. They reported most of the social scientists visit the library daily. Sethi (1990) used a suvery method to study the information seeking behaviour of 256 social science faculty members in Indian universities.

3. Objectives of the Study

- To examine the information need and information seeking behaviour;
- To explore the use of information technology;
- To know the sources of accessing e-resources;
- To know the purpose of information seeking; and
- To know the hindrances in seeking information from e-resources.

4. Methodology and Scope

The study was conducted through questionnaire method and distributed to the commerce teachers of selected First Grade Colleges affiliated to Mangalore University in Dakshina Kannada District. The questionnaires were distributed to 150 respondents. 120 commerce teachers responded to the questionnaire i.e. response rate is 80%.

Table 1: Details of Questionnaire distributed and response received

Faculty	Questionnaire Distributed		Response Received		Male		Female		Gender Total
	No.	%	No.	%	No	%	No	%	%
Professor	25	16.66	15	10	6	40	9	60	100
Associated Professor	40	26.66	30	20	13	43.33	17	57.66	100
Assistant Professor	85	56.66	72	60	31	43.05	42	58.00	100
Total	150	100	120	80	50	41.66	70	58.33	100

Table 1 indicates that a total 120 questionnaires responded out of 150 and consist of Professors 15 (10%), Associate Professors 30 (20%) and 72 (60%) Assistant Professors. Out of these respondents the female respondents' percentage is higher than male respondents.

5. Data Analysis

5.1 Knowledge of Information Technology

The question was asked to know the status on the knowledge of Information Technology. In response to this question, 20 (16.66%) commerce teacher indicated that their status on the knowledge of information technology "Average", while 60 (50%) mentioned as "Good". Only 40 (33.33%) had "Very Good" knowledge of IT, as shown in Table 2 below:

Status	Response received	%
Very good	40	33.33
Good	60	50
Average	20	16.66
Total	120	100

5.2 Awareness and frequency of use of ICT based information

The respondents were asked to indicate their usage in IT based library services and facilities. The table 3 reveals that majority of them 68.33 users use computer and its facility as frequently, 15% moderately and 12.50% occasionally. Table also displays that 48.33% internet frequently use 26.67% moderately and 16.67% occasionally respondents use for their research and teaching work.

Table 3 Awareness and frequency of use of ICT based information

Type of ICT facilities and services	Used frequently		Moderately		Occasionally		Rarely		Not at all		Total
	No	%	No	%	No	%	No	%	No	%	%
Computer	82	68.33	18	15	15	12.50	5	4.17	0	0.00	100
Internet facility	58	48.33	32	26.67	20	16.67	10	8.33	0	0.00	100
OPAC facility	45	37.50	30	25.00	25	20.83	20	16.67	0	0.00	100
E-resources	58	48.33	32	26.67	20	16.67	10	8.33	0	0.00	100
CDROM / DVD	32	26.67	25	20.83	18	15.00	23	19.17	5	4.17	100
Digital library	0	0.00	10	8.33	14	11.67	11	9.17	85	70.83	100
Institutional repositeries	0	0.00	0	0.00	8	6.67	12	10.00	100	83.33	100
Inter library loan	20	16.67	42	35.00	31	25.83	13	10.83	14	11.67	100
Current awareness services	88	73.33	24	20.00	8	6.67	0	0.00	0	0.00	100
Circulation (issue/return) facility	98.00	81.67	22	18.33	0	0.00	0	0.00	0	0.00	100

5.3 Internet search engines

All the respondents use 100% google.com search engines, followed by yahoo.com 73.33% for news and mailing purpose, MSN search engine 37.50% and 25% respondents use Altavista.com search engine.

Table 4 Use of Internet search engines

Search Engines	No. of Respondents	%
Google.com	120	100
Yahoo.com	88	73.33
MSN.com	45	37.50
Alta vista.com	30	25

5.4 Methods adopted to keep abreast of current developments

The question asked about the methods adopted by the respondents to keep abreast of the latest development of their subject 18.33% respondents get by reading current issues of print journals, 15% get by browsing electronic journals, 20.8% through awareness

services from library like CAS & SDI and 10% respondents get through searching online database.

Table-5 Methods adopted to keep abreast of current developments

Methods adopted to keep abreast of current developments	No.	%
Reading current issues of print journals / magazine	22	18.33
Reading latest books in the field	12	10.00
Browsing current issues of electronic journals	18	15.00
Searching online databases	12	10.00
Browsing websites of companies / organizations	4	3.33
Accessing e-books	8	6.67
E-mail alerts from publishers	6	5.00
Through awareness services from library like CAS & SDI	25	20.83
Attending conferences, workshops, etc	13	10.83
Total	120	100.00

5.5 Amount of time spent on Information gathering through ICT

Respondents reveals that they spent 1 to 2 hour to get information through browsing journals on internet followed by 38.33% respondents make use of 3 to 4 hours and very less 5% number of respondents spent more than 5 hours. Regarding the searching online databases 63.3% respondents use 1 to 2 hours, 10% spent 3 to 4 hours and 26.66 respondents not given any response.

Table: 6 times spent on information gathering

Information gathering activity	*1 to 2 hours*		*3 to 4 hours*		*5 and above*		*No response*	
	No	%	No	%	No	%	No	%
Browsing e-journals on internet	68	56.7	46	38.3	6	5	0	0
Searching online databases	76	63.3	12	10	0	0	32	26.66
Searching for related websites	78	65	20	16.7	0	0	22	18.33
E-mail alerts, correspondence	108	90	4	3.33	0	0	8	6.66
Accessing e-books	34	28.3	4	3.33	0	0	78	65

5.6 Effect of Electronic sources

Table -7: Effect of E-resources

Effect of Electronic sources	No.	%
Easier/ I have more time for other task	88	73.33
About the same/ I spend the same amount of time with or without E-sources	18	15
More difficult/ It take more time to gather and sort the information	8	6.66
Much more difficulty/ there is too much information and lack of technical skills	6	5
Total	120	100

Table 7 summarizes that maximum 88 (73.33%) respondents indicated that electronic sources had make it easier to find their desire information very quickly and they are also getting more time for others tasks. It can be concluded that majority of users are very comfortable with electronic sources for searching their desire information. The table also concluded that 15% respondents did not make any change by electronic sources and finding information from electronic sources about the same as it was earlier, However, 8 (6.66%) respondents summarized that gather information from electronic sources is more difficult than traditional sources, while 5% from electronic sources much more difficult than traditional sources.

6. Findings of the study

Major findings of the study are:

- It is observed that maximum respondents have good awareness and acquaintance with information technology which is a positive sign towards seeking of information using Information Communication Technology.
- The study represents online journals are more popular type of e-resources for seeking information.
- The study also reveals that the respondents most of the time methods adopted to keep abreast of current developments of their field is ICT.
- It is also observed that the search engines are the more popular method to retrieve electronic resources among respondents.
- It is observed that majority of the commerce faculty faced the common problems i.e., infrastructure facilities and lack of IT facilities especially in government colleges and un-aided college libraries.

7. Conclusion

The survey provided useful insights into the impact of ICT on information-seeking behaviour users and usage of ICT by the commerce faculty of degree colleges in Dakshina Kannada. It can be summarized that maximum respondents are using e-resources for their teaching, research, conferences and seminars. Due to ICT and availability of all e-resources

on user's desktop/laptop, and lack of computer facilities in their college library, their library's visit is affected on some extent. It has become imperative for the librarians to ascertain the exact information needs, seeking behavior and reading habits of the users. The college library should play a pivotal role in facilitating the users in the use of Internet and e-resources and other library and information services. The college library should organize the awareness programmes and seminars to train the users on seeking information from e-resources and to maximize the use of library resources and services. As there will be growing dependence on the Information Communication Technology for their information needs, the college library should strive to have the facilities and resources required.

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Implementing Best Practices in the Central Library Website of Indian Institute of Technology Madras

Harish Chandra

Abstract

The present paper discusses the importance of library website and also the various parameters of the website of Cambridge University and California State University libraries. It also describes the basic principles, approaches, best practices adopted in the design and development of the Central Library website of Indian Institute of Technology Madras with selected screenshots.

Keywords: Library website, Library resources, Library services, IIT Madras, Parameters,

1. Introduction

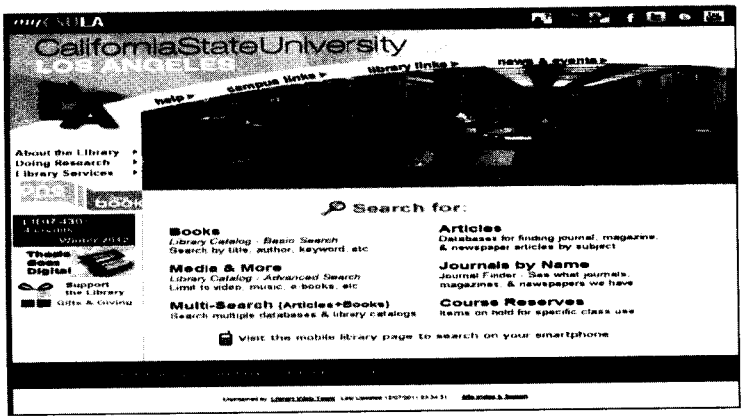
Library of any institution has a great role to play in the management, organisation and dissemination of knowledge resources to the stakeholders. Now, the digital environment has made librarians work more interesting and challenging which is possible to serve stakeholders more effectively and efficiently with the help of library website. In this connection, ChrisJasek(2004)states that use few colours and minimal graphics use only three or four matched colours in the design of your web site to make it more aesthetically pleasing and prevent a circus-like appearance. Avoid or minimize use of animated or flashing or scrolling text, as many users find it annoying and distracting. By using complementary colours and few graphics, a library Web site can enhance its appeal. With this view point, we conducted the web survey of University Libraries Website:As we know that it is always better to study the existing systems so that we can implement the best of the any system we studied in our given environment. Due to this reason, we have deeply visited and studied the university libraries websites as well as selected guidelines through conducting web literature survey of the following universitylibraries:

- California State University Libraries
- University of Cambridge Libraries

2. Major Parameters Identified

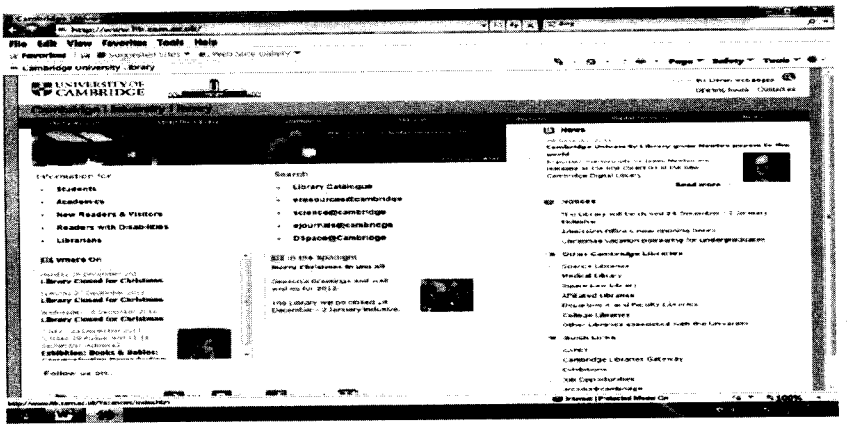
During studying the website of the library of California State University, the following basic parameters were studied which are described below:
About Library (Library Hours, Floor Plans, Phone Directory, Personnel, Policies, Friend of the Library, Gifts, Vision, Jobs and Internships)Doing Research, Library Services, Library Links, Campus Link, Theses Goes Digital, Support the Library, Help(Ask a Librarian, Research Guides and Tutorials, Workshops, Tours and Classes, Style Manuals, RefWorks, Locating Materials), News and Events, Search (Books, Media, Journals, Articles, Course

Reserve),Mobile Library for smart cell phones – search library catalogue, book locations, library hours, call reference desk call circulation desk



3. Cambridge University Library

Another website was taken into account is Cambidge University Library, UK which has lot of information for any library to consider for library website. Initially, the following parameters have been selectedand more details are givenunder plan your visit as well as About Library Plan your visit (Location Map, Opening Hours, Admissions<, Using the Library, IT Facilities, Wireless Access, Library Floor Plan)About the Library (Library Management,, Supporting the Library, Strategic Framewok,Annual Report, A Journey Around the World Mind, Friends of the Library, Library Sydicate, Historical Sketch, Projects and Collaborations, Library Publications) Catalogues,Services, Collections, Information For (Students, Academics, New Readers, Readers with Disabilities, Digital Services, Search, News, Quick Links, What/s On, FollowUs On (Twitter Blog, Flickr Facebook, RSS, Google+) Job Opportuniies. Screenshot of the library website is given as under:



4. Importance of Library Website

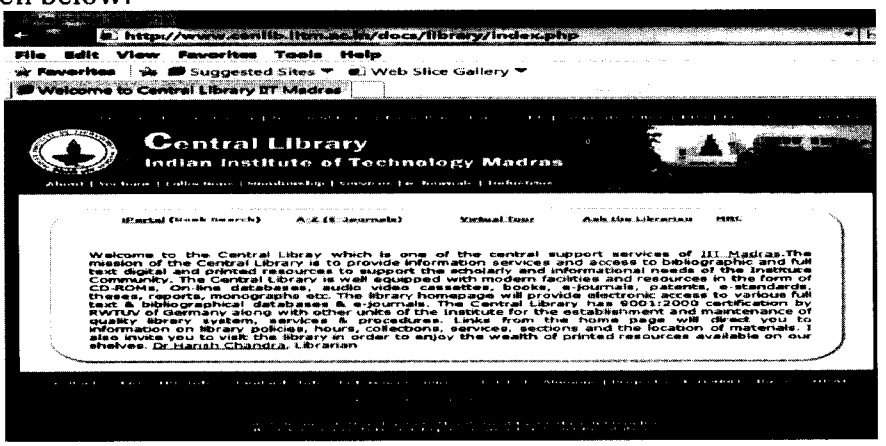
During digital era, website is very important tool in the hands of librariansto reach to non-reachable user population and serve them effectively. Some of them are listed here:

- ❖ Gateway to knowledge resources
- ❖ Tool to implement 24X7 service

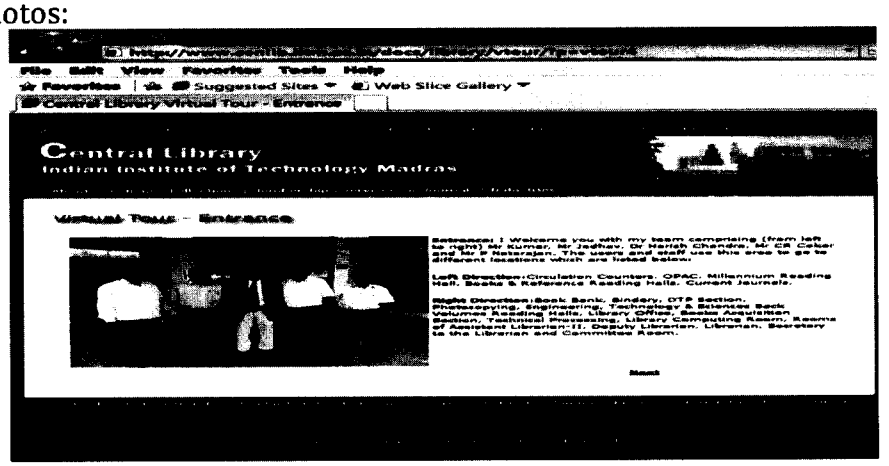
- To reach @ the door step of users
- To translate the concept of wall less library
- To bridge the digital gap
- Knowledge organisation
- To minimize information disparity
- To improve the image of librarians and librarianship
- To ensureusers autonomy
- To remove repetitive work
- To generate users satisfaction

Central Library: We have studied various websites of universities in India and abroad with specific reference to library environment. Keeping in view our user requirements, facilities and practices, we have incorporated the following major best practices which are discussed below

Simple Colour Scheme: We have adopted very simple, pleasing and academic colour scheme matching the mission of our Institute. The screenshot of Central Library website is given below:

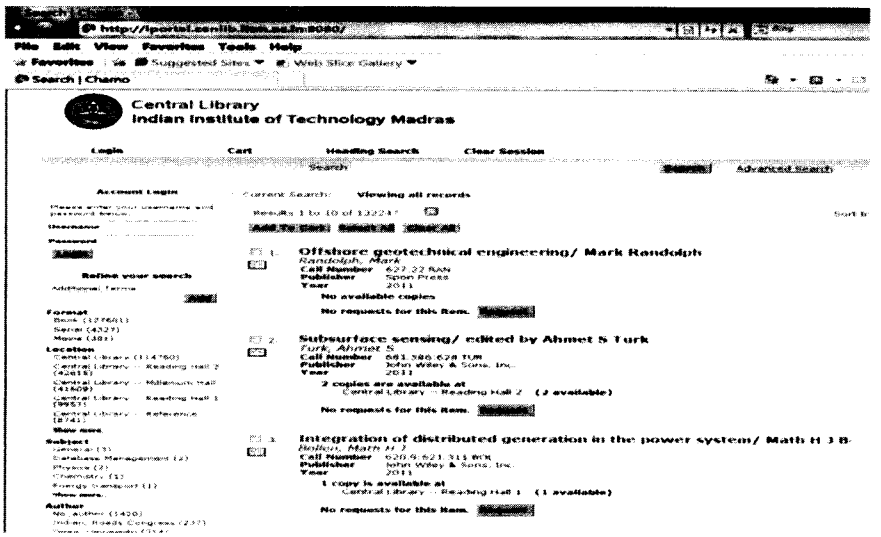


Clear and Related Photos: All photos have been given appropriatelywith lessimage size so that the access and retrieval is fast and effective. The virtual tour, sections, major facilities like digital knowledge centre, media resource centre, property counter, children library corner photos:



This is the screenshot of I-Portal which is very popular among users for the following reasons:

- It is an interface with collections, facilities and services
- It helps users to know their account status
- It provides autonomy like self-issue of books, reservation of books and location of books
- It provides online access to the Images& summary of books available in the Library
- It is an effective interface of Syndetic database
- It provides instant messages & search history to users
-

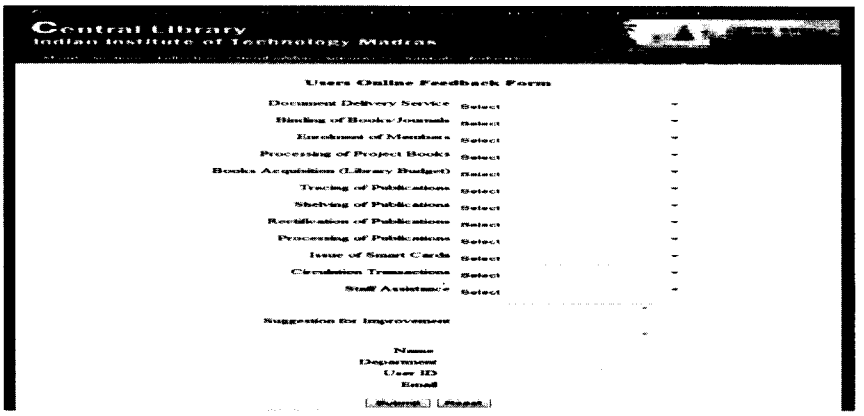


Download Facility: The Central Library website provides facilities to users for downloading the important documents and daily use forms like: List of approved vendors, book suggestion form, document deliveryform, photocopyingform. Feedbackform, suggestion.

Links: Central Library website provides links to library networks, professional associations, technical libraries and Institutions of India and abroad. Further to this it also provides Links for various E-Book, Reference, Open Access Resources, Theses, Patents and Standards.

Updating & Link Exchange Strategy : The website is updated periodically, broken links are identified, rectified and also suitably exchanged.

ISO- 9001-2008 Practices As we are an ISO 9001:2008 certified library, therefore, we need to ensure continual improvement in the system, services and procedures, userfeedback and suggestion are very necessary. For this purpose, we have provided online feedback form about the core processes identified which is given as under:



Text Buttons: All hyperlinks have been provided text buttons for quick retrieval and clear view.

Collection Forms: The collection is main backbone of the Central Library. The digital collection has been displayed in the following modes.

Subscription: IIT Madras Arrangement, INDEST Consortia and Open Source

Forms: E-Journals, E-Books, These, IPR Info, Standards Info, Reference Info have been given separate links

5. Services

Under this link, we have listed all services provided by the Central Library. In addition to this some specific services are given separate links like DDS, I-Portal, Virtual Reference Desk. INDEST.

Types of Users Served

We have provided a separate webpage for children Library Corner with hyperlink on the top of the first page of Library Website and similarly for Children, Alumnus and Industries to serve more better with specific focus.

Help for Users: Central Library website has incorporated some of the best practices like Ask the Librarian, Contact, Staff Directory, Links, Reference Sources for the benefit of the users.

Search: Central Library provides search facility for books catalogue, accountsinformation, new arrivals of books and journals and location of publications

6. Conclusion

It can be concluded that library website is a very essential tool which can be used to provide services to users @their doorsteps, ensuring 24X7 service policy and with great potential to improve the image of librarianship. It is further suggested that best features and practices available, needed to be incorporated in the library websites within institutional framework and policy.

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Information Literacy among Students of Vidya Vikas Institute of Engineering and Technology, Mysore

Adithya Kumari H Selvaraja A Chandrashekara J Mahadevamurthy M

Abstract

Information literacy is a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information. As information professionals, engineering librarians have the primary responsibilities of providing access to engineering information resources and giving instruction in how to use these resources. The paper highlights the significance of information literacy due to the advancement in information and communication technology. The authors in this paper tried to find out the ability of engineering students to identify needed information for their study, their awareness about the availability and use of resources and services in Vidya Vikas Institute of Engineering and Technology. Finally, it concludes by giving some fruitful suggestions for improving information literacy programmes for the user community.

Keywords: Information literacy, Students, Engineering College, Vidya Vikas Institute; Mysore

1. Introduction

American Library Association's (ALA) presidential committee on information literacy, final report states, "To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (1989). As the information professionals, engineering college librarians have the primary responsibilities of providing access to engineering information resources and giving instruction in how to use these resources. In the case of engineering students, this extends to build their information literacy skills, an important component in helping them become lifelong learners Hence in the present study an attempt has been made to describe the information literacy among Students in Vidya Vikas Institute of Engineering and Technology, Mysore.

2. Review of Literature

Ferguson, Jessame E., Neely, Teresa Y., Sullivan, Kathryn (2006) conducted a survey primarily based on the Association of College and Research Libraries Information Literacy Standards to gather baseline data about the skills of incoming students. Simard, Stephanie (2009) discussed the design and implementation of an information literacy program for the faculties of Science and Engineering at McGill University. Tucci, Valerie K. (2011) has studied, the first phase of a multi-phase effort, was undertaken to assess and provide for the information needs of the Faculty of the Schools of Science and Engineering at the

College of New Jersey (TCNJ) in the digital age. Ramakrishnegowda, K. C., Walmiki, R. H. (2004) conducted a study in Kuvempu University to know the entry-level computer literacy and information literacy of the post-graduate students. Hart, Genevieve., Davids, Marion (2010) addressed the issues faced by universities of technology on information literacy. This was tested at Cape Peninsula University of Technology, where the students are studied in terms of two workshops that allow them to search data related to their essays through online public access catalogue and engineering databases. Results of the study suggest that a timetable must be distributed for information literacy activities and the importance of librarians in education. Pattar, Vijay., Kanamadi, Satish (2010) presented a survey of the information literacy programmes being provided at the engineering colleges in Navi Mumbai, India. Leckie, Gloria J., Fullerton, Anne (1999) investigated the attitudes and perceptions of science and engineering faculty members with respect to the development of information literacy of their undergraduate students in Canada. Roberts, Joshua C., Bhatt, Jay(2007) studied that as information professionals, engineering librarians have the primary responsibilities of providing access to engineering information resources and giving instruction in how to use these resources. Stitz, Tammy (2010) studied that an engineering background may not be required for successful outreach projects; however, when coupled with a review of the relevant literature of sci-tech librarianship, it can certainly facilitate buy-in from the faculty in a way that promotes the American Board of Engineering and Technology. MacMillan, Don., Thuna, Mindy(2010) have aimed to broaden the inclusion of patent searching in information literacy instruction by extending it from chemistry and engineering into the life sciences.

3. Objectives of the study

1. To know the ability of engineering students to recognize their information requirements.
2. To determine the students ability to identify and locate the appropriate sources to collect necessary information
3. To examine the students ability to identify the key concepts in a given information environment.
4. To know the opinion of the students about the importance of information literacy.
5. To make suggestions for improving the level of information literacy among the engineering students.

4. Methodology

The survey method has been employed for the collection of required data. A questionnaire was designed to elicit the opinions of the users. These were distributed among the engineering students. Altogether 130 questionnaires were administered to the users of these engineering colleges and 92 filled in questionnaires were received back in the rate of 70.76 percent.

5. A Brief Profile of Vidya Vikas Institute of Engineering & Technology (VVIET)

VVIET was started in the year 1997, as part of the mission of the Vidya Vikas Educational Trust to offer top-quality education and training, and shape today's youth into the builders and leaders of a prosperous tomorrow. The institute provides a new generation environment for studies in 6 major streams, and presents a consistently fine record of success and growth in all of them. **The Institute offering Computer science & Engineering (CS & E), information science & Engineering (**IS & E), Electronics & Communication Engineering (E & C), Electrical & Electronics Engineering (E & E), Mechanical Engineering (ME), Civil Engineering (CE). Also conducts PG programmes; Master of computer Applications (MCA), M. Tech in Digital Electronics & Communication Systems courses.

6. Data analysis

6.1 Gender wise distribution of Respondents

Table-1: Gender wise distribution of Respondents

Sl. No.	Gender	Distributed	Returned	Response Rate
1	Male	70	48	68.57%
2	Female	60	44	73.33%
Total		**130**	**92**	**70.76%**

The above table shows that out of 92 respondents 48 are men and 44 are women respondents accounting for 68.57% and 73.33% respectively.

6.2 Getting Familiarity with subject in consultation with sources

Table 2 shows that out of 92 students, 61 (66.3%) became familiar with the subject by referring books. There are 14 (15.21%) students get familiarity of the subject by referring encyclopedias and 11(11.95%) students became familiar with their subject by referring journals. The students who became familiar with the subject by referring the databases are 6 in number representing 6.52%.

Table-2: Getting Familiarity with subject in consultation with sources

Sl. No.	Sources	Response	Percentage
1	Books	61	66.30%
2	Encyclopedias	14	15.21%
3	Journals	11	11.95%
4	Databases	6	6.52%
Total		**92**	**100%**

6.3 User Consultation with Section of the Book

The table 3 shows that, majority (47; 51.08%) of students are able to search and consult topic through index. There are 20 (21.73%) find it from bibliography and 17

(18.47%) find the required information using table of content of book. There are 8 (8.69%) students find information using Glossary.

Table-3: User Consultation with section of the book

Sl. No.	Sources of information	Response	Percentage
1	Index	47	51.08%
2	Bibliography	20	21.73%
3	Table of Content	17	18.47%
4	Glossary	8	8.69%
Total		**92**	**100%**

6.4 To find the most recent information about Nanotechnology

The table 4 shows that there are 36 (39.13%) of users have ability to find information about nano technology from encyclopedias and 30(32.6%) have the ability to find it journals. There are 10 (10.86%) each students have ability search and find from the books and other sources such as newspapers and magazines. The remaining 6(6.52%) students search and find from dictionaries.

Table-4: Ability to find most recent information about Nanotechnology

Sl. No.	Information about Nanotechnology	Response	Percentage
1.	Encyclopedias	36	39.13%
2.	Journals	30	32.60%
3.	Others	10	10.86%
4.	Books	10	10.86%
5.	Dictionaries	6	6.52%
Total		**92**	**100%**

6.5 Knowing the Meaning of a Word/Concept

Students were asked about the sources of knowing the meaning of word or concept in their subject. The data collected are analysed and presented in the Table-5

Table-5: Knowing the Meaning of a Word/Concept

Sl. No.	The meaning of a word/ concept	Response (N=92)	Percentage
1.	Refer Dictionaries	63	23.24%
2.	Read Text books	43	15.86%
3.	Refer encyclopedias	42	15.49%
4.	Search the internet	42	15.49%
5.	Consult experts	38	14.02%
6.	Consult colleagues	27	9.96%
7.	Other sources	16	5.90%

The above table shows the opinion of the students regarding the sources for knowing the meaning for a word. There are 63 (23.24%) students refer dictionaries to know the meaning of word/concept. There are 43 (15.86%) students who refer textbooks to know the meaning of word. There are equal number of users who refer encyclopedias and browse internet to know the meaning of word and are 42 in number, representing 15.49%. Those users who consult expert s and colleagues to know the meaning of word are 38 and 27 representing 14.02% and 9.96% respectively. There are 16 (5.9%) students who consult other sources to know the meaning of word/concept.

6.6 Gather information from information sources

Table-6: Gather information from information sources

Sl. No.	Information sources	Search through Pages (N=92)	Search through Index (N=92)	Content Page Search (N=92)
1.	Text book	19(20.65%)	23(25.00%)	21(22.82%)
2.	Reference books	11(11.95%)	20(21.73%)	23(25.00%)
3.	Journal	16(17.39%)	6(6.52%)	22(23.91%)
4.	Newspapers	21(22.82%)	13(14.13%)	8(8.69%)
5.	Abstracting indexing journal	14(15.21%)	11(11.95%)	5(5.43%)

The above table 6 reveals there are altogether 81 students who gather information through searching the pages. There are 73 respondents gather information by searching through index and 79 respondents gather information by content page search.

6.7 Documents used to get information

Table-7: Documents used to get information

Sl. No.	Documents	Gazetteers (N=92)	Year book (N=92)	INB (N=92)	Census of India (N=92)
1.	Books Published in India	11 (11.95%)	18 (19.56%)	10 (10.86%)	2 (2.17%)
2.	Place of Karnataka	17 (18.47%)	8(8.69%)	5(5.43%)	8 (8.69%)
3.	State literacy rate	4 (4.34%)	6 (6.52%)	5 (5.43%)	17 (18.47%)
4.	Events of the previous year	10 (10.86%)	8 (8.69%)	5 (5.43%)	6 (6.52%)

The above table depicts various types of documents used by the students to get information. 11 respondents get the information from the year book to know books published in India, where as 17 respondents replied that they consult gazetteers to know about a place of Karnataka, while 17 respondents stated that, to know state literacy rate they go through census of India and another 10 respondents search Gazetteers to know

events of the previous year. From this table we can come to a conclusion that the users still don't have clear idea about the different sources and the information they contain.

6.8 User Consultation with the Sources for information in day to day life

Table-8: User Consultation with the Sources for information in day to day life

Sl. No	Different sources	Response	Percentage
1.	Newspapers	43	30.06%
2.	Websites	38	26.57%
3.	Friends	31	21.67%
4.	Librarian	14	09.79%
5.	Parents	13	09.09%
6.	Others	04	02.79%

The above table shows that students consult information for day to life from differs. The 43(30.06%) students get information from newspapers, 38 students (26.57%) get from websites, 31(21.67%) get from friends 14 (9.79%) get from the librarian, 13(9.09%) students consult their parents and 04(02.79%) get help from others.

6.9 Sources used for getting current information

Table-9: Various sources used for getting current information

Sl. No	Sources used for current information	Response (N=92)	Percentage
1.	Internet	53	30.28%
2.	Newspaper	49	28.00%
3.	TV	46	26.28%
4.	Periodicals	12	06.85%
5.	Friends	09	05.14%
6.	Textbooks	05	02.85%
7.	Others	01	00.57%

The table shows that for getting current information 53(30.28%) respondents browse internet, 49 (28%) respondents read newspapers, 46 (26.28%) respondents watch Tele Vision, 12 (6.85%) refer periodicals, 9 (5.14%) of them discuss with friends and 05 (2.85%) of them read text books and 1 (0.57%) among them get the help from the others.

6.10 Knowledge about Internet

Table-10: Knowledge about Internet

Sl. No.	Use of internet	Response	Percentage
1	Yes	87	94.56%
2	No	5	05.43%
Total		**92**	**100%**

The above table shows majority 87(94.56%) of the respondents have knowledge of using internet as against 5(5.43%) of them don't possess the knowledge to use internet.

6.11 Use of search engines to search information through websites

Table-11: Use of search engine to search information through websites

Sl. No	Search Engine	Response (N=92)	Percentage
1	Google	79	74.52%
2	Yahoo	23	21.69%
4	MSN	03	2.83%
5	Others	01	0.94%

The table shows that 79(74.52%) respondents use Google as their search engine, 23(21.69%) use Yahoo search engine, 3(2.83%) of them use MSN search engine and remaining 1 (0.94%) of them prefer Alta Vista.

6.12 Familiarity with Electronic Sources

Table-12: Familiar with Electronic Sources

Sl. No	Electronic Sources	Response (N=92)	Percentage
1.	Websites	66	28.57%
2.	CD-ROM	45	19.48%
3.	E-news papers	34	14.71%
4.	E-Books	34	14.71%
5.	Databases	32	13.85%
6.	E-journals	20	8.65%

The above table shows that out of 92 students, 66 (28.57%) respondents are familiar to refer the websites, 45 (10.48%) respondents are familiar with the CD-ROMs, 34 (14.71%) each respondents are familiar to refer by E-news papers and E-books, 32 (13.85%) respondents are familiar to refer databases and 20 (8.65%) respondents are familiar with the access of E-journals.

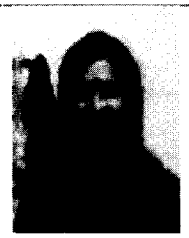
7. Conclusion

The present study identifies the information literacy skills that students need to improve on. These include identifying the most efficient search strategy, evaluating internet information and websites, as well as using information ethically. Students' usage of electronic scholarly resources in their course assignments is very minimal. Examination of the bibliographies shows that most students are not aware of the proper format of citation. Engineering students have a heavy workload and it is important that the information skills program should be available at times and in places that best suit the students. This program also needs to be seen to be closely integrated with the academic content of the subject. There is a need for collaboration between academicians and information literacy specialists to produce a well-designed program and ultimately information literate engineers.

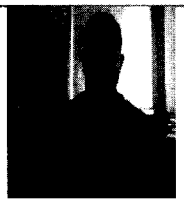
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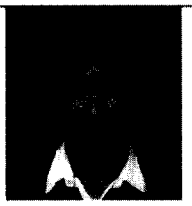
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Innovation in Library Best Practices: A Case Study of Tech Mahindra Library Services

Neelima Jadhav

Abstract

The famous author Shiv Khera in his book "You can win" rightly said "Winners don't do different things they do things differently". Importance of innovative ideas and best practices in library services are of profound importance for the organization. This paper discusses meaning and benefits of innovation and best practices, and being a corporate library, how Tech Mahindra Library has adopted the best practices to fulfil its customer requirements in terms to achieve highest customer satisfaction and has been recognized by senior management.

Keywords: Best practices, Innovation, Marketing of library services, Corporate library services, Tech Mahindra Library.

1. Introduction

In today's fast changing information world and adoption of technology have changed mindset of users drastically. The corporate libraries support its tech savvy and expert users, who have specific information requirements which would be vital for business perspective. They need the information on their finger tips and have less patience and want the library services to be in line with their expectations. This is the real driving force behind the adoption of innovative ideas and best practices in the library services. Being a knowledge centre of the organization working in a corporate environment is full of challenges and opportunities. It is one of the basic objectives of the corporate library to empower its users with efficient and effective library services. Innovative ideas and best practices can make the difference in providing excellent library services to its user base.

Usually, corporate libraries across the globe more or less have uniform agenda or mission and that is to serve its users with the best, and with respect to this they adopt various practices which as per them serve their customers in a best possible way.

2. What is innovative work Practices in Library Services?

Innovation refers to the use of a new idea or method, innovation is nothing but the adoption of new way of doing a work which has prone to occupy more resources which might be freed for better usage and thus adding efficiency in the function it has adopted. Innovation always has an association with the adoption of a new idea, or absorption of a technology, or a way of working with a vision to benefit the larger user base either by cost or by virtue.

Using innovative ideas in providing library services can make tremendous difference in terms of efficiency of usage of library resources. It also ensures the timely release & availability of invaluable knowledge resources for all interested users on time

and with a defined standard of the library. It also help in confirming the uniform availability of library facilities to all users irrespective of their designation & grades, but with respect to demand of their work area, timely need of knowledge and business urgencies.

3. What does Best Practices mean in Library Services?

Best practices in the library services are the way of working to achieve an excellent result in terms of providing services and serving the user base for the best of available resource utilization providing the feed to the knowledge hungry as well as promptly adopting to the environmental changes with respect to advancement of the technology in the best benefit of the library services. Further the best practices ensures the use of creative vision with a goal of enhancement and changes in existing way of work for better benefits, gives a clear indication of best way of getting the output and also results in creative mindset for the team members who has acquainted with that.

4. Benefits accrue of adopting Best Practices @ Tech Mahindra Library

- Development of efficient library services
- Better execution of policies & practices as per the goal of library services
- Developing goal oriented mindset
- Developing partnership with your customers
- Optimize library resource usage

5. About Tech Mahindra Library

Tech Mahindra ltd.(TechM) is a IT services Provider organization with a specialization in communication technology related services and has a worldwide customer base. TechM library has 8 integrated libraries at Pune, Mumbai, Banglore, Kolkata, Chennai, Noida, Chandigarh, Hydrabad, with a rich collection of above 35,000 books, around 75 magazines, 2000+ manuals and huge collection of CD/DVDs on various subjects such as Software engineering, Telecommunication, Networking, business development, knowledge management, creative thinking etc. It has a user count of more than 43000. TechM Library is using LIBSUIT software for library operations.

5.1 Best Practices @ Tech Mahindra Library Services

We at Tech Mahindra library are committed to work aligned with our company's vision and values. We are committed to provide excellent library services to our users. We have defined the library services to reduce service time, better access to the resources and to enhance efficiency to achieve better results.

Tech Mahindra library has adopted the best practice in following areas:

- Resources Management
- User associated Services & User empowerment
- Library Administration & Management
- Marketing of library services

6. *Resource Management*

6.1 Procurement and Approval

We receive requirements through various channels i.e. Project specific requirement, General requirement and suggestions from other sources. All requests undergo an approval process and once it has been confirmed with financial go ahead, the process of procurement starts. We ensure to complete the resource readiness process for newly acquired resources within 2 working days including cataloguing, classification and final make over for its availability for circulation. We grant loan of project specific resources for 3 months and if needed it can be renewed further. Along with we add TOC (Table of Contents) in Abstract for quick reference for the associates when they search the book on library site.

6.2 User Associated Services

Users are the soul of the library and the best of their services are the aim of library Services. We at TechM are always vigilant and taken steps to ensure the availability of information to the user promptly through various mechanism such as regular information mailer, new arrival dash board on Library site, through regular book exhibition and sale programs with discount for purchase from vendors, reading club session for popular books on the subject matter, through interactive blogs @OIE etc.

TechM has a tie-up with Birla Institute of Technologies (BITS) for proving on Job MS(Computer Science) study, and the library services are an integral part for facilitating the learning to the students. We are providing, tracking and collecting back set of books prescribed by the MS program for study along with fine, lost & paid as well damage repairing fine practices. It enhanced the facilities to the student and makes them concentrate more on study then other parts.

TechM also running a program named Initial Training Program (ITP) for fresh graduate student selected from campus hiring process. The library provides them introduction & induction into the organizational processes, distributing them a set of books for study & categories them for a tracking, monitoring and receiving back on time, at the end of the program.

6.3 Non-Location Library facility

We provide library services to Non-library locations through daily shuttle service. For which we have set up proper process for End-to- End execution includes requirement collection, availability of resource, confirmation mail sent to user for collecting the requested document.

6.4 Resource sharing across the locations

We share our information resources with other branch libraries whenever required for which we have created a separate Inter Library Loan category in the library software to keep the track of transactions.

6.5 Library induction Program

We arrange induction program for the new joinees. In which we introduce them to library services, rules, facilities available also demonstrate navigation of library site, its unique features and search facility available, we also make aware users about the copyright policy we have adopted while providing the library services.

6.6 Library site (http:// library.techmahindra.com)

It has the facility to search, renew and reserve of library items. It has a feature like "My Subject Profile" where users can create their own subject profile of the subjects of their choice, it also has the feature like "New Arrivals" where users can browse and reserve new addition of information sources in the collection. We have also provided the link for "Free Online books or Tutorials".

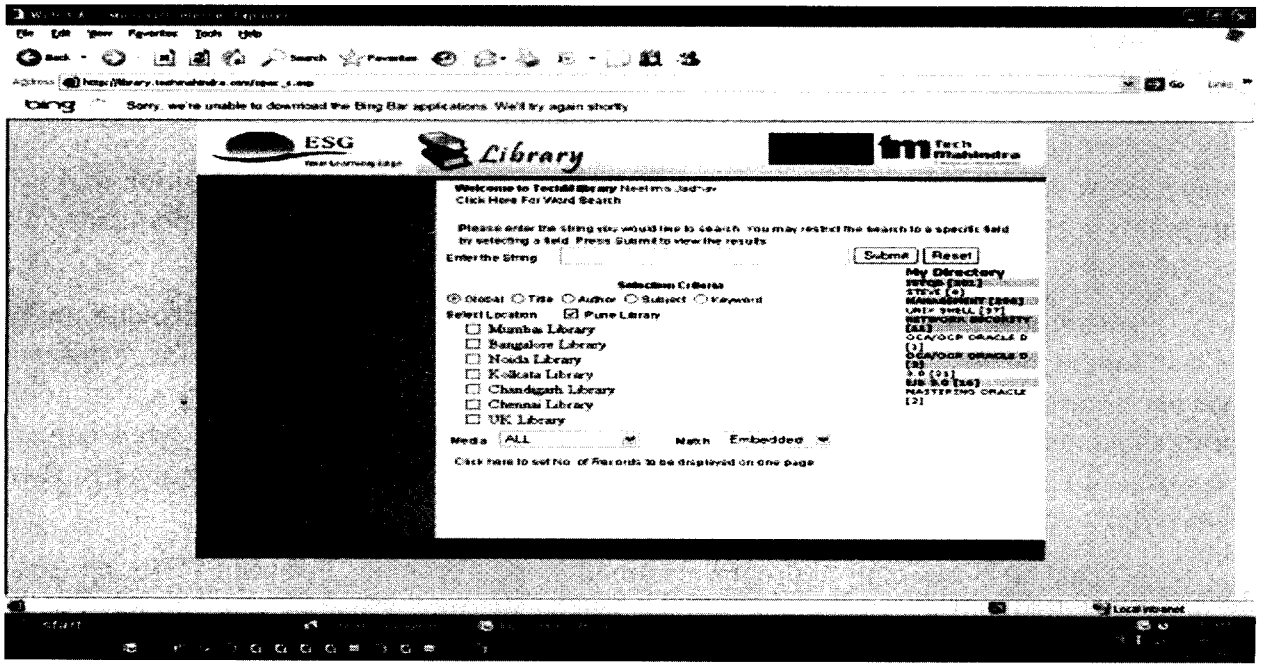


Fig.1: Library site (http://library.techmahindra.com)

6.7 Feedback/Suggestion

We evaluate our library service effectiveness with the feedback/suggestions received from the associates as well as senior management time to time and act upon. Users can submit the feedback/suggestion through library site or they can send a mail to the librarian directly.

6.8 Additional services

We have tie up with the vendors for personal book purchase. Users can purchase personal books through library with discount. Many of ours use this facility to enrich their reading experience.

6.9 Document Delivery Service

We share industry and business related information to senior management as a part of document delivery services as they often need the summary of event kind of details for understanding the trend and its repercussion if any for their work area, business and organization (Gartner, McKinsey reports etc.) Also share IEEE, ACM articles as and when required by the users.

7. Best Practices in Marketing of library services

We have adopted a strategy for marketing of our library services, which helps us making aware our users about the library services and facilities available and its value to the organization. We organize variety of events like Screening of Films, Reading Club Sessions, Magazine Subscription Drives, Best User, Library Users Day celebration, Book exhibitions, Sale of Used Books, On the Spot Membership Drive etc. We have Book Summaries Community on OIE (Online Interaction Ecosystem) on Intranet where we put book summaries of popular books. We have also provided information about the Book Summaries through Blog on Intranet.

8. Conclusion

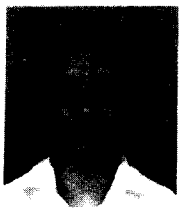
In corporate world it is necessary to think in creative mode to innovate and give your possible for the best of services to the users. And to provide an excellence services needs efforts, creative vision, and adoption of innovation and following of best practices. In corporate environment, with respect to the demand of time and opportunity for business growth all resources are getting inline and library being a knowledge centre is not an exception. To fulfil the need of organization for timely services and supply of required knowledge tools, we adopted best practices which resulted in best services for all user base. TechM Library best practices have not only helped us to serve the users better but also helped in implementing new initiatives as well as efficiently using the available fund and resources for the best of knowledge services.

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Ms. Neelima Jadhav: is working as Asst. Manager in Tech Mahindra Ltd., Pune, She has extensive work experience of managing the library for 43000+ user base very efficiently. Along with her work, she is a regular participating of various national level conferences and a familiar face in the world of corporate librarians. She has well worked and very good know-how of application of information technology in library services. neelimaj@techmahindra.com, 020-242250000, **Ext:**252823

Innovation in Management of Library and Information Centre

Dnyaneshwar Jadhav **Radhika Deshpande**

Abstract

Innovation in library management will be a key factor in attracting new users to the library. The main prerequisites of successful innovation in context of library are space, collection, team, motivation, enthusiasm, trust, budget, marketing, communication and rewards. Apart from the specialized services like SDI and CAS, Innovative services like used books sale of users, exclusive domain specific book display, expert talk, book review sessions, book summaries and promotional offers can be organized by the librarians to bring users closer to the library. The role of a librarian is undergoing continual change due to the growth in technology and the persistent demands of business. The librarians will now require a new set of skills beyond those classically taught. This paper will focus on innovation in terms of development and implementation of new ideas.

Keywords: Innovation, Library management, Innovative LIS

1. Introduction

The role of librarians is at a point where it will be very difficult to draw customers to library unless librarian brings in innovation and creativity in the services offered. Today the internet and electronic resources are very heavily used to get the desired information and hence only those libraries can stand out and satisfy its users which bring in innovation and value added services. Innovation means creativity, new ideas, knowledge creation. Companies spend big money for training courses wherein people play with brightly coloured blocks to get their creative juices going. However successful innovation needs to go beyond idea generation to put those ideas into action.

2. The prerequisites of Innovation

2.1 Space

In the library the books, databases, and computers are important however space is one of the most important reason why people use the library. Library's quiet, comfortable space is crucial to for studying. The library should ensure to keep its image as a neutral place with room for groups to meet and work. Library as a building or space is still important even though many of the library's resources are available online. Library has evolved from a place where information is stored, to a place where people study, learn, and interact with each others. This is a very important service that cannot be used online.

2.2 Collection

The collection of the library is very important and it should be aligned with the company's current and future requirements. The collection of the library should be developed with input from all the stake holders of the organization. While we think of innovative ideas we should also think of ideas by which we can get the most relevant and

useful collection in the library. If the collection is developed with the help of the stake holders half the battle is won!. The collection of the library will be key in optimizing the usage.

2.3 Team

The most important prerequisite of any innovation to successfully happen requires a good "Team". Without a enthusiastic and motivated team it is impossible to think of any innovation. Trust in each other can bring in lot of positive energy to implement the innovative ideas successfully.

2.4 Budget

A healthy budget is required for developing a good library with good facilities and good collection. Budget plays a very important role for any idea to succeed, sometimes innovation is impossible without having a healthy budget, as many ideas have cost attached to it.

2.5 Marketing

Marketing of what we are doing or what we intend to do is very essential for any idea to succeed. If the ideas generated are not marketed well they will fail for sure, hence it is utmost essential to learn effective ways of marketing the library services. Marketing of library and library services helps in attracting new and the existing users.

2.6 Communication

The librarian should have good communication skills. He should ensure to take special efforts to always keep connected with all the departments of the organization to know there information needs, this will help in aligning the strategy of the library going forward.

2.7 Rewards

The rewards play a vital role in success of any innovation and implementation of ideas. If the right work is not appreciated the library team will lose interest in working on any of the future activities. The good performance should be rewarded by appreciation or through some appropriate awards.

3. Innovative services

3.1 Used books Sale

Used books sale of users gives good opportunity for users to sell their used books and purchase new or other used books at a good bargain. This helps users refresh the collection of their personal books. Innovative ideas like these give users access to new knowledge.

3.2 Domain specific book display

Book exhibition is an event which is generally organized by all the librarians. Organizing domain specific book exhibition is viewed as a very innovative idea as it gives

importance to some specific subject/group of users.

3.3 Expert Talk

Organizing sessions in library on technical or general topic helps getting like minded users together. Such sessions help users know each other and in turn this helps in sharing their knowledge and ideas.

3.4 Book Review sessions

Organizing book review sessions helps create a platform for book lovers to come together and share/present about the book they like. This helps the getting like minded people in the library and in turn it helps in interacting and knowledge sharing.

3.5 Book Summaries

Book Summaries is an exciting new concept which saves precious time of the users Book summaries helps get to know the key points of each featured book. Book summaries is becoming very popular today as the user gets to read the abstract of the book within few minutes.

3.6 Special Offers

Organizing memberships drives, magazine and newspaper subscription drives at a discounted price from various publishers.

4. Conclusion

The librarian's profession is at a crossroads in the 21st century. Traditional library services appear to be on the decline while new technology-based services are on the rise. Librarians and libraries going forward will need to continuously work towards finding and giving innovative services to effectively manage the library and information centers.

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Innovations in Library Facilities With Special Reference to State Central Library, Panaji-Goa

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Abstract

The paper discusses briefly the historical background of library management and innovations in library facilities. Today information and communication technology is growing with great pace. Appropriate technology for the libraries that can sustain in this world of IT is very essential. Libraries can change into very active institution by providing new ICT based services to users. In the changing context of the society, Goa State Central Library have largely responded to this transition. This is mainly due to the impact of ICT and will definitely change the scenario of libraries in the 21st century. Print materials and the libraries in the 21st century will be paperless.

Keywords: Library Facilities, ICT Based Library Services, Application of ICT,

1. Introduction:

In ancient times, societies were static and traditional knowledge was stored in human minds and transferred from /shared by one generation to the next through word of mouth. The libraries during ancient time were under the strict control of kings, churches and monasteries. The physical form of library references materials were clay tablets, wooden blocks, palm leaves, leather materials, papyrus, metal plates etc. These materials were preserved in record rooms under lock and key. Public users were not allowed to refer such sources freely. In the later period, after the invention of paper and printing, publications of book material started. Due to changes in printing technology, information explosion took place in the word. After the industrial revolution all educational institutions, government archives and museums had started their own libraries.

2. Information Technology and Libraries

The IT has brought a sea change in the management of libraries and their services. The use of computer application had started gaining importance in libraries and Information centers. The multimedia system was introduced for storing voluminous information. In the recent past, read and write facilities were made available in compact disc system. Several network systems were started in India. The Internet and Intranet services have brought the libraries in the world very close. Several databases were established. The internet service has become the main attraction of the users.

3. Changes in Library Facilities

Continuous advances in information technology have invaded the libraries and Information centers world over. The users of libraries in the 21st century will be on the increasing side. They may not like the conventional manual system of library services. The issue system /

circulation system will be controlled by barcode system and books will be issued on online. The users need not take the trouble of keeping library tickets carefully in their bags or sign in the issue register. The conventional library services like SDI, CAS etc. will be provided through electronic media system. The library network system will provide interlibrary information exchange service. The users will also be benefited through Internet service by the modern libraries. The 21st century libraries will be serious in the business as service providers with specious reading room, varied collection of books, audio visual aids, huge databases, Internet access and availability of information. The Internet service has become main attraction of library and information users in the modern information age. With the invention I.C.T. in the library the users will get the information at their work place/homes without wasting the time and energy. E-book, E-journals etc. are made mandatory for all the AICTE related colleges and the same will be made mandatory to the UGC related colleges in near future and it will go on and on. This change will benefit all the users community with the help of ICT application.

4. State Central Library Panaji, Goa: A Profile

The Central Library was established on 15th September 1832 by Vice Roy Dom Manuel de Portugal e Castro as 'Publica Livraria'. It was changed to 'Bibliotheca Publica' and enriched with bibliographical repository transferred from the converts run by religious orders, which were suppressed in 1834. In 1834 the library was shifted to premises where the municipal proceedings were held, however, the collection on Mathematics and Military science was left in Academia and books on Administrative and Legislative matters were transferred to Secretariate Library. On 15th February 1897 the status of library was raised to that of a National Library renamed as 'Bibliotheca Nacional de Nova Goa'. In March 1925, it was annexed to the academic and cultural institution, (Instituto Vasco da Gama) and redesignated as "Biblioteca Nacional Vascoda Gama" by Decree Law no.38684 dated 18th March 1952. Under this Decree the priviledge of 'Deposito Legal' (Delivery Act) was made applicable to this library by virtue of it the library received all publication from Portugal and her overseas provinces. From September 1959, the Bibliotheca was detached from the Institute and put under the administrative control of services de inseucco e saude (Education and health service); it was then renamed as Bilioteca nacional de Goa. The collection of pre-liberation perios consists mainly of books and journals in Portuguese, French Latin, English and very few books in local language like Konkani and Marathi. The total pre-liberation collection was about 35,000 volumes. The first curator for central library was appointed in 1969.

The government is an effort to inculcate reading included reading habits among the youths and to encourage research had set up a Six floor library in the heart of the city at Patto, Panaji, Goa. Further the library is being named as Krishnadas Shama Goa State central Library, a prolific and renewed writer of Goa of the sixteen century also known as the founder of the konkani literature in written word.

The library has the following State of the art facilities for its readers:

1. **Book issue /Return Counter:** The library has conventional as well as self check- in and self check -out facility using RFID technology.

2. **Book Drop Box:** Library keeping in view the requirement of the readers at late hours has set up a book drop box to facilitated the returning of books with RFID technology.
3. **Braille Section:** This section has all the equipment, sculpture and apparatus required for
   the visually disabled readers. It has 100 Braille books and efforts are on the procure more equipments based on IT technology.
4. **Audio-Visual Section:** A well equipped Audio-Visual hall is set up to enhance the co-curricular activities of the young readers having the latest facilities and having the biggest TV available in market with home theater sound system. Having 1000 CD - ROM on different topic of current issue.
5. **Kids Internet Browsing Centre:** Library has made arrangement of 12 computers to browse the internet related information. Children enjoy using this center due to which more children visit the library.
6. **Internet Browsing Centre:** Internet Browsing Centre has around 52 Computers with internet connectivity for 15000 E-journals in all the discipline with full text facilities.
7. **Children Section:** A well equipped children section is setup to attract the youth. This section has around 10,000 books in all subjects. Different types of toys are also placed in this section keeping in mind the future generation of users in order to attract the children including reading habits.
8. **Book Stacks:** This section is meant for home lending and a maximum of three books are issued to a member for a period of one month.
9. **Rare Book Section:** The rare book section of this library is a treasure house of Goan old literature written by eminent authors. The manuscripts of different documents are preserved in this section.
10. Reference Section: All the books which are meant for reference are placed in this section with photocopy facility at a nominal cost.
11. Portuguese Section: This section has around 35000 books in Portuguese language publish before 1961.
12. Data Imaging Centre: The library has the facilities scanning of the document for preservation and to render the services to the readers.
13. Fumigation Chamber: A well equipped fumigation chamber has been setup to protect the books from insects and flies.
14. Preservation Laboratory: A hi-tech preservation laboratory with latest chemical and technology is being made available in this section to treat the books and preserve them for National posterity.
15. Microfilm/CD ROM-Browsing Centre: Microflims of around 10 laks pages have been completed and are placed for library use.
16. The library also has a well equipped children's theater for entertainment and information with surrounding sound systems.
17. Maps & Glob Section: Library also has a separate maps and globs section in which 147 different maps can be displayed on table if required.
18. Newspaper & Periodical Section: Library also has newspaper and periodical section at the entrance of the library. It subscribe 27 newspaper 150 periodicals for its users to refer in the library.

19. Research Cubicles: A separate research cubicles are developed on hire basis with all facilities like computer, internet, A.C for 24hours throughout the year.
20. Conference Room: A well equipped conference room with latest gadgets and tele-conferencing facilities are made available for public.

Further library has well equipped auditorium with sitting capacity of 200 pax, Seminar hall with sitting capacity of 100 pax, Exhibition/Art Gallery and Unique study room to facilitate the readers to study at extended hours.

Conclusion:

Advances in Information Communication Technology and its application in the libraries have spurred changes within library services/facilities. Information is the only raw material used for the development of any activity and thus application of ICT in library helps people to get more and more advanced facilities in less time. Goa State Central Library is not far behind in applying most of the ICT based services and its applications in the library for user community even though it is in a small state like Goa.

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Innovative Library Management and Information Services: A Case Study of Birla Copper Library, Dahej

Nelogal Shankar B **Kumbar B D** **Hadagali Gururaj S**

Abstract

The paper encompasses importance of innovation in general and how it is helping in creating maximum benefit for those who make it a central idea. The examples of Ram Charan of P & G and Steve Jobs of Apple and how they have used innovation to make their companies the world famous high earning benefits. The brief information of Birla Copper a unit of Hindalco Industries Ltd one of the flagship companies of Adity Birla Group and how it is taking care of information through bulletin board and library facility are explained keeping in view the changing scenario in this fast changing world. The innovative library management and services of Birla Copper library are highlighted keeping in view the customers as the most important factor. The features of Library Management module and BCKM – Birla Copper Knowledge Management Module and how they are helping employees of Birla Copper at different location have been briefed.

Keywords: Innovation, Creativity, Customers, Bulletin board, Library service

1. Introduction

Twenty first century is dominated by innovations and innovative ideas, services and products etc., in each and every field and library and information science discipline is not an exception to this. Innovative way of doing work is helping all the areas of our services at all levels. LIS is not the only area but is practiced and helps reap maximum output or benefits to those who use innovation and do their activities creatively. Application of our creativity in library services besides being saving cost it also earn name and fame to the Library and information staff from its users. The traditional way of serving the library users are although basic and they are core for serving its population they require to be more sharpen taking into consideration the ongoing pace of growth and the changing users' needs. However the traditional way of serving the users is the base upon which we can build and design new systems and methods innovatively to delight the users. Real innovation can change the context — the market space, the customer space, the competitive space, the societal space — in which a business operates. Changing the game, then, means not being hamstrung by the deep-rooted conventional wisdom of your business and industry, but rather is seizing the initiative to imagine a new game or a new space and, thus, shaping and controlling your destiny. Game-changing leaders search for and execute ideas that put the company on a long-term path to prosperity.

According to Peter Drucker the purpose of a business enterprise is "to create a customer." Nokia became number one in India by using innovation to create 200 million customers. Through observing the unique needs of Indian customers, particularly in rural villages where most of the population resides, it segmented them in new ways and put new features on handsets relevant to their unique needs. In the process, it created an entirely new value chain at price points that give the company its desired gross margin.

Innovation, thus, creates customers by attracting new users and building stronger loyalty among current ones. That's a lot in itself, but the value of innovation goes well beyond that. By putting innovation at the center of the business, from top to bottom, you can improve the numbers; at the same time, you will discover a much-better way of doing things — more productive, more responsive, more inclusive, and even more fun. People want to be part of growth, not endless cost cutting.

2. Need for a Change

The sudden emergence of electronically digitized information made the corporate sectors to find out techniques to have the information at their fingertips within no time. The electronic information storage and retrieval completely revolutionized the total scenario. The transition to electronic information source enables the users to have access over a vast collection of information. It is easy for those who are more acquainted with the operation of the computer and to have control over the important database in their respective areas.

Almost every function is carried out in a library whether it is an industrial, academic or special, has been altered some way or the other as a result of the Information and Communication Technology. The way by which the libraries collect, process, store and retrieve the information has been changing during these days. Corporate sectors are not an exception to this. Librarians as information Engineers with broad humanist backgrounds, must of necessity change their way of thinking if they are to meet the changes of the twenty-first century (Mahapatra, 2000).

Modern libraries are in a transition stage from manual to electronic System. Libraries and information centers are no longer self-sufficient but are linked through electronic network of various types. The advantages of technology have brought so extensive changes and it is not easy to assess their total effect. It is clear that libraries are in a state of fundamental transition and are innovated rapidly in the electronic environment. Traditional libraries are the storehouse of materials and knowledge mainly in the form of books and other printed materials. As the volume of information is increasing, the traditional means of transmitting the same also is changing. Libraries are expanding their traditional role to flourish in an electronic age. The electronic libraries are the result of the same (Sambasivan, (2000).

From the above two statements it is of necessity that the traditional system of services and management of the same has taken a sheer change and there is dire need of finding new innovative way. This is an innovative era and we always be innovative and apply different approach to even minute areas of our services to bring incremental changes and benefits to the organizations where libraries are part of the organizations

3. Birla Copper: The Company

Hindalco Industries Ltd, through Birla Copper, has set up a mega Greenfield Copper Smelting and Refining complex at Dahej in Bharuch district of Gujarat, INDIA.

4. Birla Copper central library: a brief profile

To keep up - to - date its employees as also to assist all the functional areas, Birla Copper has set up a Central Technical Library right from its inception i.e. 1996. The library collection comprises books, periodicals, Basic Engineering documents, Operation & Maintenance Manuals, Annual reports of various units & Consultancy reports of other companies. The library is fully computerized through an in house integrated library management module, which has been developed by the systems department with the inputs from the librarian. The whole collection viz., list of books, codes etc including the functional rules have been up loaded on to the module and up dated at our BCKM from time to time so as to help the employees to view the same right sitting at their desktops. The library users can search their interested documents of various types in a short time and visit the library either for reference or for taking home the books and periodicals. The online Journals / magazines that are received have been made available in the module so as to enable the users to access them as per their convenience. Readers can send their suggestion to procure books, periodicals through email facility as the library has been hooked to all the departments within the complex and also to the corporate and branch offices situated at various locations out side the complex. Users can also surf the net for their technical information in the library.

5. BCKM – Birla Copper Knowledge Management Portal

Information is the modern currency of business. To make this happen Birla Copper has developed a separate Knowledge Management Portal viz., BCKM –Birla Copper Knowledge Management Portal to provide an online repository of information accessible to all employees of the organization, where in he/she browse and share sustaining information pertaining to self and of common interests to fellow employees. The portal acts as a virtual library to the employees of Birla Copper to meet their technical and business related information both within the complex and across the group. The main sections of Library at BCKM are as under;

5.1. The usage of the portal:

- Facilitates responsible usage of official email, as messages that are meant for the entire group are put up on this virtual bulletin board rather than sending group email.
- A central repository to store manuals, and requisition forms. Hence reducing inquiries for the same in respective departments
- Facilitates reduction in inquiry handling activities at time-office and Salary desks as employees can query their salary and attendance details themselves. Any discrepancy can be reported and corrected in time.
- Acts as online bulletin board that can be referred at any time of the day. Repository of information official/ light reading shared by the employees for the result of the BCKM community. Parivartan is such an electronic monthly magazine, which is a product of employees' valued contribution. Copper Club on BCKM is a virtual club of employees where an employee can keep information like tournament schedule etc.

- Acts as very effective communication medium between management and employees where employee can see online what happened to his suggestion.
- Facilitates a virtual tour of the organization for newcomers- the first step to induction.
- Provides limited access to all employees of net banking, Railway and Airlines enquiry and connectivity to group websites.

5.2. The deliverables of the electronic Bulletin are as follows

- Information availability on fingertips, saving time in searching and accessible to all those who need it.
- Personal details like salary of the employees can be accessed by him only.
- Attendance details can be seen by employees themselves as well as by their managers.
- On line news magazines Pativartan, Birla Copper Environment Bulletin, National Safety Day Celebration can be accessed by all the employees right sitting at their desktops.
- Employees can get registered online for E- learning and G- learning courses at corporate HRD and get the certificate after successful completion of the course. They can also chat with the mentors, get their queries answered and send suggestion on their respective areas.

5.4. Online Library: An Important Section of B.C.K.M

The on-line library at BCKM is helping all the employees for their technical and managerial information need. While the information is uploaded at Dahej, the company site this is also accessible to the employees at other location in Mumbai and share the existing information. The main contents covered are technical and management articles, In-house publications, standards and specifications (list only), E-Books, E-magazines, list of books. These are uploaded on daily basis so as to help the concerned users can access them right sitting at their desktops. This has received an excellent response from the users as they are getting all required information at right time at right place thereby saving their valuable time. This has acclaimed a great appreciation from every corner of the Company including the other locations as they get their required information instantly.

6. B C Library Management Module

To take care of all the library functions, there is an In-house Library Software which is developed by our ISD Dept after taking into consideration the necessary inputs for the same.

The employees can check their interested books instantly and suggest for buying the same after checking it at BCKM. The procurement of books and periodicals are directly done through library soon after receiving the suggestions from the employees, the maximum period is 7 to 15 days depending upon the availability of materials in the market. The normal buying system for other requirements of our company is through our Materials Department which takes more time in fulfilling the lengthy procedure. After procurement they are documented and informed to the concerned through E-mail and intercom as also

published at BCKM under Library section so that all the employees also can see the new arrivals, they come and make use of the resources according to their choice.

The other sections of the Library are, Management articles like Everyday Leader, Innovation Tools, Metal Bulletin, C R U, Brook Hunt, Harvard Business Review, Fortune, TIME, Industrial Products Finder, The Economist, In-house magazines, e-Books where one book/ doc is uploaded everyday to help read them at their desk tops. The employees both at Dahej and also at other location at Mumbai, Baroda can access them while the documents are uploaded centrally by Librarian at site. This is just an example and many more such services are available at BCKM and through online library. Our users are happy and making maximum use of this portal. The features of the module are as under:

- This is an integrated module as soon as an employee joins the company his name and E.C. No is updated in the library module automatically. Just by entering the E.C. No the name appears in the module.
- Provision for entering New books, periodicals and Codes. This data base is used for both issue and return of documents by entering the E.C No of the employee against the doc No (Accn No).
- Provision of sending the reminders for delayed book of the employee with the overdue details by integrated E-mails of the company. The concerned employees get the reminder instantly and return the books on the same day.
- Provision of reservation of books in the module of the required book issued to other users.
- The users can re issue books for another period through intercom facility and also by sending Mails. After receiving request the issue period will be extended in the module which saves lot of time of the employees during working their hours.
- Subject wise generating of the books and periodicals as and when required.
- Generating the list of books issued to members. This is helping a lot because if the librarian is out of station the list of such books is sent to the HOD who signs the employees' No Due Certificate of separated employees (Resignation, Retirement, Transfer etc) after seeing the list instantly at his desk top.
- Generating the total No of books issued to any particular employee/s and sending it them for their information.
- Helps displaying the new arrival of books at BCKM a so as to help all concerned to see their interested books.
- Checking the missing issues of periodicals and sending reminder to the suppliers.
- Passing News paper bills after checking it in the library module as daily receipt of newspapers are entered with their price.

The library module is helping the librarian by way of saving time and expedites the library services which other wise would have required more staff and budgetary allocation which ultimately is a cost saving to the company

7. Centralized periodicals subscription and Journal Content Page Service – A huge cost saving.

The library has centralized some of costly periodicals and shared by all concerned locations and save lot of money every year. For instance CRU Copper Quarterly Industry and Market Outlook costing Rest 7 lacks (approx), Metal Bulletin daily and weekly costing Rs 1.5 lacks , Brook Hunt Copper d Metals Market Service - Monthly Update, COPPER and Brook Annual publications which costs Rs 7-8 lacks (approx). We save Rs 16 – 18 lacks only in periodical subscriptions annually which itself is a great saving for our company.

The content pages of the subscribed magazines are sent to our Technology Information Centre at Hindalco Taloja, our sister concern for compiling the Journal Content Pages and in turn send it by On-line to all participating units for further reference. This is displayed at our On-line Library for viewing by all employees. The employees of participating unit can get their interested articles in return directly from our Technology Information Centre, Hindalco Taloja. By so doing the participating units are saving the subscription cost which is the most important factor in industrial libraries and avoid the duplication of subscription across the group.

8. Copper Club Library

There is a separate library at our township viz., Copper Club Library. All the residents of the township are members of the library. The collection comprises general reading like novels, religion, personality development, children books, newspapers etc. The library is monitored by the librarian, Central library. This was facing some facing some problem in getting newspapers regularly and users were unhappy on this service because they pay for this on monthly basis. The librarian kept on watching the same personally in the morning hours between 6.00 to 7.00 A.M. to understand the actual problem. The problem was delay in getting the papers, irregularity and the papers were not coming in good condition. This was not improved in spite of several instructions to the staff in the club library as well to the supplier. It was learnt that the supplier was throwing the papers inside the copper club from outside which is far away from the library premises. It was also learnt that some times the papers were given to security staff to hand over to library staff. There is a chance of damaging the papers and also picking the papers by the passers by resulting in either no supply or receiving half papers in damaged condition. And there was no proper person to receive the papers during this time.

After studying the actual problem the librarian has personally discussed with the library users, the news paper suppliers, including the club library staff and the following instructions were given;

- The supplier should not throw the papers from outside the club premises but hand over personally to the library staff.
- The library staff should be present in the club library all the time and personally receive the News papers.
- The payment would be made of only those papers that are received full and in good condition.

After giving the above instruction the librarian kept vigilance on this for a week and found there is a regular supply of papers in good condition and the users are very happy. This may sound very funny and small example but helped solve the problem which was persisted since long. Unless we personally study and understand the problem whether it is a small or big there is a likelihood of not getting the proper permanent solution.

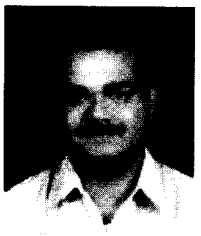
9. Conclusion

The innovation and its application in Library & Information Services have now become as important as core activities in library management and services. The creativity, if it is a daily activity, would yield tremendous benefits if not in short run but definitely in the long run. The example of A. G. Lafley and how he turned almost the loss bearing Company viz., Procter & Gamble to one of the highest earning benefit Company by studying thoroughly the customers and their interest even at the time of selection of their items and analyzing the same. Over the past seven years, Procter & Gamble has tripled profits; significantly improved organic revenue growth, cash flow, and operating margins; and averaged earnings per share growth of 12 percent. How? A. G. Lafley and his leadership team have integrated innovation into everything P&G does and created new customers and new markets. Another example is of Mr. Steve Jobs of Apple Company who made numerous innovations and helped Apple to produce almost all important items to all the customers after understanding the basic needs of the customers who are one of the main factors in the business. Emulating and serving our Library customers with creativity would enhance the organizational benefit although indirectly but it will be realized after seeing the smiling face of the user who receive the Library service with a difference. When the companies like Procter & Gamble and Apple have made tremendous innovations in understanding the exact need of the customers why not we the Library professionals emulate such innovative ideas to enthrall and delight our customers and make remarkable improvements? We all can get the answers for this if each one of us understand and practice the latest meaning of the following quotes of the great businessmen;

- ❖ You can't just ask customers what they want and then try to give that to them. By the time you get it, they'll want something new by **Steve Jobs**
- ❖ It takes 20 Years to build a reputation and five minutes to ruin it. If you think about that, you'll do things differently by **Warren Buffet**
- ❖ It's customers that made Dell great in the first place, and if we are smart enough and quick enough to listen to customer needs, we'll succeed by **Michael Dell**

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Innovative Library Practices: A Case Study of LRC

O. N. Chaubey **Salek Chand**

Abstract

In this emerging knowledge society, there has been a great change in the knowledge sectors. Library and Information centers and their similar organizations are also not an exception to this. A changing trend in the mode of procurement, storage, processing and particularly in the delivery of services of the libraries is observed in almost all the libraries of the modern age. Also there are libraries continuing the traditional services and attempting towards provision of new services. In the changing scenario, ICT (Information and Communication Technology) has been the most instrumental factor. In this article an attempt has been made to highlight the innovative practices adopted to deliver the best services in Library and Resource Centre of the Election Commission of India through new emerging technologies.

Keywords: Knowledge society; Library services; Innovative practices; Election Commission of India; Library and Resource Centre.

Library and Resource Centre (LRC)

The Library & Resource Centre (LRC) of Election Commission of India is a unique information resource centre, which provides an access to documentation on all aspects of the subjects of democracy, election and electoral related subjects. It conceived as major repository of reference material, primary and secondary, relating to various dimensions of election. This Resource Centre came into existence with the inception of Election Commission in 1950 devoted to dissemination and documentation services through innumerable activities such as newspaper clipping, indexing and development of database, library automation, providing access to national/international information source and consultancy services etc. The core activity of the LRC is to collect/store and disseminate electoral information, which are needed to the Commission for the benefit of different segments of the society. LRC has a rich collection of latest materials like books, Census, monographs, government reports, seminar and conference proceedings, international publications on democracy and allied disciplines.

Collection:

Books	:	28851
Journals	:	16
Online Journal	:	4
News Magazines	:	103
Newspapers	:	24
Non-Book Materials	:	93
Maps	:	53
Bound Journals	:	1340

SERVICES:

Web OPAC:

LRC is a fully computerised resource centre and accessible by each node installed in the ECI campus through its website URL: http// eci.nic.gov.in. Information of each document is available in bibliographical format.

Inter-Library Loan Services

Though, we are having a best-resourced library, but we cannot offer everything that every possible user may wish to access at one time. For the purpose of fulfilling their requirements, we have subscribed to an inter-library loan facility of books and journal etc that are borrowed from local libraries, which are having similar interests. When reading materials are not available in the library, the same is borrowed from other library under inter-library loan scheme. Books are also made available to other libraries when required. The inter library loan service supplements the needs of commission.

Circulation-Cum-Reference Services

Membership

Application for LRC membership provides by the circulation desk. After completion of a brief application, recommended by Head of Division, the applicant's record in the library user's database is added. Five number of borrowers card depending upon the entitlement are issued in the name of user/member after the completion of registration. These cards are non-transferable. Under no circumstances, these cards are to be given to someone else to use. The LRC Membership rules are designed to protect members from having their card misused by any other person in case of loss or theft.

E-Ticket

LRC has issued E-borrowing tickets to its readers which helps readers to issue and return the documents. The ticket contains the Borrowers information like membership number, Name and designation Department and Barcode.

Borrowing Privileges:

All the members are eligible for borrowing privileges at LRC. They can borrow ten items except for group C and D staff at one time for a period of two weeks. They are also eligible to use interlibrary loan and document delivery services and have off site access to electronic resources. The documents shelved in closed collections such as reference materials and latest reports and related topics are not issued but can be accessed by the user with the premises of LRC.

Documentation Services:

Press Clipping Services

LRC subscribes 24 daily newspapers of English and Hindi languages. Each newspaper

scanned and the items of the interest related to the commission are clipped and pasted on an A4 size paper sheet. The clippings then arranged subject wise decided by the commission and got Xeroxed in multiple number of copies and sent to officers of the commission , after shaping it into a bound book form. This documentation Service called **Press Clipping Services** on daily basis for its internal circulation since long back. Approximately 1000 old-press clippings in a book form containing approx. 100 pages each book had already been bound and kept in the LRC.

Special Press Clipping Services

Election Commission of India is supreme authority to conduct the elections in India. Many important issues are being taken by the Commission such as Electronic Voting Machine, Paid News, Right to Recall and Right to Reject. The LRC bring out special issues of press clippings time to time.

List of Additions

List of additions is the Current Awareness Services (CAS) for disseminating information regarding the recent publications, procured in the LRC. List of additions is broadly categorised subject wise. Each entry contains the information about the author, title, and place of publication, publisher, and year of publication. Besides these, each entry also contains total number of pages, accession number and call number of the document, as assigned by the LRC.

Current Content Services

The LRC subscribes 12 journals in printed form, four journals subscribes online and 103 magazines subscribes in printed form. LRC provides the content services from these sources on monthly basis.

DELNET Services

DELNET is a biggest library network in India and more than 1500 libraries and Resource Centres are connected with this network. LRC has been promoting resource sharing among the libraries in Delhi through this network. It provides access to databases such as Online Union Catalogue of Books, List of Current Periodicals, Bibliographic Database, Database of Thesis and Dissertations, who's Who of Indian Specialists and Non-book materials of all participating libraries. It helps in coordination with other regional, national and international networks and libraries for exchange of information and documents. The data is growing rapidly and therefore it is being updated on regular intervals. DELNET provides an array of facilities to its member-libraries. DELNET's relentless efforts of resource sharing have proved extremely effective. It has indeed been a big leap towards the modernisation of libraries in India. The users of LRC can freely login DELNET database.

Innovative Library Best Practices

Data Capturing

The **Data Capturing Unit** would help to locate the books in racks, to find out the location of books, to capture the data through this unit and for stock verification from time to time. The bar code label pasted on books can be verified as and when required with the help of this unit.

Digitization of Press Clippings

LRC also has been providing Digital Press clippings online to its users and preserve it for longer and multiple uses.

Display Panel:

The Election Commission of India has been involved in various activities through the year like conducting meetings with Politicians, Political parties, celebrities, foreign delegations etc. These information with updating are displayed through these digital display LCD Panels for the potential users. This is a unique information dissemination techniques installed in LRC and Commission's campus. How many voters have been registered in India as well as State wise, in which state elections/by-elections are due or going on, can be seen by the visitors of the commission.

Information Kiosk

For reducing lines, eliminating paper work, improving efficiency and providing instant services to the visitors, the LRC has established Information KIOSK. These information are accessible through the Commission's website which is display on KIOSK.

Training

As we know, information technology has been growing rapidly and therefore there is radical change in the way of services of libraries. In order to bridge the gap between two tired society i.e. "Knowledge haves" and "Knowledge have-nots", LRC is planning to conduct training courses to its users. The general objective of the training course is to enhance the application competencies of utilization of information technologies in libraries.

Xeroxing

A high speed coloured Xerox machine has been installed in LRC for the purpose of providing photocopies of the literature as available in LRC and connected with intranet. Single copy of each reference only is provided for personal use of the applicant and the multiple copies are denied.

Innovative Project:

Setup A Network with Chief Electoral Offices (CEOs) of Each State and UT:

The LRC has initiated to set-up a Network with CEOs and DEOs Resource Centres of Each states and Union Territory (Uts) of Indian for the purpose of sharing and dissemination of information to the organizations and individuals involved in Democracy and Election Area in the country.

General Objective: -

To set-up a Network with CEOs Resource Centres of Each States and UTs.

Specific Objectives:

- To set-up a connectivity with URL for sharing and dissemination of Resources.
- To provide a model check list of documents to all CEOs offices.
- To increase interaction amongst CEOs offices to share the resources Available with them.
- To provide infrastructure/technical/professional support to the CEOs offices to strengthen their Resource Centres.

Major Activities:

1. Organize one day meet with the Officers of CEOs dealing with Resource Centre.
2. Need assessment of CEOs Resource Centres.
3. Request to add new ICON titled 'Resource Centre" in home page of CEOs Websites.
4. To find out the present status of CEOs Resource Centres.
5. To provide infrastructure where is not available.
6. To Provide Library Application Software for automation their Centre.
7. To procure relevant Documents and distributed to all CEOs.
8. To procure e-resources and provide access to all CEOs.
9. Identification of new and required resources and provide to all CEOs Resource Centres.
10. Interaction with CEOs offices to ensure optimal utilization of subscribed electronic resources.
11. Ensure access to subscribed electronic resources to member institutions.
12. Organizing orientation programs for the CEOs Resource Centres.
13. Encourage interaction amongst member Resource Centres.
14. To provide Inter-Library Loan facility online on request.

Finding and Conclusion

i. 40% Users of the library prefer printed materials by searching OPAC for getting information and 60% depend on internet and online journals provided by the library.

ii Employees of the Election Commission of India are making very good use of the available ICT facilities.

iii. With the help of technology like internet, E-mail, telephone, fax etc reference queries are answered faster than before.

iv. With the use of Information communication technology, CAS, SDI, reference service is also done faster.

v. Circulation section is also working easily and faster with the help of ICT.

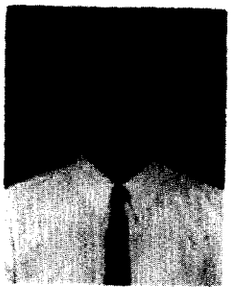
vi. Book selection, price checking is also done very efficiently using ICT.

The Best Practices in the library of Election Commission of India have changed the idea of LIS (Library Information Service). It helps in discovery the process of information and close performance gaps, solve the problem, and It create new opportunities and idea and it pursuit superior performance that can motivate and lead libraries to best practices. It is a process to changing the idea in a new term, it is an attitude or a philosophy based on the desire for continuous learning and improvement.

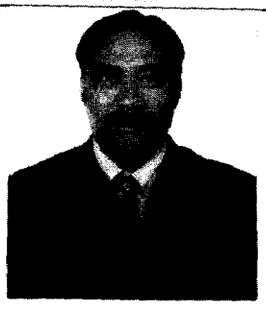
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Authors Profile



Dr. O. N. Chaubey did M.Com. and M.Llb. & Inf. Sc. from the Banaras Hindu University, subsequently a Ph.D. on ***"Application of Digital Technology for the Development of Manuscripts Information System with special reference of Ancient Indian Mathematics"*** from Dr. B.R. Ambedkar University (formerly Agra University), Agra. Presently associated with Election Commission of India, New Delhi. Prior to that he has served Indira Gandhi National Centre for the Arts and developed Digital Library of Arts. Also associated with ABIA Project for compilation and documentation of online Database of Annotated Bibliography of Indian Archaeology of South and Southeast Asian countries by International Institute for Asian Studies, Leiden, Netherlands. Presented 20 papers on various themes of Library and Information Science in the National and International Conference and edited 4 publications. He has 20 years experience at different capacity. Dr. Chaubey is actively associated with various professional bodies such as Indian Library Association (ILA); IASLIC; Ranganathan Research Circle, etc.



Salek Chand holds M. Com. and M. Lib. Info. Sc. from University of Delhi, is currently working as Library & Information Officer and Head, Library & Resource Centre of Election Commission of India, New Delhi. Prior to that he has served as Sr. Documentation Officer and Head, National Documentation Centre of National Institute of Health and Family Welfare, New Delhi and Librarian in Ministry of Water Resources Delhi and as Documentation Officer in Central Road Research Institute, Delhi. He has 26 years experience at different capacity. Mr. Salek Chand has contributed more than 32 papers and published at national and international level. He has a credit of publishing two books reviews and also a reviewer of many Journals He is recipient of Best Librarian Award form IDLA & GACL, Indore, MP. He visited abroad with different assignments in Philippines, Malaysia, Singapore, China, Australia, Greece, Thailand, Japan, USA and UK. Mr Salek Chand is actively associated with various professional bodies such as Indian Library Association; Medical Library Association of India; Ranganathan Research Circle, SALIS, LPA, SLP, CSSD, MANLIBNET, SLA Asian Chapter, etc.

Innovative of library facilities and services in Krishna Teja Dental College Library, Tirupathi, Andra Pradesh: A Case Study

Ramalakshmi T **Sreenivasulu R** **Chandran D**

Abstract

In this emerging awareness the world, there has been a rapid change in the knowledge sectors. Library and Information centers and their similar organizations are also not an exception to this. In this backdrop, in our paper, taking Krishna Teja Dental College Library, as a case study, an attempt has been made to highlight the innovative observations adopted in the style of delivery of facilities.

Keywords: Facilities, Users, ICT's

1. Introduction

There has been a rapid change in the thought of library and its comparable institutions in this knowledge society. Information and communication Technology has been considered as the most instrumental factor for the change in the mode of delivery of library services. General and traditional services of the library have been influenced with the introduction of new innovative practices, because of function of new ICT –based products and services. As a result, a new trend is observed in the process of delivery of services by the library organizations around the world. Most of the traditional services have also been replaced by new ICT-based facilities. Majority of the libraries have been automated, while outstanding ones are in the process. An attempt has been made in this paper to highlight the innovative practices adopted in the delivery of facilities at Krishna Teja Dental College Library.

2. About Krishna Teja Dental College

Krishna Teja Dental College was established in 1991 at Tirupati. The course was started under graduation (BDS) the intake of the students was 100. later, the post graduation courses were started in the year 2002, specialties in Conservative Dentistry, Prosthetic Dentistry, Endodontics, Orthodontics, Periodontology, Oral Pathology, Oral Medicine and Radiology.

2.1 Krishna Teja Dental College Library

The Library has Spreads over to two floors with an area of 3200 sq.m with Library Automation Networking (SOUL) and specialized collections of Books, Journals & Non-book materials are available in Basic Sciences and etc. Table 1 illustrates List of Library Resources at Krishna Teja Dental College Library.

Table 1 List of Library Resources

SL	Resources	Availability
1	**Books**	
	Total Number of Books	3,650
	Total Number of Volumes	4,279
2	**Electronic Books**	
	ebray (online database)	Available
3	**Periodicals**	
	Total Number of International and National (Subscribed for 2011)	44
4	**Online Journals**	
	NTR University Digital Library, (EBSCO)	Available
5	**Media Resources**	
	Video Cassettes	200
	Audio Cassettes	120
	Compact Discs	180

Library Working Hours: All Days (Including Holidays). 8.00 A.M To 8.00 P.M

3. Objectives of the Study

This study is carried out to know, how dental library are effectively using the Information communication technology for providing their library facilities and

- Current scenario of Information Communication Technology in library.
- To know the different services provided through ICT's
- To examine the knowledge of respondents in electronic facilities

4. Scope and Limitation

- The study covers only 79 students, even though questionnaire distributed to 100 respondents.
- Only Krishna Teja Dental College Library Users were chosen for survey.

5. Methodology

The present study was carried out to assess the facilities of library. Research method followed was a survey method. Through the distributed of structured questionnaire was framed and used to collect the data. Totally **100** questionnaires were distributed to dental college library users, out of which **79** responses were received. This constitutes **79%** of the total response and same was used for analysis purpose table 1.

Table 1 Gender-wise distribution of respondents

SL	Gender	No of Respondents	(%)
1	Male	68	86.07
2	Female	11	13.93
Total		**79**	**100**

Table 1 presents the data with regard to the distribution of questionnaires and responses received. Out of 79 respondents, 86.07% (68) are male and 13.93% (11) are female.

6. Data Analysis and Interpretation

Questionnaires were mailed to users. The received questionnaires were carefully edited tabulated and analyzed. To make the data analysis statistically sound, necessary statistical techniques (diagrams) are used.

6.1 Hardware Facilities

To provide the Library Services promptly and effectively automation is must, for that Hardware and Software is plays a vital role. Table 2 shows the availability of the Hardware Facilities in the Krishna Teja Dental College Library, Tirupathi, A.P.

Table 2 Hardware Facilities

S.No.	Hardware Facilities	No of Available
1	**Server (Model)**	
a	Rack Server	1
b	Tower Server	-
2	**Workstation**	
a	Pentium IV	5
b	Dual Core	2
c	Core2 Duo	-
d	AMD Athlon	1
3	Portable Hard Disk	4
4	Laptops	2
5	Palmtop	1
6	Scanner	1
7	Printer	1
8	Modem	4
9	Web Camera	1
10	Closed Circuit Camera	1
11	UPS	1
12	LCD Projector	4

6.2 Software Facilities

Table 3 shows the availability of the Software Facilities in the Krishna Teja Dental College Library, Tirupathi, A.P.

Table 3 Software Facilities

S.No.	Software Facilities	No of Available
1	Windows Xp	5
2	Unix/Linux	5

3	MS-Office 2003	5
4	MS-Office 2007	5
5	Internet Explorer	5
6	Google Chrome	5
7	Mozilla Firefox	5
8	Out look	5
9	PDF	5

6.3 Library Visitors

Table 4 presents the frequency of visiting of Library, majority of the respondents visiting the library *everyday* 74.68% following that, 16.46% visiting *Once a Week* and 8.86% visiting *occasionally*.

Table 4 Frequency of Visiting the Library

S.No.	Frequency	No. of Respondents	Percentage
1	Everyday	59	74.68
2	Once a Week	13	16.46
3	Occasionally	7	8.86
4	Not at all	0	0
Total		**79**	**100**

6.4 Library Automation Facilities

Table shows that the majority 96.20% are satisfied about the Library Automation and only 3.80% are not satisfied.

Table 5 Are you Satisfied of Library Automation facilities

S.No.	Library Automation	No. of Respondents	Percentage
1	Yes	76	96.20
2	No	3	3.80
Total		**79**	**100**

6.5 General Facilities

The data in Table 6 reveals that the 5-point scaling techniques analysis results names Good, Satisfactory and Poor. The WAM (Weighted Average Mean) values according to the ranking order on the opinion of the respondents about the Library Services provided. **Rank 1** Reference Services, **Rank 2** Reprographic Services and **Rank 3** Abstracting Services and etc.

Table 6 Library Services

SL	Library Services	Good	Satisfactory	Poor	WAM	Rank
1	Circulation	51 (64.56)	27 (34.18)	1 (1.27)	**34.67**	**4**
2	Reservation	21 (26.58)	53 (67.09)	5 (6.33)	**29.00**	**7**

3	Current Awareness Services	19 (24.05)	54 (68.35)	6 (7.59)	**28.50**	**9**
4	Selective Dissemination of Information	31 (39.24)	47 (59.49)	1 (1.27)	**31.33**	**6**
5	Inter Library Loan	14 (17.72)	62 (78.48)	3 (3.80)	**28.17**	**10**
6	Reprography	69 (87.34)	8 (10.13)	2 (2.53)	**37.50**	**2**
7	Supply of Documents /Articles	54 (68.87)	21 (26.58)	4 (5.06)	**34.67**	**4**
8	Reference Service	71 (89.87)	6 (7.59)	2 (2.53)	**37.83**	**1**
9	Abstracting	59 (74.68)	18 (22.78)	2 (2.53)	**35.83**	**3**
10	Internet	32 (40.51)	46 (58.23)	1 (1.27)	**31.50**	**5**
11	Indexing	21 (26.58)	52 (65.82)	6 (7.59)	**28.83**	**8**
12	Bibliography	17 (21.52)	55 (69.62)	7 (8.86)	**28.00**	**11**

(Figures in Parentheses indicate percentage) **N=79**

6.6 Traditional Facilities

The data in Table 7 exposes that, the 5-point scaling techniques analysis results names Good, Satisfactory and Poor. The WAM (Weighted Average Mean) values according to the ranking order on the opinion of the respondents about the Traditional Services provided.

Rank 1. Referral Services
Rank 2. Reading Hall Services and
Rank 3. Classification Services and etc.

Table 7 Traditional Facilities

S.No.	Traditional Services	Good	Satisfactory	Poor	WAM	Rank
1	Classification	36 (45.57)	39 (49.37)	4 (5.06)	**31.67**	**3**
2	Cataloguing	23 (29.11)	54 (68.35)	2 (2.53)	**29.83**	**4**
3	Paper Section	14 (17.72)	63 (79.75)	2 (2.53)	**28.33**	**5**
4	Reading Hall	41 (51.90)	32 (40.51)	6 (7.59)	**32.17**	**2**
5	Referral Service	45 (56.96)	33 (41.77)	1 (1.27)	**33.67**	**1**

(Figures in Parentheses indicate percentage) **N=79**

6.7 Electronic Facilities

The data in Table 6 reveals that the 5-point scaling techniques analysis results names Good, Satisfactory and Poor. The WAM (Weighted Average Mean) values according to the ranking order on the opinion of the respondents about the Electronic Services provided.

Rank 1. CD/DVD-ROM Searches Services
Rank 2. Online Database Services and
Rank 3. E-Journals Services and etc.

Table 8 Electronic Facilities

SL	Electronic Services	Good	Satisfactory	Poor	WAM	Rank
1	Audio/Video Cassettes	12(15.19)	58(73.72)	9(11.39)	**26.83**	**4**
2	CD/DVD-ROM Searches	64(81.01)	14(17.72)	1(1.27)	**36.83**	**1**
3	Online Database Services	24(30.38)	52(65.82)	3(3.80)	**29.83**	**2**
4	e-Books	8(10.13)	64(81.01)	7(8.86)	**26.50**	**5**
5	e-Journals	16(20.25)	61(77.22)	2(2.53)	**28.67**	**3**

(Figures in Parentheses indicate percentage) **N=79**

6.8 Satisfaction on E-Resource Services

Table presents that the majority 86.08% are satisfied about the E-Resource Services and only 13.92% are not satisfied.

Table 9 Are you Satisfied for the E-Resource services

S.No.	E-Resource	No. of Respondents	Percentage
1	Yes	86.08	86.08
2	No	13.92	13.92
Total		**79**	**100**

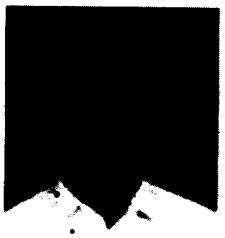
7. Conclusion

With the introduction of new innovative practices, the mode of delivery of facilities and services of library has really changed. The above mentioned description presents the situation in respect of Krishna Teja Dental College Library. The new practices introduced by the library in this part of the country are commendable, as the library has become a model for the state. Library is serving as a model for library computerization and electronic information services.

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Internet Facility and Usage by the Faculty of Women's Colleges Affiliated to KSWU, Bijapur

Shazad Afia

Abstract

This article describes in brief a survey conducted at women's colleges affiliated to Karnataka State Women's University to find out the use of internet and its facilities resources and services. It also covers the problems faced by faculty. A survey of total faculty of 70 colleges was conducted through Questionnaires method. Majority of them expressed their interest in the use of Internet and its resources and were enthusiastic in improving their skills in the use of the Internet. The study recommends the provision of more computers with Internet facilities, better access speed, and providing more orientation/training programmers in the use of Internet in these institutions.

Keywords: Women's Colleges, Faculty, Internet use, Services, Survey reports.

1. Introduction

In the era of networked information, Internet, the largest worldwide network of networks, has emerged as the most powerful tool for an instant access to information. Information is now just a 'finger touch' distance away from the user and it would not be inappropriate to say that the Internet has become the biggest global digital information library which provides the fastest access to the right kind of information in nano-seconds of time to end-user at any time and at any place in the world. The Internet has become the most extensively used information source that empowers the average person to get in roaming with the latest information. Today's users can no longer depend on conventional information sources to cope with the latest developments in their respective fields.

2. Objectives of the study

The broad objective of the study in to determine the use pf internet by teaching faculty of all women's College affiliated to Karnataka State women's university Bijapur .

The specific objectives of the study are

- To study the use of the internet by the faculty and examine the level of internet literacy among the teaching faculty of women's College.
- To study the various internet resources and services used by the respondents on the internet for various activities of teaching learning and research.
- To identity the different purpose for which the internet is used by faculty.To examine the impact of internet on various activities like teaching learning and research.
- To understand and the opinion of teaching faculty about internet technology in pursuance of their academic & research endeavor.

3. Methodology

The investigator began to study through literature search LISA data base was used as a source of this purpose. The primary data was collected through questionnaire Random sampling methods was used for collection of data from the users. The questionnaire meant for users was to seek their opinion about the availability of internet services in their colleges and its use. Faculties of Women's colleges of Karnataka state women's university represented the target population for this study. The statistical table graphs were used for clarity. Finally the out come is presented in the form of report.

Users	Total Questionnaires distributed	Users Responded	%
Faculty	625	475	76.1%

Table 1: Colleges affiliated to Karnataka State Women's University, Bijapur

Colleges	Number
Bagalkot	6
Belgaum	6
Bellary	4
Bidar	8
Bijapur	5
Dharwad	6
Gadag	2
Gulbarga	18
Haveri	6
Hospet	1
Karwar	2
Koppal	2
Raichur	5
Total	**70**

Table 1 shows district wise affiliation of Colleges affiliated to Karnataka State Women's University, Bijapur. It is found that Gulbarga distract has highest women's colleges of 18 numbers having affiliated to Karnataka State Women's university, Bijapur and is followed by Bidar district (8 Numbers),

Table 2: Internet facility in Colleges

Internet facility	College	College LIbrary
Yes	65 (92.8%)	51 (72.8%)
No	5 (7.1%)	19 (27.1%)
Total	70	70

Internet facility is available in 51 colleges out of 70 colleges affiliated to Karnataka State Women's university that accounts to 92.8% while 51 college libraries do have Internet facility out of 70 college libraries i.e. 72.8% (Table)

Table 3: Type of Internet connectivity

Type of Internet connectivity	College	Percent
No connectivity	5	7.1%
Dial up	17	24.2%
Broadband	48	68.5%
Total	70	100%

Majority of colleges have broadband Internet connectivity (68.5%) and one fourth of colleges have dial up connectivity and none of them dedicated leased line connectivity in the colleges affiliated to Karnataka State Women's university (Table 3).

Table 4: Distribution of users

Users	Total Questionnaires distributed	Users Responded	%
Faculty	625	475	76.1%

As on 2011, 70 women's colleges are affiliated Karnataka State Women's university and all the colleges with Internet facility are covered in the study. On an average, 8-10 teaching faculty are covered to determine the use of Internet in women's colleges affiliated to Karnataka State Women's university. 475 teaching faculty are covered for the present research project. Although a total of 625 users are intended to cover in the research project, but only 475 responded with 76% of feedback. (Table 4)

Table 5: Age of the Users

Age	Number	%
31-40 years	371	78.1%
41-50 years	99	20.8%
51 years and above	5	1.5%
Total	**475**	**100**

Majority of the users covered in the study are under 31 to 40 years of age group (78.1%). and 20.8% belongs to 41 to 50 years of age. However very less percent of users covered in the study are above 51years of age (Table 5)

Table 6: Use of computers

Use of computers	Number	Percentage
Yes	475	100
No	-	-
Total	**475**	**100**

If Yes, frequency of using Computers		
Daily	116	24.4
Weekly	218	45.9
Fortnightly	75	15.7
Sometimes	66	13.8

All the users in the study use computers (100%). Among them, 24.4% of users indicated using computers daily and 45.9% of users use the computers weekly and 15.7% fortnightly. However, 13.8% of users indicated that they use computers sometimes as and when requires (Table 6)

Table 7: Use of Internet

Use of Internet	Number	Percentage
Yes	**475**	**100**
No	---------	---------
Total	**475**	**100%**

Table 7 shows that all the study use Internet in the colleges (100%).

Table 8: Access to Internet Facility

Access to Internet	Number	Percentage
Home	64	13.4
College Library	101	21.2
Browsing Centre	103	21.6
Computer Centre	207	43.5

Although all the users use Internet facility, but 43.5% of users use Internet at college computer centre and 21.6% use Internet facility from college library and private browsing centre. Only 13.4% of users access Internet facility from home. (Table 8).

Table 9: Length of using Internet service

Using Internet since	Number	Percentage
1-2 years	300	63.1
3-4 years	115	24.3
5-6 years	36	7.5
7 years and above	24	5.1
Total	**475**	

Majority of the users use Internet for the last 1-2 years (63.1%) and 24.2% of users mentioned that they use Internet between 3 and four years. Only 7.5% of users are using Internet from 5-6 years and 5% of users are using Internet for more than 7 years (Table,9)

Table 10: Time spent on Internet per day

Using Internet since	Number	%
1 hour	358	75.4
2 hour	91	19.2

3 hour	16	3.3
4 hour and more	10	2.1
Total	475	100

More than three fourth of users, on an average, use Internet for one hour per day (75.4%). 19.2% of users spend 2 hours per day on surfing Internet. However the time spent between 3 and more hours on Internet is very negligible (Table 10).

Table 11: Satisfaction of Internet timings in College Library

Satisfaction of Internet timings in college library	Number	%
Yes	51	10.7
No	424	89.3
Total	**475**	**100**

It is found from earlier table that 72.9% have Internet facility in college libraries, but the results found from table 11 that 89.3% of users are not satisfied with Internet timings in college library. The main reasons are due to lack of sufficient Internet terminals and results found that just 1-2 computers are available are spared for users to surf the Internet facility in colleges affiliated to Karnataka state Women's university.

Table 12 shows the purpose of using Internet by teaching faculty of colleges affiliated to Karnataka state Women's university, Bijapur.

Table 12: Purpose of using Internet

Purpose	Faculty (N=475)	
	Number	%
Accessing academic information	470	98.9
To support lesson plans/ course materials	405	85.2
Research/projects	265	55.7
Communication (e-mail)	475	100
Accessing e-journal	206	43.3
Means of entertainment	265	55.7

The main purpose of using Internet by teaching faculty is for Accessing academic information (98.9%) 85.2% of them use Internet to support lesson plans/ course materials and they use Internet for using Research /projects information to the extent of 55.7% .

Table 13 reveals that 94.5% of the users strongly agree that Internet is very unique service.

Table 13: Opinion about Internet technology

Opinion – Internet	Strongly agree	Agree	Disagree
Ease of use	355-(74.7%)	59 (12.4%)	63(13.2%)
Better accessibility	249-(52.4%)	40 (8.4%)	138 (29%)
Speed and quickness	199-(41.8%)	90 (18.9%)	187 (39.3%)
Uniqueness	449-(94.5%)	23 (4.8%)	-----
Very useful for academics	429-(90.3%)	15(3.1%)	30 (6.3%)
Reliability in quality of information	252-(53. %)	197 (41.4%)	10 (2.1%)
Organized information	249-(52.4%)	186 (39.1%)	58 (12.2%)
Information content-comprehensive	406-(85.4%)	55 (11.5%)	17 (3.5%)
Time saving	355-(74.7%)	103 (21.6%)	18 (3.7%)

90.3% of users strongly agree that Internet is very useful for academics, 85.4% indicated Information content on the Internet is comprehensive and about three fourth strongly agree that Internet is time saving and easy to use (74.7%) On the other hand, 39.3% of users disagree that Internet is quite speedy and quickness. This reveals the fact of Internet accessibility among users in college library with respect to Internet facility, bandwidth, training and orientation about Internet technology in colleges affiliated to Karnataka State Women's University, Bijapur is lacking and needs urgent attention.

Table 14: Methods of finding information on the Internet

Method of finding information on Internet	Number	Percentage
Search engines	475	100%
Browsing websites regularly	122	25.6%
Using logical operation	63	13.2%
Personal communication	63	13.2%
Publications	12	2.5%
Follow up references	28	5.8%
Interaction with colleagues	60	12.6%

Table 15: Popular Search engines

Popular Search engines	Number	Percentage
Yahoo	304	64
Rediff	340	71.5
Google	475	100
Khoj	70	14.7
Bing	52	10.9
Altavista	10	2.1

Among various search engines Google is the most popular search engine (100%) used by them followed by Rediff mail & Yahoo ie (71.5% and 64%) very less % used like khoj Bing Altavista (Table 15)

Table 16: Use of Information sources and services on Internet

Information sources and services on Internet	Faculty (N=475)	
	Number	Percentage
Current information	475	100
E-mail	475	100
WWW	401	84.4
Discussion forum	195	41
Telnet	10	2.1
FTP	25	5.2
Chatting	215	45.2
FAQs	35	7.3
Bulletin Board Service	5	1.1

Table 17: Extent of satisfaction with Internet facility extended in College/ Library

Extent of satisfaction	Number	Percentage
To a larger extent	102	7.36
To some extent	270	56.8
Not at all	177	37.26
Total	475	100

Table 18: Problems faced in using Internet

Problems faced	Number	Percentage
Lack of hardware/ software knowledge	177	37.2
Lack of training	267	56.2
Lack of time	239	49.85%
Lack of patience	290	61.5%
Slow in access	355	74.7%
Difficulty in finding relevant information	238	50.1%

4. Summary And Findings

- Gulbarga distract has highest women's colleges of 18 numbers having affiliated to Karnataka State Women's university, Bijapur.
- 475 teaching faculty covered for the present research project. Although a total of 625users are intended to cover in the research project, with 81.4% of feedback.
- Internet facility is available in 65 colleges out of70 colleges affiliated to Karnataka State Women's university that accounts and 51 college libraries do have Internet facility.
- Majority of colleges have broadband Internet connectivity (68.5%).

- Majority of the users covered in the study are under 30-40 years of age group (78.1%).
- All the users in the study use computers (100%).24.4% of users indicated using computers daily and 45.9% of users use the computers weekly.
- All the users in the study use Internet (100%).
- 43.5% of users use Internet at college computer centre and 21.2% use Internet facility from college Library.
- Majority of the users use Internet for the last 1-2 years (63.1%).
- More than three fourth of users, on an average, use Internet for one hour per day (75.4%).
- 89.3% of users are not satisfied with Internet timings in college library.
- The main purpose of using Internet by teaching faculty is for Accessing academic information (98.9%)
- 90.3% of users strongly agree that Internet is very useful for academics, 85.4% indicated Information content on the Internet is comprehensive. 39.3% of users disagree that Internet is quite speedy and quickness.
- Search engines have been used by all the users of the study for finding information on the Internet
- Google is the most popular search engine (100%) and Rediff (71.5%) and Yahoo (64%).

5. Recommendations for the Study

An attempt has been made to address several sets of overall recommendations based on the findings and users suggestions of the study that with a motto promote better use of Internet women's colleges.

- Developing Technology Culture:
- Creating awareness about the worthiness of Internet usage.
- Availability of strong technological infrastructure
- Accessibility to Internet services
- Internet in Educational curriculum
- Education and Training Program
- Monitoring Internet use for Academic
- Ensuring the speed of Internet
- Internet Service: And integrated part of Library service

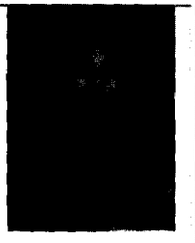
6. Conclusion

Besides, E-mail, WWW and Online databases, libraries should also explore the Internet tools like Discussion forums, Newsgroups, FTP, Telnet, Freeware /Shareware programs, Interactive discussion for the modernization of library activities and services and e-journals and databases from UGC Infonet consortia. Libraries have to develop better technological infrastructure and create integrated information system through campus networking in order to pool and share the quality resources and services. Librarians have

been spurred by technological developments to become more efficient organizers in addition to assuming new roles such as, intermediary. It is therefore, incorporating Internet technology as an information and research tool and evaluate at regular intervals for optimization of Internet resources and services to the users of Library. Provision for continual education and training programmers as a regular feature to explore various Internet services and tools and develop skills of searching and finding needed information and thereby build technological culture among users of colleges..

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Knowledge Enhancing Innovative Practices in SDM College Library

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Abstract

This paper provides holistic information of best practices in college libraries. In the changing scenario, the innovative practices have becoming the motivational factors for the users. In this paper, S.D.M. College Library has been initiated best innovative practices; an attempt has been made to highlight the innovative practices adopted in the mode of delivery of services. It reviews the attempts made by NAAC in India to develop best practices/guidelines for libraries and/or for specific services and also discussed the characteristics and its advantages of these practices in our library to enhance the skills and knowledge.

Keywords: Knowledge society, Best practices, College library, Information centre, NAAC

1. Introduction

The Academic Libraries in the country are on the threshold of facing big challenges as a result of globalization and liberalization trends in higher and professional education. The higher and professional education is moving more and more towards privatization. The Libraries in this regard have become part of this strategy. Best Practices are the outcome of local requirement and available infrastructure. However, some of these can be replicated elsewhere in similar environment. There are many factors motivating the library staff to introduce innovative services, what are known as "Best Practices" We have identified and adopted some of the best practices in the S.D.M. College library.

2. Objectives of the best practices in the college library

The main Objectives of the Best Practices can be summarized as follows:

- Management of the overall change process to close the gap between an existing practice of the institution and that of the best-in-class institutions
- To create an environment and provide facilities conducive to study and research.
- To provide access to the library's collections in various formats most useful to clientele both on and off the campus.
- To orient users to become fully developing lifelong retrievers, evaluators, and users of information.
- To provide services that facilitates the use of library and acquires knowledge.
- To facilitate and promote reading habits of user community through print and electronic media.

3. Identification of best practices

The identification of best practices depends on College Mission, Vision & Goals; nature of users, global context & local relevance, competencies of staff, students, infrastructure and governance requirements. As per the International Network of Quality Assurance Agencies in Higher Education has suggested following guidelines for the

identification and application of good practices: i). Promote quality of performance ii). Be dynamic and revisited periodically iii). Recognize diversity and cultural and historical contexts & iv). Not lead to dominance of one specific view or approach.

As per the guideline of NAAC, a set of best practices followed in academic libraries and presented under the following four broad areas: i) Management and Administration of Library, ii) Collection and Services, iii) Extent of User Services and IV) Use of Technology.

4. Implementation and Institutionalization of Best Practices:

The implementation is really the challenge. There may be some genuine limitations for librarians. 'Professionalism' may lead us to find problems in every solution. The implementation strategies shall include planning, resource mobilization, capacity building, monitoring, evaluation, application of best practice. The implementation approach focuses more on performance than on promises. But many are imaginary. Instead of finding solutions to problems,

Institutionalization is the process of making the best practices an integral part of the college functioning. It has been observed that many best practices are College-specific and individual managed where individual happens to be the Principal or head of the College. However such a practice is formalized as an essential requirement, it will continue to be pursued and implemented without any hindrance. Institutionalization is an effort to make it more college centric than leader or individual centric and also to make the best practices as a normal practice.

5. Innovative Best Practices of SDMC Library

However, the above set of best practices for college libraries prepared and suggested by INQAA and NAAC cannot be termed as the last word. The following best practices have been introduced in S.D.M.C. Library:

Best practices are mainly categorized in to 5 divisions

a) User Services.
b) Resource Development & Management.
c) ICT-enabled services/Technology used.
d) Users Empowerment, Information Literacy.
e) Other best activities.

A. User services

A.1. Library Hours or Timings: Library will be kept open from 8.00a.m. to 8-00 p.m. (i.e. 12 hours) on all working days from Monday to Friday. On Saturday Library will open from 8-00a.m. to 4.30p.m (8 hour & 30 minutes). Timings are extended during exams to suit the needs of students

A.2. Membership: Library Services Extended to Sister Institution, KSOU, IGNOU, and publics. The main aim of the practice is as Dr. S.R. Ranganathan says that Books are for use. Here an attempt to transform the readers from general reading to critical thinking.

A.3. Circulation: Circulation is one of the most important services of the library, over 200 loan transactions and over 500 over night transactions are carried out every day. The entire process of issue and return of books is automated. All students, faculty and staff have been provided with multi-purpose, bar-coded identity card which also serves as the library card. Similarly, all documents are bar-coded and the entire process of issuing books requires scanning of two bar-codes taking not more than few seconds.

A.4. Reference Service: A service that connects users with the library and helps them to make full use of the resources. It includes guidance in the use of information resources and services, help in locating required documents, instructions for accessing on-line library resource including OPAC, e-journals, e-books, databases, multimedia products etc. This is the human interface between library and its users.

A.5. Document Delivery Service: The library provides free photocopying service to the faculty of the Institute. An external outfit operating within the premises of the library offers the service on payment to students, staff and public users.

A.6. Book Bank: The library maintains a book bank comprising mainly of undergraduate level text books to help students belonging to weaker sections of the society. The books (2-3) from this collection are issued for a period of one semester to the SC/ST/Sports, as well as to economically weaker students.

A.7. Display of statistical data: Displaying every statistical data of the library services and collection statistics on the Library wall, users will take a note of it for their use

A.8. Open Access system: open access system is also one of the best practices in the college library; users can go directly to the stack and select the books of their choice.

B. Resource Development and Management

B.1 Collection development: In the library domain collection development is one of the basic and important functions of a library. But due to the impact of internet and World Wide Web abundance of information is available in different types and formats. Earlier college librarians were depending only on printed books and journals for providing their services. Libraries were hardly pressed for budget they did not purchase more number of books and journals which are life blood of a researcher, but due to the open access initiative, free e-books and e-journals are heavily available. If a college library has a computer and internet facility besides will power, it can easily provide these resources to its end user.

B.2.Exhibitions: Book Exhibition cum Sale – organizing the event annually in collaboration with different publishers and book sellers.

B.3.Library committee: The library has constituted a special committee called Learning Resource Committee. This is for the purpose of developing and upgrading the library activities.

B.4.Book Selection from Students: This is one of our innovative practices; students are welcome to participate in the 'Book selection' process. During user education programme students are being informed of the ways in which they can bring to the notice

of the library authorities about the books of their choice. Books recommended by the students are purchased on a priority basis.

B.5.Resource Sharing (Inter-library loan): The library has excellent resource sharing arrangements with Mangalore University, American Library, Chennai, British Library, Bangalore, Sri Dharmasrtala Cultural & Research Foundation, Dharmastala; for exchange of books, journals, photocopies and non book materials for the mutual benefit of our users. A customized solution for accessing and sharing with personal collection of the individual personal library facilitates requests for books and articles from the holding library.

B.6.Stock verification: This is also one of the best practices in the college library every year we conduct library stock verification forming a separate committee.

B.7.Preservation of books: Besides the acquisition of new books, preservation of the existing books is also important. Care is taken to keep the library dust free during summer and damp free during monsoon. The book preservation lacquer 'ballistol' is being sprayed twice a year and to keep books insects free.

C. ICT-enabled services/Use of Technology

C.1. Learning objectives: Understand how conventional Library and Information Services (LIS) can be delivered more efficiently and effectively by using Information and Communication Technologies (ICT). Familiarize users with the new ICT enabled LIS, particularly in a web based environment, and Generally understand how common ICT tools can be applied to provide new innovative services

C.2. Library Automation: Library automation is the application of ICT in library operations and services. Automation of the Library activities in acquisitions, cataloguing, circulation and serial management saves the time of the library staff as well as users.

Library is fully automated by **EERPMS** in- house developed software, which is for the purpose of Data Entry, information storage, retrieval, circulation, Stock verification, OPAC, Report Generate, Bar-coded books and Student ID Scan etc.

C.3. Digital library: DSpace digital library software is using to build up digital collection. At present student Research Project, More than 1000 CAL packages, e-Journals, E-Books and information related to advances in Science and Technology are collected & allow the library users to browse those information

C. 4. Internet Access: A separate section for internet browsing with 48 computers , LAN facility and Library blog (http://www.sdmcujire.in/library) also provided for easy and quick access of information for users need.

D. Users empowerment, Information literacy

D.1.User Education/Orientation Program: User Education' is one of the services provided with top priority. In the beginning students are in awe of the library and hesitate to venture inside and make use of it. Many rules and regulations even in an 'open Access Library' have to be properly understood by the students. The programme helps the user to

understanding the day to day functions of the library and makes him aware of various services provided in the college. It intends to train the user to read intelligently, and make the best use of facilities available in the library in his academic activities and enrich his/her knowledge.

D.2.Library Brochure: 'Know your library' - Introduced Library Broacher in the college. This guide provides information on Library rules and regulations, including detailed procedures on the use of the resources and facilities of the Library. Although we have tried to include all the essential information that users need to know about the Library, and how to use it effectively

D.3.Web Based Instruction: Web-based instructions is an innovative approach to distance learning in which computer-based training is transformed by the technologies and methodologies of the World Wide Web (WWW), the Internet, and Intranets It allows self-directed self-paced instruction in any topic. Web-based instruction "encompasses the integrated design and delivery of instructional resources via the World Wide Web and promotes student engagement with text-based, hypermedia, multimedia, and collaborative resources for the purposes of teaching and learning

E. Other best activities/Special activities in the library

E.1. Student's information sharing board: Pooling information about a specified topic by students, this is one of the innovative practices of the college library. In the library one corner or place keeping a board notifying the topic/subject on it by library staff. The subject will be changed for every week, students would write Proper Information on particular subject, and also should mention the Name, Class & Roll Number. This is one of the best practices to enrich their knowledge.

E.2. Mandatory usage: Each and every student of the college has to compulsorily complete minimum of 10 hours per month or 30 hours per semester of library usage. Who fails to complete this mandatory usage will be ask to give explanation to the concern dean. It is observed that reluctant readers are gradually becoming regular (good) library users.

E.3. Library utilization index: A statistical report is generated in the library software which enables us to know the combination wise usage by students. The details are displayed on the library notice board; in bring competition in library usage among the students.

E.4.Tips for Research Students: The library helps the students for their research projects by assisting them in searching the books of research interest.

E.5.Tips to the Department: Maintaining separate book for note-down the articles published in different periodicals, to inform the concerned departments.

E.6. Best Readers Recognition: To Appreciate and encourage the optimum use of the library. We are following special recognition/prices.

a) **Voracious Reader Recognition:** Students using the library extensively and in a well-disciplined manner are encouraged by recognizing them as the voracious reader of the year.

b) **Best Library User:** Every month recognizing students as best readers for their extensive and disciplined use of library and also rewarding with momentous.

E.7. Competitive Examination Study Corner: For Civil Services & Competitive Exam aspirants extended the support by creating the new section.

E.8. Display of New Arrivals: To display the arrivals of new books.

E.9. Current Awareness Service: Maintain reports articles and patents etc. on current issues.

E.10. Selective Dissemination of Information: To give selected information periodically related to different departments.

E.11. What is Special Today: To display the articles on events and information related to the specific days regularly. Under this service information about specific days like World AIDS day, Mother Day, World wild life week etc. are collected from department sources and exhibited prominently on the notice board

E.12. News Paper Clippings: Collect paper clipping on Science & Technology, Education, Business and Health.

E.13. Book Exhibitions: To conduct exhibitions of books on different topics and special occasions. In this academic year 55 Book Exhibitions conducted by library in various occasions pertain to a particular theme. Here the information about that particular theme, articles of the particular theme and books related to that theme are displayed in a separate table. So that students/users come to know the special theme and aware of different types of books in the library and the main purpose of these exhibitions is that the books in a rack are make best used by the users.

The above best practices have been followed in our library for providing better services to our patrons.

6. Changes in User Expectations

User is one of the important key components of the library. Academic libraries are mainly exists to serve the students and faculties of its parent institution by fulfilling their information needs. Today user's expectations and their information seeking behavior have been changed due to the impact of technology in all spheres of activities. They aware about the benefits of those best practices in locating and retrieving their needed information. Therefore, the expectations of the user are very high.

Evidence for the above practice success

A moderate effort on the part of the institution and the library to get maximum out of maximum resources in their respective fields in the college library is one of the prime areas. Have really made them happy? Yes, which had proved in the last 2 accreditations by NAAC, College accredited with 'A' in recent re-accreditation at 'A' with CGPA of 3.58 out of 4. Also, college with CPE, FJEI, UGC Autonomy status and Bio-diversity award. It is increase

in the confidence level of students and gain the effective and skillful knowledge by exchanging their thoughts and ideas to put into practice.

7. Conclusion

A best practice is a practice which paves the way for enhancing an existing function and helps in effective implementation or use of the process. Use of technology in designing and delivering the information products and services in a library has always yielded good results. Automation of all in-house operations in academic libraries with bar-coding, user identity and web OPAC facilities is a best practice in totality of library services. Effective implementation of user education/ awareness programs with the new techniques and tools will also be a best practice in extent of use of library services. Developing digital repositories with subject content open sources, institutional information and customizing it to internal requirements with remote access is one of the globally adopted best practices in the college library. It concludes that the best practices are not a one time solution, but it is a continuous process.

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Marketing of Library and Information Services: Are Libraries in the State of Goa on the Right Track?

Anuradha V **Gopakumar V**

Abstract

This article gives an overview of the efforts of libraries in the state of Goa to market their library and information services. It discusses various techniques adapted by these libraries to market their products and services. It also discusses various modern marketing strategies used by means of web-pages and other forms of Internet-based techniques.

Keywords: Marketing, Marketing in libraries LIS, State libraries, Goa

1. Introduction

Success of any library depends on satisfying the wants and needs of its customers. Providing products and services desired by the users is the mantra of successful library. Turn of 21st century has brought new trends in the world of information, especially in information communication. Today libraries are struggling hard to survive in an on-line environment, where people find it convenient to search information on the internet rather than going to a library. They are being challenged than never before to prove their relevance to the present generation. The quality of resources and services offered by the libraries will attract users to the libraries. However, it is also equally important that the users are enlightened on the information sources and the services offered by the library and how to make use of these. Only if the libraries market themselves properly, they will continue to hold the users interest about libraries. Marketing helps in identifying customer needs, informing them about the products and services, facilitate access and use of information.

2. Why marketing in libraries?

In the context of a library, marketing is essential to raise awareness about the resources and services available in the library and to make them understand how to use these for their benefit. Marketing is not applied in library to increase profit but to increase user satisfaction and thereby to justify the utilization of funds in order to get more funds. Customer is the focal point of marketing and all the marketing techniques are customer oriented. The same is true with libraries also. Customer is the center of a library and he is the reason for their existence. A library design and develop all resources and services to meet its customer needs and expectations. In library marketing starts with identifying customers and their need and continues till such needs are met fully.

3. Marketing in libraries of Goa

Goa is a small state. There are many established public, academic and special

libraries in the state. They are all part of an institution or organization and much of their activities of promoting the library service are directed towards special target groups like the students, faculty, researchers, scientists or the public in general. The marketing activities of different types of libraries in Goa are described in the following pages.

3.1. National Institute of Oceanography (NIO) Library

The NIO library has been recognized as the National Information Center for Marine Sciences (NICMAS) since mid 90s. While catering to the needs of the users from within the institute it is also committed to serve the marine information seekers within and outside India. The activities of the library are planned keeping the scientists and researchers' information needs into mind.

- **Intranet Notice Board:** This is the medium for quick communication to the users. Information on the trial access to the journals and notices are put on this board.
- **Library server:** The library has its own server. All the resources of the library, both in print and digital form are available on the library catalogue. Links to all electronic resources are provided through catalogue itself. The library website is available on the intranet.
- Once in a year library organizes meetings with the research scholars. Here they are given training on how to search for information, about Boolean operators etc. These meetings have become very successful. The research scholars are trained well in information literacy skills and they make good use of the resources of the library.
- Libraries resources and services are well appreciated by its users. Library has gained popularity through word of mouth. It gets marketed on its own through its users.
- The NIO library is very rich on oceanographic resources as compared to other institutions on the subject. The library is recognized as a source of information on marine related information and information seekers from all the nook and corner of the country make use of this library. The library's presence is available on the internet at www.nio.org and the website is very informative giving details on books and technical reports, serial holdings maps and reprints.
- Digital Repository Service: DRS@nio tried to collect, preserve and disseminate different institutional publications (journal article, conference proceedings articles, technical reports, thesis, dissertations etc. one can search, browse and access publications of NIO from this collection.
- Under NIO- Research Publications- Articles, the author, title and abstract of articles with a facility to request for reprint is provided.
- The library provides all the information on the ongoing projects to the management. It has scanned all the annual reports, cruiz reports, publications etc. which is more than 6000 records.
- NICMAS is open for collaborative activities and accept project contracts on the information management of the organizations. To mention a few activities, it is an Aquatic Sciences and Fisheries Abstracts Center for India, Maintains Indian Mangroves database and is recognized as a National Information Center for NISSAT.

3.2 Goa University Library

The university library has been adopting various measures to be in touch with the users and make them aware of the resources and facilities of the library. Some of the marketing techniques adopted by the university library are detailed below.

1. Orientation for freshmen

Every year the library conducts orientation sessions and information literacy classes for the newly admitted students of each department separately. They will be given training in the search of the OPAC and the e-journals. Then they will be taken to the various sections of the library. This process keeps the students aware of the facilities and resources available in the library. They will become familiar with the staff of the library too.

2. Documentation bulletin

Library publishes a documentation bulletin listing articles from the journals received in the library with author and subject index. The same is published over the intranet in pdf format. This attracts the faculty and research scholars to the content of the print journals available in the library.

3. Intranet messages

Intranet messages over e-mail are sent from the library regarding the newly added facilities, new websites and other information. This service also has been used well by the clientele of the Goa University Library.

4. Use of digital signage

University has a digital signage system in the campus whereby we can provide multimedia information in the campus through 25 wide screen LCD TV Screens. This is monitored by the computer centre of the university. Library uses this facility to advertise about the various programs of the library.

5. University Bulletin

The Goa University publishes a news bulletin every month. The list of new additions to the library is a compulsory component of this bulletin. We collect reviews of the books from the Internet on the newly added books and provide along with this list.

6. Display of new additions

Library exhibits the newly added books in a separate rack, which is a conventional method of marketing of the library resources. This attracts the visitors of the library.

7. User participation in library marketing

The Goa University library has introduced the "Elsevier Student Ambassador Program". This program envisages the training of students and research scholars on the use of the Elsevier Science Direct journals. This project had good results and the library could conduct information literacy sessions along with these sessions. The two students who were selected as ambassadors were paid honorarium by the Elsevier Company for three months. The success of the program has forced the company to extend the program

for another three months. This is good model of library marketing which other academic libraries can adopt.

4. The State Central Library of Goa

It is a state of art library and the very ambiance and facilities of the library attract the public of Goa to the library. Locally this public library is doing a good job in telling their users as well as the non –users about their services in different ways.

- The library is preparing a formal documentary on the library which will be telecasted on all the local TV channels in Goa. This is a good way of promoting the library locally as the visual media has strong influence on the people. Along with the regular users of the library, it also reaches those who do not visit the library frequently.
- The library frequently visible in local press. All the editors of the local news papers were called and briefed about the library. The library, being a government organization, maintains good contact with the local press and brings the good news to the people through papers. The local newspapers and magazines provide information about the activities of the library from time to time.
- A letter along with the printed brochure describing all the resources and facilities available in the library, is send to all the schools, colleges, higher-secondary schools and public libraries.
- The library is planning to show educational as well as entertaining films for kids. The library has a collection of more than 1000 such CDs.
- The library markets itself through a lot of extension activities like organizing exhibitions on different topic on different occasions, conducting elocution competitions, essay writing, organizing book reviews where by children as well as adults are encouraged to visit the library.
- The public library in Goa is using Internet quite consciously to promote their facilities. Their web page www.goacentrallibrary.gov.in is very informative giving details of their collections, rare books, rules, staff contacts, list of public libraries in Goa, different schemes of the library and so on.
- The whole collection of the library is online. This lists all their collections like books, reports, compact disks, manuscripts, microfilms, photographs, maps, charts and articles data.
- The public library will soon start mobile libraries. Books from State Central Library will be carried in a van to different locations in the state. Prior intimation will be given to the members regarding the dates and the timing of this service. This is an attempt to reach out to the public who are remotely located.
- The library is planning to send SMS on newly added books on the topics of interest of their members. This will encourage the public to use the library, as they will feel personal touch.

5. BITS, Pilani - K.K. Birla Goa Campus Library

This is a library attached to the institution providing professional education in engineering and sciences. All the resources and services of the library are planned to satisfy the information needs and interests of its users. The library tries to bring awareness about its resources and services using the following techniques.

- Internet is used extensively to show what services the library offer and what material they have. This certainly is a method in itself of promoting the library. The website www.bits-goa.ac.in/library is useful to know what all services the library provides to its users. All the resources of the library are listed here with links.
- The catalogue of the resources of the library is available online on the intranet which can be viewed from anyplace in the campus including the residences. All main areas of campus are Wi-Fi enabled and the users can access library through their laptops.
- The library subscribes a number of online journals, journal databases and e-books which can be accessed thought the campus.
- To popularize use of print journals, the library scans title pages of the journals and the same is linked to the journal name on the library website.
- For newly joined students, library orientation is given for every new batch of students. A help-desk is provided at the entrance of the library to explain the students about the library.
- All new arrivals are displayed. Though this is an old method, it is found to be very effective. Most of the users of the library stop here to have a look at these books. Regular mails are sent listing newly added books to all users. In addition to this, arrival of books is intimated to the person who recommends the book for purchase.
- There are clubs formed on the campus like MATRIX (Mind and Thought in Radical Information Exchange) which often holds discussions and reviews on popular books.
- To encourage faculty children to use the library, a special section for children has been developed, where story books as well as educational books are organized.

From the above discussion it can be observed that multiple techniques have been used by the libraries in Goa to promote their resources and services. These included brochures, local press, displays and websites. Other avenues used were meetings, training sessions and exhibitions at various occasions. Outreach services in the form of mobile libraries and various competitions also are part of marketing mechanism.

6. Conclusion

It can be generally noted that most of the libraries in Goa depend heavily on traditional tools for marketing their services. Libraries are putting efforts to make their websites more informative and attractive so that visibility of the libraries is increased.

Their promotion activities consisted of mixed aspects of marketing process. Though the libraries lacked concrete dynamic marketing strategies they are trying to adapt themselves to the current marketing practices.

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Marketing of Library Products and Services: An Overview

Veerabasavaiah M **Padmamma S**

Abstract

Marketing means to create the demand for and interest in the use of the library resources and services among the users. Its helps the facilities need perception and understanding about the importance of information and there by creates demand for information. Marketing information services and products is that helps to improve the images of library and status of information providers. Thus in fast changing information society, marketing definitely helps in handling change successfully and creating of sustaining positive image of profession. Marketing of information services and products begins with the assessment of users needs and ends with the satisfaction of users. The capabilities of conglomerated from knowledge skills and competencies are to treat knowledge economy through outstanding education and training system. This paper focuses on Introduction, concept of marketing and its definition, aims, benefits, Need, Library Products and Services, Marketing activities, Professional skills and competencies involved in Library and Information centers and Conclusion.

Keywords: Marketing, Benefits of marketing, Library products, services, Marketing activities, Professional skills

1. Introduction

The term marketing is seen to be associated (by most people) with the function peculiar to business firms, the experts view marketing as a pervasive societal activity, which applies equally well to non business activities like education, health service, library service etc. Marketing of services and other intangibles is considered as valid as the marketing of products and commodities, as the key feature of the marketing model is its emphasis not on maximizing profits, but on sensitively serving and satisfying human needs. Here the client-customer-satisfaction has been perceived as the dominant goal of marketing, which would appear in perfect harmony with the service ideals of non-profit organizations like the library.

2. Concept of Marketing

Marketing has been one of the world's oldest professions. The study of marketing started only in the 1920s. Starting from the barter stage, it has passed through the different stages like money as common medium for exchange, industrial revolution resulting in transitions from sellers to buyer's market. Perhaps, one can be successful in marketing by giving the customer what he wants at the right price and by making it available at the right place and at the right quantity. In essence, marketing covers all those activities involved in providing customer satisfaction and making a profit for the manufacturer who makes use of available resources to the maximum. Marketing starts with the customer – what he wants to have and ends with the customer getting what he wants.

2.1 Definition of Marketing

According to *Philip Kotler* defines "Marketing as serious and systematic activities, concern with the effective management by an organization of its exchange relationship with its various markets and publics. The key feature of the marketing approach is its prime focus on satisfying needs of the clientele" (6).

Brech defines "Marketing is the process of determining consumer demand for a product or service, motivating its sale and distributing it into ultimate consumption at a profit". *The American marketing association* defines "Marketing as those activities which direct the flow of goods and services from production to consumption". *International Labor Organization* defines that "Marketing is the performance by an enterprises of all the activities required in order to create, promote, and distribute products in accordance with the present or potential customers demand and the firms ability to product".

3. Aims of Marketing

The aims of marketing are

- Identification of the client base
- Determination of the needs, wants and Satisfaction levels, and
- Fulfillment of the same through designing and delivering appropriate products and / or Services more effectively.

5. Need for marketing of library services

Planning for effective and efficient operations are the key challenges faced by the Library professionals in terms of following

- Limited financial resources and information Explosion
- Greater demand of the user
- Effect of free economy
- Less usage of the available resources
- Changing concept of library and information services
- The present information services which are not user friendly
- More efforts and imagination required in marketing and selling of information

4. Benefits of Marketing

The marketing of information products and services shall be beneficial in the following ways

- Improve the quality of library services.
- Gain management support and commitment.
- Expand the professional role of the librarians and information scientists.
- Manage the affairs more effectively.
- Gives general information to the users about the library, the information services and products.

- Encourages a general awareness and appreciation of services of the library and information centre.
- Ensures economic use of major resources.
- Improve visibility of the library and information centers.

6. Library products and services

The Library's success depends upon the quality and excellence of its products. The products that libraries provide are varied, ever changing and consist of core, tangible and augmented products. It includes all of the goods and services made available through the library. Products might be electronic information or access to information actually held by other libraries. Further, a product consists of both existing and potential services and materials.

Library products and services may include

- Bibliographies, Library catalogues, Abstracting services, Translation services
- Current awareness services, Digest services
- Document backup services, Indexing services
- Reprography services, Selective dissemination of information services and

7. Marketing activities

They are as fallows

7.1. Marketing Analysis: provides the organization with information necessary for analysis of the structure and behavior of the market. It consists of determining the actual or potential clients of the organizations, segregating the market into meaningful segments and defining the needs, wants and characteristics of the organization chosen target markets.

7.2 Marketing Mix: The marketing mix consists of 4Ps:

7.2.1 Product: The product is the heart of the system. It may be associated with the materials (books, non-books materials, software etc.) Access channels (reference assistance, computer Searches etc.) and programmed (instructions, demonstrations films etc).

7.2.2 Price: Pricing of information services and products relatively a new concept. It has not considered seriously since library services were being provided "free". But, with the increased emphasis on accountability and self sufficiency in relation to resources it has become necessary to cost the various activities and to recover costs as much as possible.

7.2.3 Place: It is the channel that links product and consumer. When considering the distribution possibilities, it is important to remember that the product is removed not only in space from the location of the consumer, but also may be removed in time from when the consumer wishes to use it.

7.2.4 Promotion: It involves mechanisms by which the target groups are informed about the resources available, services and products offered by the library and information centre. Libraries and information centers have traditionally worked to satisfy the needs of their customers. But today more than ever, information professionals must be concerned with marketing their services within the organization in order to thrive. More alternative sources of information exist than ever before. Although that can mean information centers face increasing competition, it also presents an opportunity for corporate libraries to help users choose the right source among the growing number of services.

7.3. Marketing Segmentation: The selection of market segmentation strategy is vital if marketing programmed effective and efficient. Generally, the use of more than one segmentation variable is more effective though cost factor needs to be borne in mind. According to Hanan describe 3 steps i.e. subtraction process of marketing segmentation (i.e. segmenting the gross market according to its needs) second, segmenting each group of needier (to benefit they prefer for fulfilling their needs) and lastly segmenting the core of heavy users according to key demographic and environmental factors (to modify their needs and therefore influence the type of benefits they prefer). Marketing segmentation helps planning of other elements of marketing mix more meaningful and effectively.

7.4. Market Research: Its aims at providing better information with a view better serve the present and potential customers through understandings and identifying current problems and formulating better plans for the future. Several sophisticated techniques have been developed for analyzing customers and their needs. These cover products and services analysis, consumer information survey, attitude, motivation analysis, experimentation with controllable variables, forecasting demands for products and services and analysis of secondary sources of data.

The marketing research concerned with research on all factors which affects marketing management including such matters as advertising, effectiveness, consumer behavior, and all other factors relevant to marketing decision.

8. Professional Skills and Competencies

Information professional requires the following skills and competencies for marketing of information products and services.

- a belief in service and trying to achieve customer's satisfaction;
- a clear understanding of their organization's overall aims and objectives;
- an ability to assemble and interpret information for the benefit of the customer;
- good communication skills, both oral and written;
- Technical knowledge ,training skills, and ability to use the Internet
- Knowledge delivery mechanisms.
- Knowledge management
- Enthusiasm and commitment; and ability to take criticism, not always constructive.
- Perception of user needs and ability to obtain feedback from users

- Knowledge of various marketing strategies for promoting information skills and
- Economic aspects of information.

9. Conclusion

The user satisfaction is most important in library and information centers. It is the duty and responsibility of librarian to vide the required information to the user. The reputation of the library and information center is based on usages of library products, services and resources. In the present situation the information professionals have to play an important role to identify the users group and provide them necessary information not only within or out side the library. They have to adopt the various marketing techniques in the marketing of library products and services.

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Marketing Strategies for Promotion of Library Products and Services

Shivamurthy PM

Abstract

Librarians should be actively involved in marketing library products and services. This paper presents practical marketing strategies, with particular emphasis on the value of using electronic information resources and services. It also shows the link between promoting library services and raising the profile of the library.

Keywords: Library marketing, Strategies, Promotion, Services

1. Introduction

Marketing is frequently viewed as a set of strategies and techniques that belong to administrators outside of librarianship. However as librarians we are all involved in the process of marketing. The definition of marketing by Philip Kotler states: ``Marketing is the management process which identifies, anticipates and supplies customer requirements efficiently...''. Thus the essence of marketing involves finding out what the users want, then setting out to meet those needs. As librarians we all participate in this process of assessing our users' needs and trying to fulfill them. Thus, we are already marketing our library information skills. However, in order to do this effectively librarians need to embrace the total marketing function involving market research and analysis, service planning and promotion.

2. Market Research

Market research involves the ``systematic gathering, recording and analyzing of data'' relating to the demand for a service or product (Katz 1988). The parent organization needs to be analyzed in terms of funding sources, the contribution the library makes to the mission of the parent organization, resources available and the needs of the users. There are two basic functions of market research: (i) to reduce the uncertainty of the decision making process of marketing (ii) To monitor and control the performance of marketing activities. The information gathered through market research will provide the basis for making marketing decisions.

3. Market Plan

In light of the information gathered from the market research the conclusions should be summarized and stated as the basis upon which the market plan is based. The market plan is the actual process which will establish the library's business goals and objectives and figure out how to achieve them. Katz (1988) describes ``marketing action [as] most effective when the relevant activities are planned and co-ordinate''. The marketing plan is the tool which will ensure that the library services and products are viewed in a focused and clear way.

4. Objectives and Strategies

Once user's needs, future trends and resources available have been established the librarian is in a position to plan the marketing objectives, the resources to be used, the place and the time scale of the operation and the strategies required achieving them. The process of setting aims and objectives will serve a number of purposes. It will provide a focused overview of the library service and give direction and guidance in achieving the objectives. If possible objectives should be quantifiable in order to ensure effective evaluation. Once objectives have been set the strategies necessary to achieve them can be planned. If any of the objectives change over time then the market plan will need to be updated.

5. Promotion

Essentially promotion is the means of informing your users what you do and what you can do. The benefits for those who promote their library services include: increased usage, increased value in the organization, education of users and changed perceptions. The promotional plan emerges from the marketing plan. It is to do with how to achieve the objectives that have been forecast. It involves:

- a description of the service requiring publicity;
- description of the audience at which publicity is targeted;
- details of the campaign method to be employed including type of publicity to be used and method(s) of distribution;
- execution of campaign;
- Analysis of campaign performance.

6. The Medium

Promotional activities can take many forms and the promotional media will depend on the nature of the target audience and on promotional objectives.

6.1 Personal Skills

One needs to be professional and use quality procedures but you also need to smile and establish a personal relationship with as many of your users as possible. If you react positively to complaints, people will be encouraged to tell you about other things they would like change. Instead of defending your position think about their suggestions. Make yourself highly visible, visit the staff room, memorize names, and learn research interests of staff. Make a point of visiting staff rather than waiting for them to visit you. Establish the key players and the people who can and want to help.

6.2 E-Mail

Where a large proportion of the users are on e-mail it is an easy way of reaching them, quickly and cheaply. It can be targeted more precisely than most other methods and so is effective at reaching specific audiences. I have found that staff responds quicker to e-mails than any other medium. By maintaining up-to-date address lists different user groups can be targeted with different versions of the advertising 'message'.

6.3 The Internet

The Internet has the power to improve the library's image and to allow the library to offer enhanced services. Although it takes time to set up and maintain services on the Internet, it can reap rewards in terms of user satisfaction and recognition. A Library Web home page serves as a promotional tool advertising in-house library services and electronic information resources on the web. The pages should include an e-mail link to the library making the librarian easy to contact.

6.4 Newsletters and Leaflets

Newsletters and leaflets are both a means of delivering information. A newsletter can be used to list interesting new web sites, new journals and online services, and perhaps more general science news of interest. It does not have to be long but should be produced on a regular basis. Leaflets and guides can be handed out, and displayed on notice boards. The library notice board should be in a prominent place.

6.5 The Message

Once you have decided upon the advertising medium you need to consider how to convey the message you want to get across. The wording and layout of the advertisement are critical. The advertisement should be uncluttered with the text printed against a pale or white background making it easier to read. White ``space'' is powerful.

- Use good quality print.
- Do not print texts in capitals as it is harder to read.
- Use illustrations and pictures.
- Keeps the layout interesting, with bullet points, sub-headings and so on.
- Use bold colors and catchy headlines and large print.
- Express the service/product in terms of reader's interests.
- Use short sentences, short paragraphs, and avoid long words. Avoid jargon.
- Give examples.
- Look at other peoples advertisements and judge for yourself what is attention grabbing.
- A good advertisement attracts Attention, arouses Interest, creates Desire and stimulates Action, known as the A-I-D-A sequence.

6.6 Attention

You need to get a reader's attention. Within two seconds most readers give up and move on so your job is to grab their attention in those two seconds, and keep them reading. The most important thing about a headline is that it should emphasise the benefit of the service to the reader.

6.7 Interest

Once you have got the readers attention the next thing is to turn that attention into genuine interest. The first paragraph should encourage further reading. The advertisement should stress how the users will positively gain from the new service or product.

6.8 Desire

The next crucial ingredient in your advertisement is desire. As you have been writing the advertisement you should have been cultivating a desire in your reader to own the product or take advantage of your service. However, be honest and do not exaggerate. Continue expressing the service in terms of reader's interest.

6.9 Action

The desire needs to be converted into action. Tell the reader what to do now that you have persuaded them to use the service - `reminder call", ``note in your diary", ``Act now". Encourage action and involvement. The easier you make the process of contacting you the more likely they are to do so.

7. Conclusion

As librarians we should be actively marketing and promoting our library services. The basic aim of marketing is to know and understand our users in order that the library is able to satisfy those needs in an effective way. A marketing plan is an essential tool which will enable us to focus our efforts. The market plan should assess where you are now (market research), where you are going (objectives) and how you are going to get there (strategies).

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Principles of Performance Measurement for Quality Services in Libraries

Veerabasavaiah M **Jayarama Naik K G**

Abstract

Performance measurement in libraries supports the management process and involves evaluation. The for better management information and decision support techniques within the libraries has long been recognized and the librarians require information relating to provision of information services to help them understanding success of individual operations as well as their impact on the organizational environmental and its development. This paper describes on performance measures, Introduction, Definition, Quality, principles, elements and Conclusion.

Keywords: Performance measurement, Elements, Quality of services, RATER

1. Introduction

Performance measurement of library and information an organization is an important managerial activity counts and combinations of counts that enable a library to asses the degree to which a program needs its objects. Performance measure focuses on efficiency of activities when our chief concerned is productivity and on effectiveness when our chief concerned user needs. User as some expectations about eases and convinces of library use or manner of library services and user satisfaction constitutes a third dimension of measurement, all three measure are efficiency, effectiveness and user satisfactions are valid bases for measure of quality but they measure different of aspects of performance. Measure are not standards, they only provide objects and descriptive data, whereas standards defines a desired level of performance.

The goal of libraries performance are to provide instruments that could measure the impact efficiency and effectives of library of operations so as to enable library out put to be quantified or explained in meaningful ways to authorities. It also provide instruments or measures which heads of units could used to demonstrate performance levels and resources needs to the librarians the information and data collect through performance helps in planning and monitoring the total library performance.

1.1 Quality of services

Zeithaml et al (1990) and Berry e all (1990) used market research methodologies to establish the criteria used by customers in assessing the quality of services. They identify dimensions of services quality:

1. Tangibles
2. Reliability
3. Responsiveness
4. Competence
5. Courtesy

6. Credibility
7. Security
8. Access
9. Communication, and
10. Understanding the customer.

After analyzing the ten determinants they provide a set of five key issues which are know as the **'RATER'** set

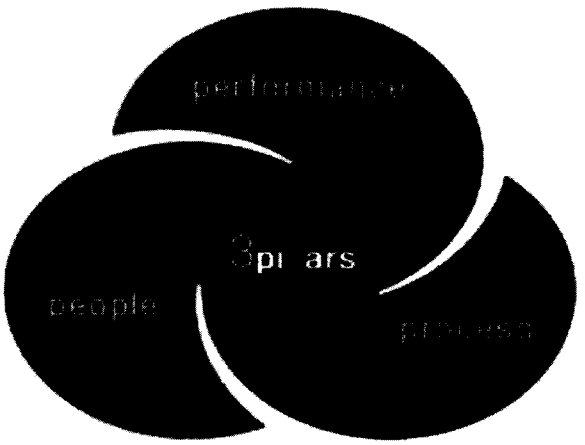
- **Reliability:** The ability to perform the promised services dependably and accurately
- **Assurance:** Knowledge and courtesy of employees and third ability to convey trust and confidence.
- **Tangibles:** Appearance of physical facilities, equipments, personnel and communication materials.
- **Empathy:** Caring, Understanding and individualized attention the organization provide its customer.
- **Responsiveness:** Willingness to help customer and provide promote services

2. Definitions

Performance measurement is the selection and use of quantitative measures of capacities, processes, and outcomes to develop information about critical aspects of activities, including their effect on the public.

Cronin defined as 'the process of systematically assessing effectiveness against a predetermined norm, standard or expressed goal'.

It is defined here as regular measurement of the results (outcomes) and efficiency of services or programs. The new element in this definition is the regular measurement of results or outcomes. Regular measurement of progress toward specified outcomes is a vital component of any effort at managing-for-results [1]



3. Principles of performance measurement

All significant work activity must be measured.

- Work that is not measured or assessed cannot be managed because there is no objective information to determine its value. Therefore it is assumed that this work is inherently valuable regardless of its outcomes. The best that can be accomplished with this type of activity is to supervise a level of effort.
- Unmeasured work should be minimized or eliminated.
- Desired performance outcomes must be established for all measured work.
- Outcomes provide the basis for establishing accountability for results rather than just requiring a level of effort.
- Desired outcomes are necessary for work evaluation and meaningful performance appraisal.
- Defining performance in terms of desired results is how managers and supervisors make their work assignments operational.
- Performance reporting and variance analyses must be accomplished frequently.
- Frequent reporting enables timely corrective action.
- Timely corrective action is needed for effective management control.

4. Elements of performance measurement

There are various elements are available to measure the performance of the libraries

1. General user satisfaction
2. Numbers of items used
3. Number of items used in library
4. Total materials use: the sum of 2 and 3 above
5. Materials availability
6. Requested materials delay
7. Number of visits made to the library
8. Remote user
9. Total uses: the sum of 7 and 8
10. Facility use rate
11. Service point use
12. Building use
13. Reference transaction, Reference satisfaction, Online search satisfaction

Measuring effectiveness is not the smashing as measuring library performance according to Richard Orr (1973) listed appropriateness, informative ness Validity, Reproducibility, Comparability, and Practicality are the six essential characteristics of library measuring library effectiveness. Lynch (1983) defines "Measurement as the process of ascertaining extent or dimension quantity of something". Performance as "the doing of something an activity", evaluation as the "the process of determining whether something is what you want is to be" and effective as referring to something which does well that it is supposed to do". In simple terms "the results of measurement can be used to evaluate the performance of a library and thereby determine whether of not it is qualitative.

5. Conclusion

Performance measurement should aim at the long-term and should be forward-thinking initiative designed to fundamentally change the way libraries quality services and it is a step towards how we do better in the future. It is also important to understand the impact of TQM on improvements in quality service, on sustaining current performance and reducing any possible decline in performance.

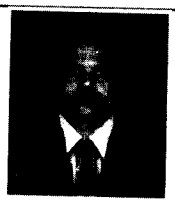
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Ranganathan's Five laws and Their Relevance to Libraries and Librarianship in the ICT Environment

Khamkar R D **Khamkar B D**

Abstract

It can be bibliometrically proved that S.R.Ranganathan is the greatest thinker in the field of library science that the world has ever produced. The number of original contributions he made in this field, fundamental ideas he gave birth to, and the philosophy he advanced are all unmatched in the world. Five Laws are very useful and is a guiding principle of information professionals. Now-a-days we, the library professionals are facing problems of information handling. Most of the professionals have taken the help of ICT in organizing, managing, disseminating the information properly and systematically at National and International level. Information is the key to democracy.

Keywords: ICT, Librarianship, S.R.Ranganathan, Five laws of library science, ICT Environment

1. Introduction

Dr. S. R. Ranganathan was the inventor, educator, librarian, philosopher and mathematician. Since 1924 he was involved in the development of the library at the University of Madras. It was the period of world grappling with fundamental questions. What is a Library? What are the library services? All human activities are analyzed using the scientific method library work could lead to formulation of empirical "Laws". Ranganathan's Five Laws of Library Science was first published in the form of book during 1931 and are applicable to all fields of library activities. Now, we have entered into digital era. Information Technology is the only solution to manage all types of information which is growing rapidly. Information professionals as well as users are handling information technology. In spite of multidimensional development in different area of library work and service and their enrichment with the application of modern technology five laws of library science are equally applicable till date, since its inception. So these five laws still fits in today's ICT based networked environment.

2. Five Laws of Library Science

If one wants to drive a car, he/she need to understand a few basic principles about operating a car. Similarly, it is essential to understand the principles of Library and Information Science to manage the libraries and information centers very effectively and efficiently. Five laws help to LIS professionals to overcome many difficulties and to serve the user community better. It also helps us to organize library resources and make the library and librarians effective and functional. It provides a unified philosophy and defines the purpose and functions of a library. Five laws are the philosophy of our profession and the vision and mission statements of a library. Laws are very simple and powerful.

Ranganathan presented his five laws of library science for the first time in 1928 in a conference of teachers held in the Meenakshi College, Annamalainagar. The Laws appeared in the book form in 1931. Originally the laws appeared in the following form:

1. Books are for use (Mission Statement)
2. Every reader his/her book (Vision Statement)
3. Every book its reader (Marketing Strategy)
4. Save the time of the reader (Customer orientation, customer satisfaction)
5. Library is a growing organism (Planning, Organizing, Collection Management Weeding, Expansion etc.).

These laws are being quoted from five laws of Library science. According to Dasgupta "Later on Ranganathan himself revised these laws as follows.

1. Documents are for use
2. Every reader his document
3. Every document its reader
4. Save the time of the reader
5. A library is a growing organism

The discussion on the five laws of library science is as follows:

4. Applications of Five Laws in Libraries and Librarianship in the ICT Environment

Atherton, Pauline A. Putting Knowledge to Work: An American View of Ranganathan Five Laws of Library Science. Bombay, India: Vikas Publishing House Pvt. Ltd., 1973.

1. Information is for use
2. Every reader his/her Information
3. Every bit of Information its reader
4. Save the time of the Information seeker
5. Information is ever growing.

Open Source and Ranganathan Five Laws of Library Science by Mentor Consulting Services

The First Law	Books are for use	Software is for use
The Second Law	Every readers his or her book	Every user his or her software or Software is for all or Books are for all
The Third Law	Every book its reader	Every software its user
The Fourth Law	Save the time of the reader.	Save the time of the user
The Fifth Law	Library is a growing organism	Note: The American heritage

Dictionary defines Library as it: Pertains to Computer Science in the Following way: A collection of Standard programs, routines, or Subroutines, often related to a Specific application, those are Available for general use

Lennart Bjorman (Webometrician) Assistant Professor, Department of Information Studies, Royal School of Library and Information Science, Copenhagen, Denmark, 2004

1. Links are for use – the very essence of hypertext;
2. Every surfer his or her link – the rich diversity of links across topics and genres;
3. Every link its surfer – ditto;
4. Save the time of the surfer – visualizing web clusters and small-world shortcuts;
5. The Web is a growing organism

Nouruzi Alireza, France is published his article on 'Application of Ranganathan's Laws to the Web' he reveals that The World Wide Web is an Internet System that distributes graphical, hyperlinked information, based on the hypertext transfer protocol (HTTP). The Web is global hypertext system providing access to documents written in a script called Hypertext Markup language (HTML) that allows its contents to be interlinked, locally and remotely. The Web was designed in 1989 by Tim Berbers-Lee at the European Organization for Nuclear research (CERN) in Geneva, 2004.

New ICT suggest that the scope of Ranganathan's laws may appropriately be extended to the Web. Some researchers have presented different principles and laws. As "Five Laws of Web connectivity" by Lennart Bjorneborn, 2004, Gorman's laws are the most famous. He has reinterpreted Ranganathan's laws in the context of today's library and its likely future. Michael Gorman has given us his five new laws of librarianship:

1. Libraries/Librarians serve humanity.
2. Respect all forms by which knowledge is communicated.
3. Use technology intelligently to enhance service.
4. Protect free access to knowledge; and
5. Honor the past and create the future (Crawford & Gorman,1995)

The Five Laws of Web: one new interpretation given by researcher on central idea on the basis of five laws of library science. Webs are really the foundations for any web user-friendly information system. Writers and Webmasters share their information and knowledge with others through web pages. These web laws are;

1. Web resources are for use.
2. Every user his or her web resource.
3. Every web resource its user.
4. Save the time of the user.
5. The Web is a growing organism.

The five laws of library science relevance are reflected in the above discussion. The use of ICT environment in the traditional as well as in the digital libraries in today's context is proved with above discussion.

5. Traditional Practices in Libraries and Librarianship

The major role played by the traditional systems basically involves

1. Acquisition (Printed documents)
2. Processing (Cataloging, Classification, Indexing)
3. Stacking and Organization (Physical Organization of documents)
4. Information Retrieval (Library Catalogue, OPAC)
5. Information Services to users (CAS, SDI, Reference, Referral. etc.)
6. Searching for information for specific topic was a complex and laborious process in the print environment

6. Innovative Practices in Libraries and Librarianship

The innovative electronic services in this sense could mean

1. Automated System managements of Acquisition, Cataloguing, Circulation, Serial Control, Administration OPAC etc
2. Online ordering and delivery from local and remote resources
3. Portals (of one library or groups of Libraries subjects portals) etc
4. Regional or national catalogue databases
5. Online reference
6. Electronic publishing services
7. Internet Access Facilities
8. Management of E- Journals, E- books, E- databases, etc
9. Electronic Library Services
10. Digital Library Services
11. Consortia Based Services

7. Role of Libraries and Librarianship in the ICT Environment

In the present ICT based/ Internet era the library and information science professionals have to change themselves as the information profession is being changed. Now information specialists have to work as e- information resources in which various professional groups are expected to map a strategy that leads to produce, manage, maintain and service in Library and Information Science.

1. Skilled persons are required.
2. Knowledge of Computer is a must.
3. IT skilled persons will be preferred.
4. Information Brokers are required
5. Quality in work is essential.
6. Standardization is a need.
7. Time, efforts, costing are to be applied rigorously.

8. Conclusion

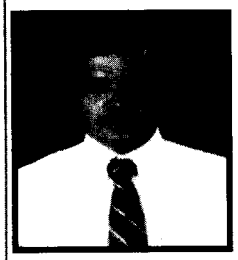
The whole philosophy of librarianship is based on five laws of library Science. These laws look very simple, and when you contemplate as we continue to work in our libraries will provide us with basic tenets to guide us in discharging our duties as keepers of knowledge of our culture. The laws provide essential guidelines for librarians with the

potential for planning and providing patron services in all types of libraries. For the complete examination of these laws everybody has to read the book titled as 'Five Laws of Library Science' written by Dr.S.R.Ranganathan. Due to Information Technology, there are so many changes happened in the world. Information is growing rapidly. Information, Web and Digital Technologies are the only solution to manage and organizes the information in proper way. Today ICT application permits all human activities. Dr.S.R.Ranganathan's Five Laws of Library Science was written seventy six years back and in spite of having so many changes in library world, these Five Laws still fits in today context. The libraries are changing from traditional to the digital libraries, virtual libraries, electronic libraries but five laws are the same and the value and relevance of these laws with the present context with digital libraries is still as it is. The information professionals are using the new digital technological information for their personal development, research and for education.

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Relations between Teamwork and Innovation in Organizations and the Job Satisfaction of Pre-University College Library Professionals in D.K. and Udupi District: A Study

Umesha **Chandrappa S**

Abstract

This paper examines the relationship between organizational culture and library professional's job satisfaction in Pre-university colleges of Dakshina Kannada and Udupi districts. The subjects of the study were 308 library staffs working in 268 colleges of both the districts. The key variables were assessed by the Wallach (1985) Organizational Culture Index and Job Satisfaction Survey of Lyons, Laptin & Young (2003) respectively. The two scales were factor analyzed to indicate the main 'aspects' or 'dimensions' that underlie each of the two measures. Significant correlations were found between the two aspects of organizational culture and the two aspects of job satisfaction uncovered by the factor analysis. It is argued that organization needs an innovative and group oriented culture which promotes employee job satisfaction. In addition, it is assumed from the findings that the job satisfaction of these library professionals will be strengthened by their organization gaining external recognition and respect.

Keywords: Team work, Job satisfaction, Innovation, Library professionals

1. Introduction

In the past two decades globalization and the emergence of high tech organizations have forced technology to restructure their operations, creating many redundancies and forcing managements to reconsider their 'consideration' way of doing service and to deal with the effects of this kind of culture on the job satisfaction of its employees. This is the focus of our attention in this investigation: What will be the effect of the organizational culture of firms in this conservative organization on the feelings of employees about their jobs? To help answer this question, a number of employees were investigated in this study. Independent measures were made of organizational culture in each institution and the extent to which the employees in each institution felt satisfied or dissatisfied with their job.

2. Methodology

In the present study the institutions that formed the sample were drawn from the list of Pre-University Colleges of Dakshina Kannada and Udupi districts. Proportional stratified sampling was then undertaken, and a total of 308 questionnaires were sent to Library staffs of these 268 selected colleges by postal mails. 222 pieces were duly filled and returned. Table 1 provides data on the samples.

Table 1: Number of population and Sampling

District	Number of Staff	Questionnaire Issued	Questionnaire Returned
Dakshina Kannada (169)	185 (109.46%)	185 (100%)	127 (68.64%)
Udupi (99)	123 (124.24%)	123 (100%)	95 (77.23%)
Total	308 (114.92%)	308 (100%)	222 (72.07%)

Demographic data from the samples revealed the following information about the samples: 40% of institutions have existed for more than 30 years, only 60% of employees who responded to the survey were graduates of university, 85% of the employees in the sample are females, 65% of employees are in the age group of 31 to 40 years. The questionnaire required responses on a 5-points Likert-type scale in which '1' represented 'strongly disagree' and '5' represented 'strongly agree'.

3. Results of the study

The means and standard deviations of each of the aspects of job satisfaction and organizational climate measured in this study are given in Table 2 for Organizational Climate and in Table 3 for Job Satisfaction. Before proceeding to the factor analysis, the Kaiser-Meyer-Olkin measure of sampling adequacy was applied to the sample for the measure of job satisfaction and that of organizational culture. The results were 0.950 for the organizational culture sample and 0.950 for the job satisfaction sample. In addition, Bartlett spherical test was employed to assess the 'suitability' of the scales for measuring what they purport to assess or quantify. The results of this analysis are given in Table 4 which provides the indices of 'suitability' for the measures of organizational culture and of job satisfaction used in the present study. To identify the major factors or dimensions underlying each measure, the two scales were each subjected to principal components factor analysis with varimax rotation. The results of the factor analyses are given in Table 5. The relations between the two sets of variables were measured by means of a canonical correlation analysis, the results of which are summarized in figure 1. In the figure, canonical loadings above 0.3 indicate that the particular relationship is significant in explanation at the .05 level. The results given in Figure 1 are summarized in Table 6. In this study, analysis of variance was used to test if the means of the sample three populations are equal. The results of the Levene test –for equality of variances –adopted in this study are given in Table 7. The results of all these tests are summarized in Table 8.

Table 2: Mean & Standard Deviation of organizational culture dimension

Question	Mean	Standard deviation
Colleagues are pleasant to assist & help each other on job	3.86	0.75
Organization cares for performance	3.76	0.76
Organization is aggressive to collect external information for breakthrough	3.59	0.84

Comments for improvement are encouraged by the organization	3.63	0.86
Systems and documentation are scrupulous	3.65	0.86
Encourage and focus on innovation	3.31	0.87
Tradition and ethics are important in organization	3.46	0.87
Employees will be informed organization's policy of diversification	3.29	0.95
Employees support and co-operate the organizational change	3.51	0.84
There is no chance to innovate for organizational work	3.54	0.78
Management styles are conservative and lack intention to change.	3.29	0.97
Sources and assistance will be submitted across departments actively	3.44	0.83
Organization will invest sources on innovation for products and technology	3.58	0.80

Table 3: Mean & standard deviation of Job Satisfaction

Question	Mean	Standard deviation
The workload in my current position and salary I have	3.14	0.89
The feeling of worthwhile accomplishment I get from doing my job	3.50	0.76
The working environment and facility	3.36	0.81
My relationship with the people I work with on my job	3.77	0.74
Satisfied with current job stability	3.53	0.77
The relationship with the superior	3.63	0.79
Current job can make me display much more ability	3.48	0.81
The workload in my current position is acceptable	3.52	0.82
Suggest to improvement and receive the recognition from my superior	3.47	0.81
Always expect opportunities for advancement that exist in my job	3.50	0.79
The recognition I receive from the general public by doing my job	3.49	0.82
The recognition I receive from the status of my position within my profession	3.61	0.78
Job satisfaction can benefit the professional innovation ability	3.53	0.79

My job is for salary only without any opportunity to upgrade	3.65	0.73
If I had it to do over again, I would choose my same job or career	3.21	0.94
Current job makes me more competent in competition	3.26	0.91
Current routine can be more efficient by improvement if I need to do it.	3.64	0.80

Table 4: Bartlett test value

Dimension	X^2	p value
Organizational Culture	3453.85	0.00*
Job Satisfaction	3929.87	0.00*

* means p value is less than 0.05 and statistical significance.

Table 5: Factor analysis and results

Dimension	Factor	Eigen value	Total variance explained	value
Organization Culture	Innovation Spirit Culture	8.720	58.130%	0.920
	Team Work Culture	0.900	64.150%	0.890
Job Satisfaction	Internal Satisfaction	9.540	56.130%	0.930
	External Recognition	0.990	61.920%	0.890

Fig.1 Canonical Structure

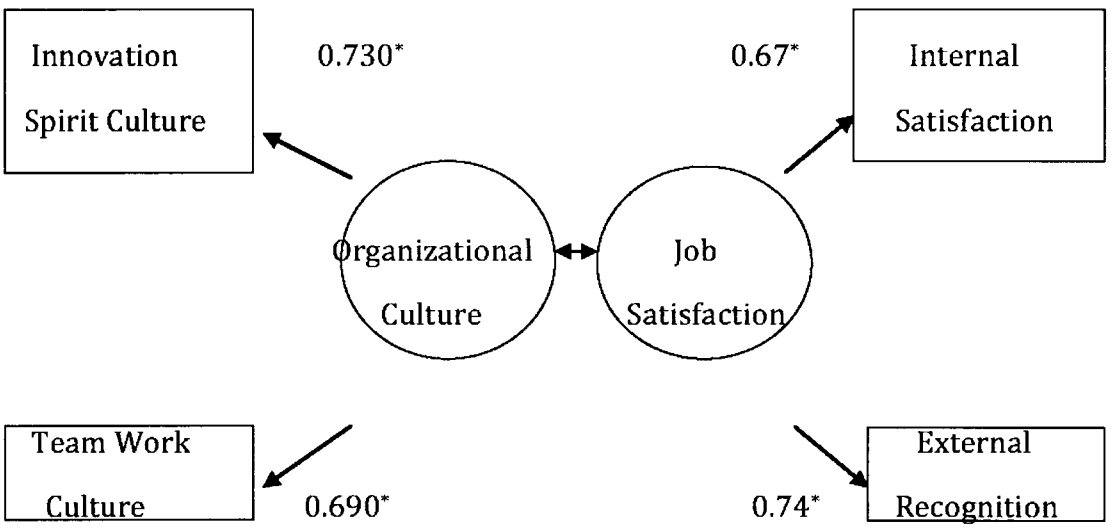


Table 6: Comments of canonical correlation between Organization Culture and Job Satisfaction

Dimension	Factor	Correlation between COVARIATES & Canonical variables	Correlation between DEPENDENT & Canonical variables	Pct Variable Correlation	Index of Redundancy	Square Correlation
Organizational Culture	Innovation Spirit Culture	0.730 (highly positive)		50.00%	32.50%	0.81
	Team Work Culture	0.690 (low positive)				
Job Satisfaction	Internal Satisfaction		0.670 (low positive)	50.00%	32.50%	
	External Recognition		0.740 (highly positive)			

Table 7: Results of ANOVA

	Organizational Culture		Job Satisfaction	
	Levene test	p value	Levene test	p value
History of organization	0.19	0.90	1.88	0.13
Number of employees	0.40	0.66	0.04	0.95
Department	2.69	0.01*	2.40	0.03*
Education	0.78	0.50	0.82	0.47
Location	0.027	0.86	0.001	0.98
Gender	0.09	0.75	0.52	0.47
Revenue	27.64	0.00*	33.34	0.00*
Age status	3.93	0.01*	1.52	0.21
History of service	3.59	0.00*	3.61	0.01*
	Organizational Culture		Job Satisfaction	
	Kruskal-Wallis test (p value)	Welch's t' test (p value)	Kruskal-Wallis test (p value)	Welch's t' test (p value)
History of organization	25.68 (0.00*)		14.53 (0.00*)	
Number of employees	3.93 (0.14)		2.82 (0.23)	
Department			2.80 (0.01*)	1.86 (0.10)

Education	3.64 (0.30)		4.79 (0.19)	
Location	4.43 (0.04*)		0.12 (0.73)	
Gender			0.00 (0.96)	0.19 (0.67)
Revenue		5.78 (0.00*)		7.06 (0.00*)
Age status		6.60 (0.00*)	21.79(0.00*)	
History of service			4.52 (0.00*)	4.63 (0.00*)

* It means p value is less than 0.05 and statistical significant

Table 8: Significant differences between dimensions and background

	Organizational Culture	Job Satisfaction
History of organization	V	V
Number of employees		
Department	V	V
Education		
Location	V	
Gender		
Revenue	V	V
Age status	V	V
History of service	V	V

4. Conclusion

The results of the present study found a positive correlation between the dimensions of organization culture assessed in this study and employee job satisfaction. It was also shown that the employees in this study typically valued external recognition more than their own internal satisfaction, a result explicable in terms of the traditional social system and attitudes of staff according to which 'for personal feelings' should be forgotten 'for the overall respect' and recognition of their organization. The present findings suggest that the employees have to work creatively and innovatively in groups and teams if the organization has to survive and compete effectively. The results of the present study have a number of implications for management in the organization. For instance, they suggest that an organizational culture that promotes job satisfaction will release the kind of innovation and creativity that the organization needs. The results of the study suggest that the attitudes of the employees are such that management should not find many obstacles and difficulties from employees, in their drive to make their organizations more creative and innovative. Given the employees concern with external recognition, for their organizations foremost and themselves less so, management can improve the situation most easily and quickly through improving their external recognition and standing outside.

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Role of ICTs for Modern College Libraries and Information Centers: An Overview

Lokesha Naik **Bandi Ranganatha R** **Lingaraju**

Abstract

The information and communication technologies (ICTs) are changing the way of functions various activities of library and information centers. Since the emergence of computer technology libraries are experienced that changing the traditional card catalogue in to Online Public Access Catalogue (OPAC), adding to this the communication and networking technologies facilitate to greater resource sharing between and among the libraries. Now the internet technology is bridging the geographical barriers to access global information to local user's visa versa. In this paper authors made an attempt to present an overview of various ICTs for effective and efficient management of college libraries in the 21st century.

Keywords: ICT, College libraries, Information centers, ICT applications

1. Introduction

Information and Communication Technology is rapidly changing the whole world crating new challenges and opportunities. It's offering new ways for communicating and exchanging of information and knowledge computers, Communication and Information access Technologies are effecting revolutionary changing in the way the Information stored. Retrieved and disseminated. Information Technologies had an everlasting impact on the library and information centers. Libraries are getting themselves Transformed from Traditional once to digital libraries having wide spread are of computers. Tell communication and Microelectronics to facilitate online searching, easy to access Information through CD Roms, DVD roms, data base, Multimedia Networked. Many libraries have started creating databases of their own in machine readable forms. The traditional methods of stories recording and retrieval have been changed by Information and communicating Technology. The art prints, charts, diagrams, filmstrip, flash cards, games, globes, kite scopes, kits, maps, microfilms, microfiche, micro prints, motion pictures films, disks, slides, study print, tape recording and video tapes etc. are multimedia materials. Controlling and disseminating Information's. Which have become challenges for today's librarians? Effectiveness of a library services is now largely depends upon the information and communication Technologies.

2. ICT Infrastructure

ICT infrastructure is usually considered with respect to its main areas, which are ,

- Hardware
- Software
- Telecommunications

2.1 Modes of communications technology

- Telephone
- Telegraph
- Television
- Computers
- Communication satellite
- Internet
- E-mail
- Fax
- Tele text and video text
- Video conferencing
- Tele conferencing

3. College Libraries

College performs an important function in the educational process. College education provides a totally different environment for boys and girls whom ho for higher studies. Usually the classes comprise a large number of students and unlike school education, the college students get less individual attention from the teachers. The students therefore have to depend much more on the self -learning. Therefore the college library is the ultimate place for the students to supplement their class room teaching (IGNOU, 2000) In general, college is regarded as an institution of higher learning, which provide courses after school leading to Bachelor's degree. Some of the prominent colleges also offer courses leading to Post- Graduate degree and Research work leading to Ph. D. Degree (Jefferson and Smith-Bernett, 1978).

3.1 Objective and Function of College Library

The main objective of college library is to become instrument of instruction. In order to determine, how far it has succeeded in achieving the objective, one should determine the extent to which the user uses the library resource for their assignment as an integral part of the curriculum. In other words we can say that the teaching in the classroom must depend more on library than the textbooks. Therefore library must become the integral part of teaching programme (Krishan Kumar, 1989).A college library is expected to support the objectives of the college. Therefore the basic function of the college library is to provide study materials to its users in short possible time and serve the requirements of the students, teachers and researchers towards reading, study and research.

4. Impact of Information Communication Technology on Libraries

The Exponential rise in generation of new information, especially Scientific and Technological information since World War II has gradually reduced the effectiveness of the traditional tools and retrieval aids used by librarians. We are now in the age of information technology revolution along with information explosion. Due to information explosion, automation of library service is imperative for efficiency and effective working of library and information center. The most commonly known housekeeping operations are

acquisition control, serials control, cataloguing and circulation control. In recent times, even the related topics such as information retrieval, semi-automation, automatic indexing and networking of automated systems are also treated as part of library automation. The use and impact of ICTs is now visible in Indian library and information centers which may be due to the drastic reduction / escalation of the cost of hardware and software and their easy availability in the markets with service support from the suppliers or venders. The impact of IT is also evident on the activities of many LICs associated with universities and other institutions of the national importance.

Now a days there are several information technology for various housekeeping, management and administrative functions of the library, different electronic and digital media, computer aided electronic equipment's, networks and internet has provided significant role in retrieval and dissemination of information and playing an vital role for modernization of libraries main of them are

4.1 Library automation

Automation is the basic need for modernization of any library; library automation is usually distinguished from related fields such as information retrieval, automatic indexing and abstracting, automatic textual analysis. However, now a day's clear distinction is not maintained and library automation may sometime include related fields as well. Although computers have a major role in library automation, telecommunication and reprography technology have equally important role because of the support they offer to library automation for mechanization of library functions.

4.2 Bar-coding technology

Bar-coding is compulsory activity in a modern library, almost all the library automation software packages are compatible with barcode readers and are capable for generating barcodes for library materials. Using barcode equipment's for circulation and stock verification is becoming more common, efficient and time saver.

4.3 Networking technology

Network technology promotes library co-operation, library consortia, and library networks which are the basis for modernization of libraries networks maximizes the effective uses of library resources, improves efficiency in library operations, increases communication and idea sharing. Network encourages applying systems techniques to all library operations and lead improved management of library operation and library resources.

4.4 Web technology

Several libraries has its own website to provide information regarding library, now website is working as a vibrant communication tool for librarians, various professional organizations developed website for better communication, web technology promote research and publication process, provide online access to catalogue and database. Web technology enables resource sharing among the libraries and plays a leading role in modernization of libraries.

4.5 Internet technology

Internet enables libraries to worldwide search within a few seconds and provides access to a large volume of information for communication. Internet supports for multimedia information exchange with open standards and few rules. Internet connects universities, colleges, schools and other educational institutions for information sharing and exchange. Libraries and information centers embracing email services and incorporating it into various information related service as it plays an important role in the dissemination of information.

4.6 Optical disc storage technology

Optical disc storage technology is among the most recent computer technology to enter the library community. CD ROM has ability to represent various media such as text, graphics, and animation, video clips and sound files into a digital environment. Digital video disk or digital versatile disk (DVD) is the next generation of CD. CD's and DVD's has become ultimate storage devise due to high density storage, low cost, inexpensive hardware requirement.

4.7 Scanning technology

Scanner is important equipment in modernization of library. It is useful for scanning text, image and content pages of books for display in the OPAC (Online Public Access Catalogue) and also used in optical character (OCR) applications. Scanned document may be circulated and accessed easily. Scanner is providing great help for establishing digital and virtual library.

4.8 RFID technology

RFID (Radio Frequency Identification) is the latest technology being used in modern library's theft detection system. Unlike EM (Electro Mechanical) and RF (Radio Frequency) systems which have been used in libraries for decades, RFID – based systems moved beyond security to become tracking system that combines security with more efficient tracking of materials throughout the library, including easier and faster charge and discharge, inventorying and material handling. The target used in RFID systems can replace both EM or RF theft detection targets and barcodes. RFID is necessary requirement for modernization of college libraries.

5. Conclusion

Application of information communication technologies in the college libraries are erupting and moving faster than ones imagination resulting in information explosion crossing geographical boundaries. Information communication technologies will help to remove barriers of distance and time. There will be no limit of variety of ways in which modern technology is applied in speedy retrieval of information most consistently. It is the power and capacity of modern technologies that helps every reader to get the information he or she seeks.

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Role of Librarian in Planning of Library Automation

Birje S R **Deshpande Neela J**

Abstract

This paper is focused on the role of librarian in Planning of the Library Automation. In this paper the researchers haves discussed the need of automation, basic requirements of automation, development of a library profile, Estimating the cost for each element, infrastructure development,. System Selection, Preparing formal specifications of the documents, evaluating the hardware/ software proposals, Determine the service priorities, .Planned for Retrospective conversion and membership, Implementation of the automated system. At the end the authors have given the model plan for the automation of the library.

Keywords: Planning, Automation, Retrospective conversion, Model plan

1. Introduction

Library automation is perceived in a simple sense as a process of mechanization of library operations which are of a routine and repetitive nature. This covers usually housekeeping functions such as acquisition, serial control, cataloguing, circulation, and so on. The NAAC has recommended to many academic libraries for automation and networking for better services and quality in higher education. Similarly the National Knowledge Commission has also recommended to the libraries to modernize their library services. Many libraries have the budget constraints as well as unavailability of the infrastructure and technically skilled manpower. Hence the libraries are facing the difficulties in proper planning for infrastructure, selection of hardware, software automated services for improvement of information services and functions in libraries. Hence for the quantitative and qualitative services of libraries needs the proper planning for automation.

2. Objectives of the Study

- To know the librarian's role in planning of library automation.
- To study the need of library automation and basic requirements for it.
- To calculate the estimation of the elements required for automation.
- To know the system requirements and Hardware, Operating Systems, Integrated Library Management system.
- To know the Evaluation of the library automation software, hardware
- To understand the planning of retro conversion and member Id and implementation of the ILM.

3. Systems Selection

Before the selecting the hardware and software the librarian has to think about the Operating System and select the proper suitable operating systems, i.e. single operating and multi-user operating systems and select the one of the best operating system Windows or Windows NT/ Linux/ Unix operating systems etc. For the library automation the most important component is the Library Integrated Management Software, the librarian has to select open source or commercial suitable software, which has fulfil the library requirements and outputs of the library like reminders, accession registers, daily transaction reports etc..

4. Prepare the Formal Specifications of Documents

The librarian have to speak with sales representative, reading the various literature or comparing broad cost quotations and prepare the Request for proposal. The librarians have included the following points in the request proposal.

- Background information of the library
- Description of how the vendor should submit their proposals for business.
- Instructions on receiving the vendor policies and payment terms and conditions.
- Which criteria's are used for evaluating the proposals?
- The proposal must include about the documentation, training, customization, implementation and services
- Your detailed technical specifications about the software/ hardware Librarian can ask to describe the services and conditions provided by the vendor:
- Their system maintenance and services
- Requirement of infrastructure for hardware / software
- Their software/hardware installation at site
- Their system and hardware guarantees i.e. 3 year or 1 year normally
- Their actual cost and strategies in details.
    - After the guarantees is over annual maintenance services and charges.

5. Evaluating the Hardware/ Software Vendor Proposals

Upon the receipt of the proposals the librarians have to first self prepare and collect the various outputs and inputs for the library systems. Hardware Configurations, for the evaluation of the proposals he must form the committee for automation and in this committee librarian role is co-ordinator and in this committee the following persons must be included. i) Institutional Head, ii) Management Trustee iii) Finance & Accounts Officer iv) Hardware experts iv) Software Experts and one or two outside experienced librarian.

5.1 Determine the Service Priorities

Once the system of hardware and software proposals are final, after completing the infrastructure install the hardware and operating systems in the library. Install the selected Integrated Library Management system from commercial, co-operative venture, self developed and open source softwares, check out the whole system, inputs, outputs and technical problems and setup all the parameters.

5.2 Planning for Retrospective Conversion and Membership of Library

Once system is fully installed the librarian has to first think about the creation of the collection of the databases like books, bound volumes, theses and dissertations and master of borrowers to plan for the retrospective conversion in Phase- wise. If the collection of the libraries is more than 50 thousand then librarian goes for the outsourcing management. The librarians have to float the quotations for outsourcing and evaluate the same. Otherwise librarians have to appoint the data entry operators for data entry work and for pasting the barcodes on the document. Follow the model plan for the retro conversion.

5.3 Member ID card Generation Steps

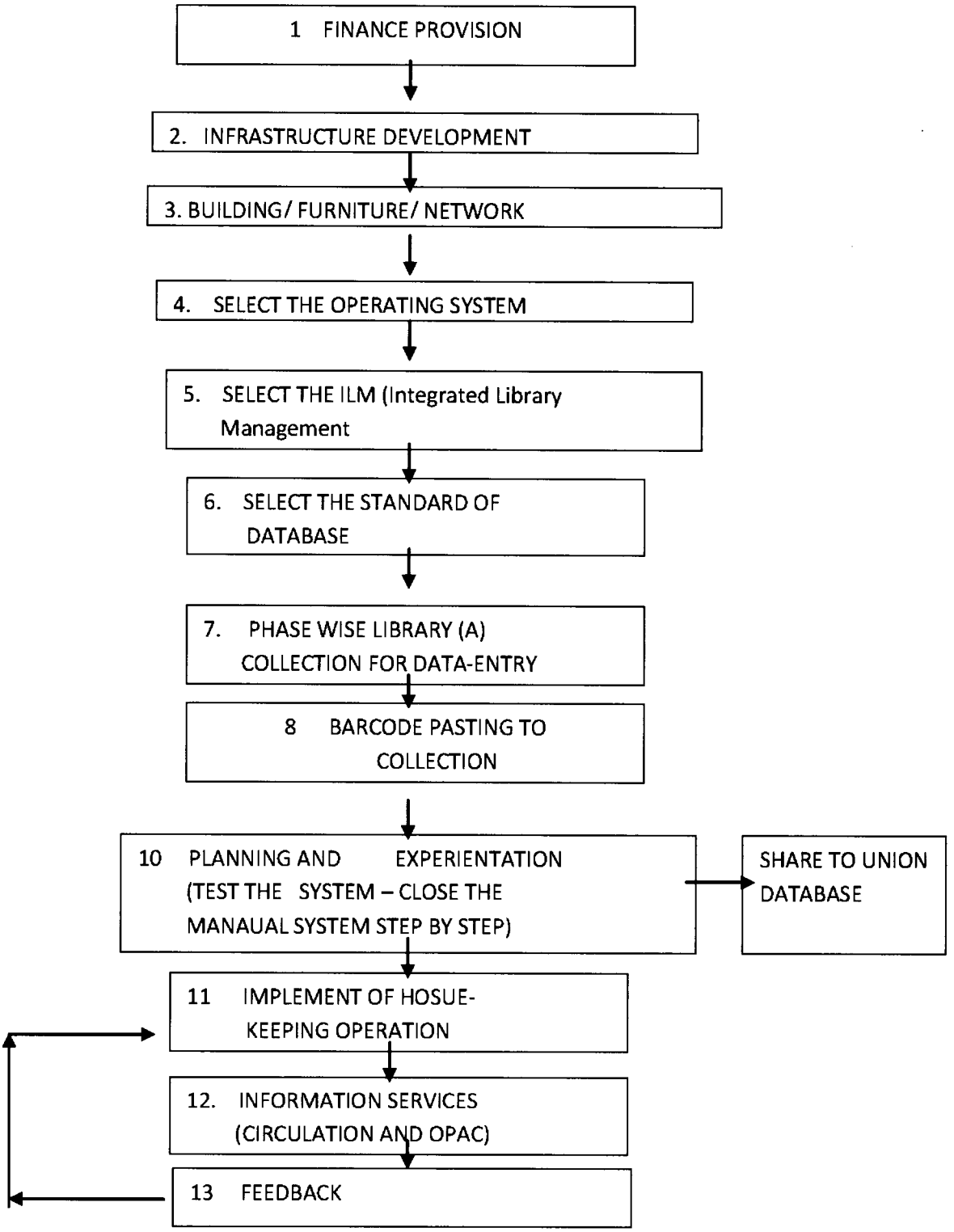
After completion of the retro conversion think about Member ID Card Generation:

- Setup the Member ID auto-generated or customized. Setup the parameters for categories, groups, holiday calendars etc.
- Enter the member ID details from the Registration Form and capture the image of member and confirm the details in front of member at the time of capturing image.
- Generate the member Id cards daily and arrange the id date-wise with surname.
- Distribute the member ID card to member.

6. Future Scope

Libraries in the new future are going to be more and more interfaced, interlinked with the ICT related technologies. The changes in the future will relate RFID, Bluetooth and other technologies concerned with wireless sensor Network's and any new technologies which develop will be definitely integrated in the Library Automations.

Model Plan for Automation



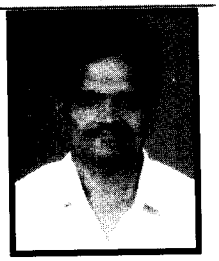
7. Conclusion

In the Planning of the Library Automation the librarian has to play very important role in the planning, he must be planned it very carefully for the library automation before planning he must be made the provision of the budget, develop the infrastructure, prepare the detailed library profile, priorities of the creation of databases, priorities of the services and he has to plan for the retro conversion in phase-wise and lastly think about the member ID, check the every out-puts required by the library and close the manual system step by step and implement the automated system.

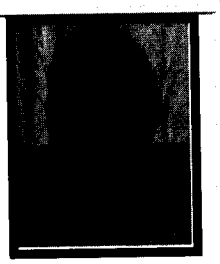
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Role of Librarians in Imparting Knowledge through Information Resources: A Study

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Kavitha **Tressy Menezes**

Abstract

The present study is an attempt to examine the issues related to Librarians perspective on the use of information resources of college students. The issues studied are factors which inspire them to develop reading habits. 50 Librarians from 52 colleges from various part of Karnataka served as the sample for the study. Descriptive statistics and Chi square is applied to find out the difference between course type and gender on various issues .The paper deals with general reading habits, Time spent on reading, factors that help in reading promotion in improving knowledge. 40% and 36% of the librarians indicated that students spend 3-5 hours and more than 5 hours respectively and 12% of librarians felt that students spend more than half an hour and one hour respectively.

Keywords: Knowledge resources, Reading habits, Mass media, Electronic media

1. Introduction

The successful implementation of new technologies is dependent on many factors including the efficient management of human resources. Furthermore, recent research indicates that intellectual assets and resources can be utilized much more efficiently and effectively if organizations apply knowledge management techniques for leveraging their human resources and enhancing their personnel management. The human resources departments are well positioned to ensure the success of knowledge management programs, which are directed at capturing, using and re-using employees' knowledge. Through human resources management a culture that encourages the free flow of knowledge for meeting organizational goals can be created.

2. Objectives of the study

- To identify the factors pertaining to librarian's general reading habits and their perspective towards the general reading habits which enables in enhancing knowledge.
- To identify the time spent by the users for study
- To identify information resources in developing reading habits. which paves the way for enhancing knowledge
- To identify librarian's perspective and assess the factors that helps and influences to develop reading habits for improving knowledge of the college students.

- To identify the factors from librarians perspective in reading promotion of the user community

This study is conducted with the following scope and limitations

- The study focuses its attention on reading habits of college students in enhancing knowledge from librarian's perspective. The study covered randomly selected college Librarians of Karnataka.
- The study is limited to the Librarians population of Professional and non professional college Librarians of Karnataka. 7

3. Methodology: Sampling of Data Sources

The investigator did the field survey during by visiting 52 colleges including colleges of Karnataka, regarding the nature of the problem with the help of various tools of scales related to dependent and independent variables. The survey was done on the basis of gathering mass data to indicate the present trend of Reading Habits from the librarian's perspective.

The study covered Librarians of College imparting courses on different streams of education. The total number of questionnaires distributed was 52, out of which the base population figure of Librarians of all those colleges is 50. Care was taken to distribute the sample over professional and non-professional colleges; rural and urban colleges; so that the findings of this research could be generalized more meaningfully to apply to the whole of the population.

3.1 Tools employed

Data was collected by the respondents through questionnaire. . Issues related to librarians perspective pertaining to general reading habits, Problems in developing reading habits and reading promotion. of professional and non professional Librarians of Karnataka. The tools in the form of questionnaires and personal observation were employed in the present study.

3.2 Procedure

Initially, Librarians of the selected institutions were approached and permission was obtained to collect data from the respective institutions. The Librarians were then approached and questionnaire on Reading practices- Librarians perspective was administered to them, Investigator clarified those questions. Later, the questionnaires were scrutinized and finally data from 50 Librarians were included in the analysis. The data was analyzed through software SPSS for Windows (version 15.0).

4. Data Analysis

The data collected coded according to the requirements and fed into the computer for further analysis using the software SPSS for Windows (version 15.0). Following statistical techniques were employed in the present study.

- Descriptive statistics
- Chi-square test/Contingency table analysis

5. General Reading Habits

5.1 Time spent for reading

Chi-square test revealed a non-significant difference for the obtained frequencies as 28% of the librarians indicated that they spend 1 hour a day in reading, 38% of them indicated 1-2 hours of reading and the remaining 34% indicated more than 2 hours of reading. Personal reading done by the librarians will pave the way for rendering better service (Table 1).

Table: Responses for Time spent for reading in a day

Time spent	Responses	Percent	Chi-square	P value
1 hour	14	28.0	.392	.822 (NS)
1-2 hours	19	38.0		
More than 2 hours	17	34.0		
Total	**50**	**100.0**		

Note: NS-Non-significant

5.2 Responses of reading books Source

68% of the librarians answered that they get books for reading in a college library, followed by 56% from personal collection, 28% from public libraries, and 24% of them indicated that they get books for reading from university libraries, which constituted a significantly low percentage. Personal collection by the librarians reveals their interest in reading which in turn enables them to encourage students to read.

Table 2: Responses for Where do you get books for reading?

Source of books	Responses	Percent	Chi-square	P value
Personal Collection	28	56.0	.361	.548 (NS)
Public Library	14	28.0	5.086	.024 (S)
College library	34	68.0	3.348	.067 (NS)
University library	12	24.0	7.25	.007 (HS)

Note: HS-Highly significant; S-Significant; NS-Non-significant

5.3 Extent of Reading

As far as bringing new information to the notice of the students, 52% of the librarians indicated that they do it to a greater extent, 42% to a moderate extent, 4% to a little extent and remaining 2% indicated not at all (Table 3). Chi-square test revealed a significant difference (chi-square=22.67; P<.000) between those frequencies. 62% of the librarians stressed that they would go through the contents books and periodicals to a greater extent, 26% to a moderate extent, 12% to a little extent and chi-square again revealed a significant (chi-square=7.80; P<.05) difference between frequencies of responses. In consulting faculty and students regarding latest trends and information, 54% of the librarians indicated that they do it to a moderate extent, followed by 26% to a little extent, and 20% to a greater extent and test statistics showed a significant difference between frequencies of responses. In getting to know the students regarding the latest

developments that are taking place, 44% of the librarians felt that they are doing it to a greater extent, 40% to a moderate extent, and remaining 16% of the librarians indicated that they do it to a little extent. Further, chi-square revealed a significant difference (Chi-square=16.60; P<.001) between frequencies of different responses. Regarding the interaction with the students a non-significant difference was observed (chi-square=5.11; P<.164), indicating that pattern of responses in different categories like to a great extent, moderate extent, little extent and not at all were statistically the same. As far as the career and career guidance to the students are considered, 44% of the librarians felt that they are doing it to a moderate extent, followed by 26% to a little extent, 24% to a greater extent and lastly 6% of the librarians did not bother at all. Chi-square test showed a significant difference between different frequencies of responses. Students will definitely read provided the above services are given to them. It is therefore the need of the hour that students are encouraged to read which will in turn involve them in intensive learning.

Table 3: Responses for the extent of reading which has given impetus to enhance the knowledge of the students

Statement	Responses to the extent of				Chi-square	P value
	Greater	Moderate	Little	Not at all		
1. Displaying the current information on various aspects which will bring awareness among user community which motivates them for serious reading.	26 (52%)	21 (42%)	2 (4%)	1 (2%)	22.67	.000 (HS)
2. Information regarding new books periodicals, journals and inspiring the students to go through the contents prefaces.	31 (62%)	13 26%)	6 (12%)	0 (0%)	21.36	.000 (HS)
3. Though I am not proficient in different disciplines, I consult the concerned faculty members and inform the students about the latest trends and information through print and electronic media.	10 (20%)	27 (54%)	13 (26%)	0 (0%)	17.33	.001 (HS)
4. As I am a learner to learn, I will try my level best to keep the user community by giving information through INFLIBNET membership for accessing information on e books and e journals	22 (44%)	20 (40%)	8 (16%)	0 (0%)	16.60	.001 (HS)
5. Inspire the students to go through CDs and VCDs	13 (26%)	17 (34%)	16 (32%)	4 (8%)	5.11	.164 (NS)

6. I will also help them in providing career opportunity by consulting the career guidance cell and also advertisements from different sources for there future prospectus	12 (24%)	22 (44%)	13 (26%)	3 (6%)	7.80	.050 (S)

5.4 Hours spent in the library for reading in enhancing knowledge through information resources

40% and 36% of the librarians indicated that students spend 3-5 hours and more than 5 hours respectively and 12% each of librarians felt that students spend more than half an hour and one hour respectively. On the whole 76% of the librarians felt that students spend more than 3 hours in library per day. Further, chi-square test revealed a significant difference (Chi-square=8.538; P<.039) between different frequencies of responses (Table 4). This table which reveals that students spend more than 3 hours per day states that library is an important centre in imparting education indirectly through books and other reading materials.

Table 4: Responses for how many hours do users spend in the library per day?

Time spent	Responses	Percent	Chi-square	P value
More than half an hour	6	12.0	8.358	.039 (S)
1 hour	6	12.0		
3-5 hours	20	40.0		
More than 5 hours	18	36.0		
Total	**50**	**100.0**		

5.5 Providing different services in enhancing knowledge through information

When asked about different services provided to user community by librarians to improve knowledge by inculcating reading habits, following aspects emerged. 88% of the librarians indicated that by reference service it was always, 70% said it was always for photocopying service, 58% said it was always by book bank, 56% said it was always by current titles, 54% always by Internet search. 42% of the librarians felt that they could improve the reading habit of students by giving services like media more often. For all the services significant chi-square values were observed except for services like bibliographical services and critical review of journals (Table 5). This reveals that the student do respond to the services given by the librarians. This table indicates that students rely on the library for their academic pursuits. This has relevance to earlier study by Venkatesha (2001) with slight modifications.

Table 5: Responses for providing different services in enhancing knowledge through information

Services	Responses				Chi-square	P value
	Always	Often	Sometimes	Not at all		
1. Bibliographical services	15 (30%)	16 (32%)	14 (28%)	5 (10%)	6.16	.104 (NS)
2. Book bank	29 (58%)	10 (20%)	8 (16%)	3 (6%)	31.12	.000 (HS)
3. Critical reviews of journals	9 (18%)	17 (34%)	17 (34%)	7 (14%)	6.64	.084 (NS)
4. Current awareness service	29 (58%)	7 (14%)	-	14 (28%)	15.16	.001 (HS)
5. Current titles	28 (56%)	15 (30%)	4 (8%)	3 (6%)	32.72	.000 (HS)
6. Document tracing service	22 (44%)	15 (30%)	8 (16%)	5 (10%)	13.84	.003 (HS)
7. Internet	27 (54%)	10 (20%)	6 (12%)	7 (14%)	23.12	.000 (HS)
8. Literature search	25 (50%)	14 (28%)	7 (14%)	4 (8%)	20.88	.000 (HS)
9. Media	8 (16%)	21 (42%)	16 (32%)	5 (10%)	12.88	.005 (HS)
10. News paper clipping pertaining to different disciplines.	27 (54%)	8 (16%)	13 (26%)	2 (4%)	27.28	.000 (HS)
11. Photocopying service	35 (70%)	4 (8%)	8 (16%)	3 (6%)	55.12	.000 (HS)
12. Reference service INFLIBNET and HELINET services.	44 (88%)	5 (10%)	1 (2%)	0 (0%)	32.68	.000 (HS)

5.6 Reading Promotion

Significantly books display (94%), files of news paper clippings (84%), accessing internet (78%), library orientation (82%), motivating students to refer to dictionaries, encyclopedias and other reference books to acquire better ideas (80%), and Personal dialogue with students: in preparing project, assignment, seminars etc (64%), providing bibliographic services (66%) are the ways the librarians follow to promote reading habits of the students. Activities like organizing media activities contribute significantly to a lesser extent for improving reading habits of the students (Table 6). Non-significant differences are observed for activities like Book talks, review, lectures by eminent scholars, Indexing

and abstracting of journal articles on different topics, Instituting a prize for the best users of the library, Organizing: at least three exhibitions in a year, and Premedical course on library usage. The above table indicates that majority of the librarians are of the opinion that the above mentioned factors certainly help them in promoting the reading habits of the students.68% of the librarians opined that reading more newspapers and journals, 56% of the librarians felt that reading more general books other than text books are the factors that help in improving the reading habits of college students to a greater extent. 58% of them opined that attending readers' forums and 62% by watching media programs are the factors that help in improving the reading habits of college students to a moderate extent (Table 6). 30% of them felt that meeting celebrities is one of the factors to improve reading habits among students to a little extent. Further, chi-square tests revealed significant difference for all the factors listed in the table.

Table 6: Responses how do you promote reading habits of the students?

Statements	Responses	Percent	Chi-square	P value
Book display and exhibition on new titles and popular books	47	94.0	38.720	.000 (HS)
Book talks, review, lectures by eminent scholars	25	50.0	.000	1.000 (NS)
By organizing media activities	12	24.0	13.520	.000 (HS)
Earn and learn scheme for students	16	32.0	6.480	.011 (S)
Files of newspaper clippings	42	84.0	23.120	.000 (HS)
General, quiz and written essay competition	33	66.0	5.120	.024 (S)
Helping them in assessing information by using internet INFLIBNET, HELINET, Institutional Membership With University library.	39	78.0	15.680	.000 (HS)
Honors program for aspiring library professionals	12	24.0	13.520	.000 (HS)
Indexing and abstracting of journal articles on different topics	24	48.0	.080	.777 (NS)
Instituting a prize for the best users of the library	23	46.0	.320	.572 (NS)
Library orientation	41	82.0	20.480	.000 (HS)
Motivating students to refer to dictionaries, encyclopedias and other reference books to acquire better ideas	40	80.0	18.000	.000 (HS)
Organizing: 3 exhibitions in a year	22	44.0	.720	.396 (NS)
Personal dialogue with students: in	32	64.0	3.920	.048 (S)

preparing project, assignment, seminars etc and also helping them through print and electronic media to get the information required by them.				
Providing bibliographic services	33	66.0	5.120	.024 (S)
Premedical course on library usage	20	40.0	2.000	.157 (NS)
Summer reading program	17	34.0	5.120	.024 (S)

5.7 Resources helping in improving knowledge of user community?

Significantly books display (94%), files of news paper clippings (84%), accessing internet (78%), library orientation (82%), motivating students to refer to dictionaries, encyclopedias and other reference books to acquire better ideas (80%), and Personal dialogue with students: in preparing project, assignment, seminars etc (64%), providing bibliographic services (66%) are the ways the librarians follow to promote reading habits of the students. Activities like organizing media activities contribute significantly to a lesser extent for improving reading habits of the students (Table 7). Non-significant differences are observed for activities like Book talks, review, lectures by eminent scholars, Indexing and abstracting of journal articles on different topics, Instituting a prize for the best users of the library, Organizing: at least three exhibitions in a year, and Premedical course on library usage. The above table indicates that majority of the librarians are of the opinion that the above mentioned factors certainly help them in promoting the reading habits of the students.

68% of the librarians opined that reading more newspapers and journals, 56% of the librarians felt that reading more general books other than text books are the factors that help in improving the reading habits of college students to a greater extent. 58% of them opined that attending readers' forums and 62% by watching media programs are the factors that help in improving the reading habits of college students to a moderate extent (Table 7). 30% of them felt that meeting celebrities is one of the factors to improve reading habits among students to a little extent. Further, chi-square tests revealed significant difference for all the factors listed in the table. This has a relevance to earlier studies conducted by Clark (2005).

Table 7: Responses for to what extent do the following resources help in improving knowledge of user community?

Statements	Responses to the extent of				Chi-square	P value
	Greater	Moderate	Little	Not at all		
By reading more general books other than text books	28 (56%)	19 (38%)	3 (6%)	-	19.240	.000 (HS)

By reading more news papers and journals	34 (68%)	13 (26%)	2 (4%)	1 (2%)	56.400	.000 (HS)
By watching media programs	6 (12%)	31 (62%)	12 (24%)	1 (2%)	41.360	.000 (HS)
By using internet, CDs and other e sources	20 (40%)	20 (40%)	9 (8%)	1 (2%)	20.560	.000 (HS)
By attending book talks	21 (42%)	19 (38%)	7 (14%)	3 (6%)	18.800	.000 (HS)
By reading book reviews	18 (36%)	23 (46%)	8 (16%)	1 (2%)	23.440	.000 (HS)
Meeting celebrities and authors	8 (16%)	23 (46%)	15 (30%)	4 (8%)	16.720	.001 (HS)
By attending group discussions	15 (30%)	21 (42%)	13 (26%)	1 (2%)	16.880	.001 (HS)
By attending reader's forums	8 (16%)	29 (58%)	10 (20%)	3 (6%)	31.120	.000 (HS)

6. Findings

To summarize, the main findings that emerged from the survey on librarians are:

- 28% of the librarians say that they spend 1 hour a day in reading, 38% of them involved 1-2 hours of reading and remaining 34% say more than 2 hours of reading.
- 68% of the librarians are of the opinion that they get books for reading in the college library, followed by 56% from personal collection, and 28% from public libraries.
- In bringing the information to the students, 52% of the librarians feel that they do it to a greater extent, 42% to a moderate extent, 4% to a little extent and remaining 2% indicated not at all.
- 62% of the librarians are of the opinion that they will go through the contents of books and periodicals to a greater extent and 26% will do it to a moderate extent
- In consulting faculty and students regarding latest trends and information, 54% of the librarians say that they do it for a moderate extent, followed by 26% to a little extent, and 20% to a greater extent
- In getting to know the students regarding the latest developments that are taking place, 44% of the librarians are of the opinion that they are doing it to a greater extent, 40% to a moderate extent
- As far as career and career guidance to the students are considered, 44% of the librarians feel that they are doing it to a moderate extent, followed by 26% to a little extent, 24% to a greater extent and lastly 6% of the librarians do not bother at all.
- 40% and 36% of the librarians feel that students spend 3-5 hours and more than 5 hours respectively and 12% each of librarians say that students spend more than half an hour and one hour respectively in reading.
- Reference service to a great extent enable the librarians to develop the reading habit This is stated by 62% of them, followed by 60% for book bank, circulation of new book list, 54% for Selective dissemination of service.

- Books display (94%), files of news paper clippings (84%), accessing internet (78%), library orientation (82%), motivating students to refer dictionaries, encyclopedias and other reference books to acquire better ideas (80%), Personal dialogue with students: in preparing project, assignment, seminars etc (64%), Providing bibliographic services (66%) are the ways librarians follow to promote reading habits of the students
- 68% of the librarians are of the opinion that reading more newspapers and journals, and 56% of the librarians felt that by reading more general books other than text books are the factors which help in improving the reading habits of college students to a greater extent.

7. Conclusion

It is very much needed that the librarian must take active interest and update in the technologies of communication, data, storage, and retrieval information transfer. These aspects should result in promise encouraging and assisting in educational change and improvement. In the right direction it is necessary to have high ideals of librarianship with dynamism and deep dedication to the profession and good interpersonal relationship so that library staff can contribute their best, encourage team spirit, which in turn helps us to render best service to our users. LAN and WAN will bring out any library participating local, regional national and global level. Library is a process it is communicative in print sound and image. It is necessary to make a conscious attempt to blend the library with the totality of community and institutional change. We should realize that technology could do much to enhance display and present recorded experience in ways never before available. The finding of the mixture of traditional and technological innovations to cope up with the paradigm shift from conventional to electronic media befitting 21st century wherein the use of the library will not only mean reading but also seeing listening and communicating users forum which will be relevant and useful.

The Electronic media is posing a challenge to the information providers in the field of applying new skills and techniques as such librarians should be well versed in rendering services through print and electronic media. As per the literature survey the question arises whether E-books can replace print media. Well, the book publishing industry is alive and healthy. Print has many rights and powers that e-books don't have. Print media helps and supports in open research, teaching and public discourse of our community. Librarians perform a teaching and research role in as much as they instruct student formally and informally advise and assist students in their academic pursuits. The librarian is a potential independent force who can imbibe self learning skills which will have an impact on reading habits of college students.

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Role of Libraries in the Knowledge Society: Challenges and Recent Development

Krishnamurthy M

Abstract

The role of information in knowledge society has changed. Library refers to information centre, which is actively involved information collection and promoting use of for the development of individual and society. Modern libraries are the centres of interaction for all interested in accessing information and in participating in the marathon of the present competitive age. It is clearly visible in the contemporary context, that the libraries in the knowledge society are much more than the book depositories. Professional library associations can help to integrate theory and practice in librarianship. There is a need and an opportunity for associations to reach out with new ideas for bringing together theory and practice to a wider set of stakeholders, including library school students, as well as seasoned professionals, academics, and consultants. This article looks at the theory/practice divide in library and information science and particularly among library school students, newly minted as well as seasoned professionals, academics, and consultants.

Keywords: Knowledge society, MKC, Role of library association, India

1 Introduction

In recent decades, the rapid globalization of markets in an environment of sustained technological innovation has played a powerful role in redefining the foundations of the modern organization as economic enterprises. Twenty first century is rightly branded as a knowledge century where knowledge is the primary production resource instead of labour and capital. Scholars have opined that in the past twenty years, world has moved from an industry and transportation based society to a society based on knowledge and information. Today knowledge and information are blending the people and many are earning their living by acquiring and transferring information in one way or the other. The dependence on knowledge and information is heavily increasing in the days to come. It is clearly demonstrated these days information is considered as vital as the forming skills in agricultural age or basic industrial skills in the wired society, transcending national borders. These changes will be reflected in the organisations, in work relationships, management.

2 Changing functions of libraries in knowledge society

Knowledge Society is one where creating, sharing and using knowledge is influencing the prosperity and well being of the people. It is a "work-in-progress" society that invests significantly in harvesting the available skills, technology and learning towards

development. Knowledge society presupposes not just literate or a computer literate society, not even educated workers, but knowledge workers. Essentially, the knowledge workers are highly motivated and empowered with skills. They are not belonging to ruling class but they act as 'leading classes of workers. Thus knowledge society is far more competitive and specialized than any other societies existed before. Efficient utilization of knowledge creates wealth in the form of better health, education and infrastructure. Knowledge society has two components-societal transformations built an education, healthcare, agriculture, governance and wealth generation. Creative capacity, innovative talent and ability to determine the relevance of the products and service are the most important indicators of the knowledge society. All the countries in the world are moving towards being knowledge societies and there by reiterating that they are the learning societies. In a knowledge society learning and education have a very high priority and in the process most of the governments spends significant amount of their budget to promote higher learning and education. To be in tune with the growing and mature knowledge society, various professional institutions will establish the associations to demonstrate their activities.

3 Knowledge society: The new paradigm

The new paradigm thinking in science reaffirms the constant change occurring in our view of nature and our understanding of the process of the acquisitions of knowledge in man. The above paradigm is also supported by the futurists Alvin and Heldi Toffler. They described the third wave's knowledge based society with the following features:

- Knowledge as the new factor of production vis- a vis land, labor, capital and technology;
- Intangible values, measured not in land assets but in the capacity of a country or an organisation to acquire, generate, distribute and apply knowledge strategically and operationally;
- Heterogeneity of markets or users, presence of niches;
- New definition of work where the concepts of direct and indirect labor are blurred;
- Constant process of innovation process shortening product (or service) life cycles;
- Shrinking scale of work units, downsizing;
- More innovative and matrix organizations, characterized by the deployment of functional experts in a multidisciplinary team to carry out innovative projects where coordination is through mutual adjustment, encouraged by liaison personnel and integrating managers;
- Need for systems integration arising from complexities;
- Concepts of infrastructure (virtual organisation or libraries) in the electronic network; and
- Acceleration of things toward real time.(Tofler,1993)

4 Knowledge related activities in libraries

Information has vital role and it is a key input in national development. For a nation to develop it needs to have and provide relevant, updated and adequate information on

food security, health, democracy, population, education, family planning, youth empowerment, gender quality, environment etc. Libraries are therefore proper management, provision and dissemination of such information. It is clearly visible in the contemporary context, that the libraries in the knowledge society are much more than the book depositories. Libraries are not just performing traditional tasks in a new environment such as preserving our cultural heritage but provide greatly extended services to millions of users like students, researchers and members of the public as a whole. Libraries are also able to access a huge range of high quality information. They are fast becoming treasure-houses of digital content as well as creators of digital content themselves. Libraries have key role to play in underpinning learning in its broad sense, both as a formal activity in an institution and informally with in the community. Public libraries are the focal points for local community, stimulating learning (Patrick, 2007).

In the global knowledge economy of the twenty first century policy challenges will require it to use knowledge more effectively to raise the productivity. This is because the application of knowledge as manifested in areas such as entrepreneurship and innovation, research and development, and people's education and skills levels, is now recognized as one of the key source of growth and competiveness in the global economy. Although knowledge has always been at the care of any country's development process, increased speed in the creation and dissemination of knowledge is making it even more important in development strategy. Knowledge is more important today than ever, as the twin forces of globalization and technological advances are spurring an ongoing knowledge revolution. At the same time, of course, a revolution information and communication technology (ICT) is increasing worldwide interdependency and connectivity. Consequently, countries competiveness depends more than even on their ability to access, adapt, utilize and create knowledge. Knowledge has become the key driven of economic competiveness and success. Improved knowledge has led to increasing productivity, and the creation and application of new technologies has increased the range of library services and products and brought revolutionary change to virtually in library applications(Carl and Anuja, 2005;103).

5. Role of library associations in the knowledge society

History of LIS profession reveals that the librarians have really recognized and championed the power of printed words in the free and open society. Right to information is a fundamental principle of democracy. There were many instances in the history that some of the bad elements in the society went against the citizen's right to know and posed problems in the free access to the information. Political, religious and social motivations have resulted in these so called criminal activities. Libraries are often targeted in this context. Here comes the critical role of the library associations. In fact the National Library association has been endeavouring considerably by devising the tools and techniques of educational provisions, legislation programmes facing the complex litigations and strengthening the advocacy. National Library Associations as advocates for democracy provide a forum and vehicle that allows the voice of the libraries to be heard. Libraries are considered as corner stones of democracy. According to the former president of ALA Nancy Kranich "An informed public constitutes the very foundation of a democracy.

Libraries are the cornerstone of democracy n our communities because they assist the public in locating diversity of resources and in developing the information literacy skills necessary to become responsible, informed citizens who can participate in our democracy". Associations create a framework that enables libraries and librarians to increase their effectiveness in empowering the user community to participate in a knowledge Society (Patrick, 2007).

National Library Associations have to play a significant role in strengthening the abilities of the professional workers to be proactive in promoting the lifelong learning in the networked environment. There are a) Access b) Retrieval and c) Evaluation. Library Association needs to focus the attention to enable the professional workers to inculcate and imbibe such skills and techniques to provide access to a vast range of global resources using both traditional and electronic media. It is also necessary to enhance the new skills and methods to assist the users to use computer, to navigate around the set of databases and also act as able mediators between the learner, provider and learning resources. It is again essential to make provision for the professionals to develop the latest skills of critical evaluation and interpretation. With which the users can maximize their use of the new global network.

Members of the Library Association represent many regions, many places and libraries of all sizes and types. Library users are the people of all age groups, all religion and all races. In fact, librarians form a diverse group and serve even more diverse groups. The common language of the librarians is the language of information. They serve the common community of users in schools, colleges, Universities, Public libraries and corporate sectors etc. Librarian's common work is to provide access to information to all who seek it. Now, the common future includes Internet and e-books, digital information, wired communities, virtual buildings and global information sharing. Therefore, it is necessary that the National Library Association should have all the working professionals at different levels as its members to sustain the profession and professionals in all the critical junctures. ALA committee on Education has developed a draft statement of professional core competencies which would under grid LIS programs goals and care requirements. The aim of the proposed core competencies include, professional ethics, resource buildings, knowledge organization, technological knowledge, knowledge dissemination service, knowledge dissemination -education and lifelong learning, knowledge inquiry-research, and institution management (ALA, 2006).

6. American library associations and library associations (UK) in international scenario

The American Library Association and the Library Association (UK) have been in existence for over 100 years and their impact on the advancement of librarianship in their respective countries is well known. American Library Association to promote the library interest of the country by exchanging views, reaching conclusions and inducing co operation in all. Initially contained to holding annual meeting, the ALA over these years have worked wonders by "exchange views "resulting in to reaching conclusions". So was the case with the library Association the impact of these for pioneer has been worldwide.

The contribution of library Association in other industrialization countries is also well known but relatively little known of the effect which such associations have had in these areas of the world which are commonly referred to as developing countries (Stephney, 1991). Their professional vision must reconcile with the vision and mission of the organization of which they are a part. The information generation, provision, and communication tasks may be done by libraries in tandem with other units or in a completely different set-up. Associations and Professional Societies are powerful forces representing the voice of the professional community to solve the problems related to the welfare, status, working conditions, physical facilities, education and training including the research and development activities. Although the central purpose of the associations has always been to serve the needs and to protect the interests of the community, they strive to broaden the purpose and serve the overall needs of the nation (Opena, 1996).

Michael Gorman, ALA past president in American libraries to highlight concern for a profession that needs to refocus professional training and standards for that training. Associations become more common and significant as society advances in Science and Technology, complexity and scale and hence their study is becoming the part of study of social change. In the contemporary situation, due to rapid social change, associations are important as a means of organizing people in order to achieve new ends. They are also of great significance to the professionals in that they reveal cultural values and goals that the members themselves are unable to formulate. Another important aspect of rapid social change is the way new forms of organizations create new roles and relationships. But there is a widespread change in the scenario of professional association's roles and objective towards society now. The concept of social networking, a web 2.0 version facility has in store new concepts that can enhance the images of the professional associations. They can become more pro-active to device and develop out-reach programmes, not for the profession and professionals within, but outside in the realm of entire society. (Michael J Miller, 2007).

7. Indian Scenario

India is a land of One Billion people- about one sixth of the whole world. Our civilization dates back to many thousands of years. India is land of many religions, many cultures and many languages. Unity in diversity is the watchword of Indians. Though India has suffered social, economic and educational set back due to the frequent invasion and as a consequence of transfer of power from the Mughal to the British, she also gained much that proved to be of lasting value. The contact with the west had opened out a window through which her people could look at a world, which was rapidly expanding, and making progress in material attainments. There are few library associations in different part of India whose contributions to the development of national consciousness were immense and deserve to be remembered by the future generation of library professionals. Association is a yardstick for measuring the growth of awareness of problems and needs of a country with in a given time. Founding fathers of Librarianship in India have very clearly visualized the commitment of the associations to the following vital aspects;

- The furtherance of library movement in India.

- The promotion of the training of librarians
- The improvement of the status of librarians

Some of these activities are well reflected in the overall performance of Indian Library Association, Bengal Library Association, Andhra Pradesh Library Association, Andhra Pradesh Public Library Association, Madras Library Association, Karnataka Library Association, Punjab Library Association and Kerala Library Association. There was time when the libraries and library associations joined hands with government to propagate government policies and programmes. Some of the Library and literary associations in India.. Such objectives of the professional associations have taken a back stage today, due to more conservative and materialistic approach adopted by them of late. The associations in their formative period were adorned by the men of eminence who have dedicated themselves to the cause of national development. They were great visionaries supported by very committed people who were the first rate scholars in their own field of activity and worked to fulfil the objectives set by the elders.

Library Associations and Societies, Academies, Trusts and Foundations have endeavoured a lot to give a new face-lift to the professionalism in India. Presently, there are associations and societies representing different types of Libraries and Information Centres. Most of them are making consistent efforts to develop the associations on the pattern of the associations of United States of America and United Kingdom. Many of them are emulating the world-recognized associations. But, there are some constraints of peculiar nature, which are coming in the way of progress (Khurshid, 1989).It is observed that the associations in spite of national and regional recognition constantly striving; In spite of the success story of the achievements of the library associations, there are some lacunae in the library development programmes in India. The reasons for this are many. India is a vast country having different political parties both at the centre and the states. The fluctuations in governments are very common. Whatever the best work done in promoting the library development with the mediation of the Associations may or may not be continued. Hence the development of the libraries is hampered. Even the Associations have inculcated the spirit of the political system and more involved in elections and making efforts to gain the power. This has resulted in slowdown of the development. Associations at the National level like ILA, IASLIC, and SIS have done some noticeable changes and developments. They are hardly continued by the next group of office bearers. They may go for their own strategies. Therefore the Associations have to have a plan of action to withstand the test of the time.

It is strongly felt that the Associations should take a broad outlook and consider the following aspects in order to gain the national and international recognition.,

- Maintaining the task force of members to analyze professional problems and to find ways to solve them.
- Strive for representing the government formed task forces to form a part of the nation building.
- Conduct tests and inspection and grading services to help and ensure professional satisfaction.

- Developing standards, grade-and-quality labelling to help the professionals to choose right products to serve the needs of the users.
- Workout the method of operation to introduce accreditation and assessment of Library and Information Science education and training.
- Formulation of lobbying group to interact with the administrators, management, bureaucracy and the local governments to impress upon them the need for giving the library due consideration of essential services.
- To workout the practical and viable norms and standards for LIS programmes through distance mode of education.
- To formulate national Information Policy and advocate for its implementation.

In this direction Library Associations in India have made very marginal progress. National Associations have the Special Interest Groups in very vital aspects of the professional matters like Library Legislation, Academic Libraries, Special Libraries, Government Libraries, LIS Education and Research, Information Technology Application etc. But the aspects of Standardization, Accreditation, and Curriculum Development providing choice based credit system, interdisciplinary research, collaboration and linkage with national and internationals organizations and associations etc., are not given serious thought. Time is ripe and the new millennium demands that the appropriate action be taken by the association in India in this regard. Padmashri *Dr.S.R. Ranganathan*, the father of library movement in India has guided the activities Madras Library Association since its inception with his multifaceted professionalism. His contribution to ILA and many other regional library associations are worth appreciation. He was responsible for inspiring innumerable followers all over the country to carry the mission forward. The achievement of ILA, IASLIC, RRLF and SIS have set a good trend of bringing our publications, organizing seminars, conferences and workshops, promoting education and research encouraging the regional and local level associations. Comparatively speaking much more remains to the achieved by these organizations.

8. Role of national knowledge commission

Providing access to knowledge is the most fundamental way of increasing the opportunities and reach to individuals and groups. Therefore, means must exist for individuals who have the ability to receive and comprehend knowledge to readily obtain it. This also includes making accurate knowledge of the state and its activities available to the general public. The role of libraries in providing widespread and inclusive access to knowledge is widely acknowledged. In today's context, a library has to play two distinct roles- to serve as a local centre of information and knowledge, and to be a local gateway to national and global knowledge. To achieve this goal, existing libraries must modernize their collections, services and facilities, become more pro-active, and collaborate with other institutions, agencies and non-governmental organizations (NGOs) in order to develop a community based information system. Recognizing that the Library and Information Services sector needs immediate and sustained attention in order to fulfil its potential, National Knowledge Commission constituted a working group on libraries, composed of experts in the area. The Working Group formulated its recommendations after holding

extensive discussions with a wide range of professionals. National Knowledge Commission recommendations on LIS were submitted to the Prime Minister in 2006. The need to user modern information and communication technology to meet the challenging needs of LIS sector has been widely recognized. Some of the issues considered by National Knowledge commission include institutional framework of libraries, networking LIS education, training and research; modernization and computerization of libraries, maintenance of private and personal collections, and staff requirements to meet changing needs (National Knowledge Commission, 2006).

9. Conclusion

In the Knowledge society, creation, building and developing knowledge infrastructure, is one of the main functions before the government and others. The Professional associations, especially national library associations have a greater role to play in this context. Libraries since the early ages of civilization are engaged in the process of preserving knowledge for posterity. Today they have major role to play, as the knowledge society concept has widened to entire population of a nation and the professional associations have to be pro-active, to join hands with others, the NGOs and Government, to participate in the social development work. The ICT has provided for an excellent facility in this regard, through various avenues, such as web portals, blogs and so on. The Library associations have, through the services provided by their members, understood the informational needs of the society. The Information Literacy programmes which were confined to the four walls of the Libraries hence before, can now be spread across the length and breadth of the society, to empower the society to search and gather its own information. It is envisaged that the national associations in the knowledge society will enable and empower the professionals to promote the use facilities within the libraries and how to make the libraries a national asset. Associations will also set the mindset of the members that though their role is changed in the event of fast growth of Internet, they will be more necessary than ever for the healthy growth of the knowledge society. All said and done, if librarians are united in the association the intellectual capacity of the country can be enhances in many folds and foster this essential resource for the 21st century.

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SERVQUAL: A Study on User Expectation and Quality Perception of CMR Institute of Technology Library, Bangalore

Khaisar M Khan **Pradeep Hegde** **Vishala B K**

Abstract

SERVQUAL is a tool which helps to assess services, to make decisions, to improve services and to achieve a better quality. The main objective of this paper is to analysis the service quality of CMRIT central library, Bangalore. The study was based on structured questionnaire method with subsequent interview. The score for each of the Expectation and perception statements were measured and calculated the Gap Score for each of the statements. The weighted score is measured by calculating the important weights for each of the five dimensions of service quality constituting the SERVQUAL scale. The study found that the gap score of the dimension 'Assurance' is maximum (i.e.,150.5) when compare to other dimensions. Finally, the study concludes with useful suggestions and recommendations for the improvement of service quality.

Keywords: SERQUAL, Quality, Library & information centers, CMRIT

1. Introduction

Academic libraries are facing two major threats: a global digital environment and increasing competition. They must improve the quality of their services in order to survive. Earlier, the quality of an academic library has been described in terms of its collection and measured by the size of the library's holdings and various counts of its uses. Measuring the quality of a service can be a very difficult exercise. Unlike commercial product where there are specific specifications such as length, depth, width, weight, and colour etc., a service will have numerous intangible or qualitative specifications. In addition to that there are expectations of the customer with regard to the service, which can vary considerably based on the range of factors such as prior experience, personal needs and what other people may have told them. The concept of libraries have changed drastically, present libraries are working with the aim of 'user satisfaction'[1]. Users are getting satisfied when the library is able to rise to their expectation or meet the actual needs. A quality service is said to be one, which satisfy the users' expectation, resulting in a good experience. Throughout the history, libraries were mainly concerned with collection development and processing. SERVQUAL is a mechanism to shift the assessment of quality of a library from the traditions of measuring collection size and counting incidents of its uses, to begin investigating how the provision of services relates to the library users' service quality expectations. SERVQUAL has been used in various service industries, including academic, public, and special libraries. It is important for libraries to know how well their performance by getting feedback from users because it is the factor for libraries to succeed in service performance[2]. The present study to examine the service quality of CMR Institute of technology library, Bangalore using the

SERVQUAL model, explored how the service factors derived from the factor analysis were related to user expectation.

2. 'Quality' in library and information centers

The quality of library has been measured in terms of size- its collection, budget and manpower. Many librarians believe that quality is directly related to the size of the budget. In recent past, this concept has been changed towards the nature of service rendered by the libraries and not merely on the collection and size. However, in the present day context, listening to the voice of the customer is very important and the reliance on the traditional methods might not be sufficient to assess the quality and effectiveness of the library from customers' perspective[3]. Service quality is one of the most talked about topics in business as well as service sectors. Service quality is viewed as the comparison of what the customer expected prior to the use of services and the perceived level of services received.

3. SERVQUAL – a methodology for measuring service quality

The SERVQUAL approach to the measurement of service quality has attracted considerable attention since it was first introduced by Parasuraman et al. in 1985 and further developed by them in 1998. Donnelly and Dalrymple stated that "The approach starts from the assumption that the level of service quality experienced by customers is critically determined by the gap between their expectations of the service and their perceptions of what they actually receive from a specific service provider".[4] The difference between perception and expectation is characterized as a 'gap'. They devised a conceptual framework called 'SERVQUAL' - to measure these gaps. After decades of intense research in various service industries, the instrument designers suggest that SERVQUAL provides a basic skeleton and it can be adapted to any service organisation to measure service quality with appropriate supplements to fit the nature of service provided. Since its conceptualisation in 1985 and refinement in 1991, many researchers have used. SERVQUAL in service industries including library services to measure service quality from customers' point of view. Studies using SERVQUAL in academic, public and special libraries have varied from testing one service (Inter Library Loan) to testing the whole range of services.

3.1 SERQUAL Model:

The SERVQUAL model proposes five dimensions upon which customers evaluate service quality.

Tangibles : "Appearance of physical facilities and materials related to the service"- It includes appearance, infrastructure, equipments etc.

Reliability : "Ability to perform the service accurately and dependably" - giving the rite information at rite time.

Responsiveness: "The willingness to help customers and provide prompt service" . - It refers to timeliness and promptness in information service

Assurance : "Knowledge, competence and Courtesy of employees and their ability to convey trust and confidence in the customer towards the service firm" - Competency refers skills and knowledge

required to provide information service. Courtesy involves politeness and friendliness in service provider.

Empathy : The ease of access, approachability and effort taken to understand customers' requirements. [5]

The Gap score is a reliable indication of each of the five dimensions of service quality. Using SERVQUAL, service providers can obtain an indication of the level of quality of their service provision, and highlight areas requiring improvement.

4. Objective of the study

The major objective of the study is to analysis the service quality of CMRIT central library. The specific objectives are as follows;

- To assess the overall service quality of CMRIT Central Library from the users perspectives.
- To identify the dimensions that determines the library user's evaluation of service quality.
- To investigate the essential attributes that librarians should allocate the resource for good service quality.
- To identify the problems faced by users while using library resources and facilities.
- To suggest appropriate solution to the problems encountered by library users.

5. Methodology

The data were collected through structured questionnaire. Questionnaire was prepared on the basis of five dimensions, focused on user's expectation and perception about services offered by CMRIT central library. Using data obtained from questionnaire, the score for each of the Expectation and perception statements were measured and calculated the Gap Score for each of the statements (where the Gap Score = Perception – Expectation). Average Gap Score has been taken for each dimension of service quality. Then, sum of the averages are divided by 5 to obtain an average SERVQUAL score. Finally, SERQUAL dimensions are ranked based on the percentage of satisfaction.

6. Analysis and Interpretation of SERVQUAL Scores

The study result reveals that all service attributes of desired expectations are not met. It is so common for people to expect more than they have in their day- to- day life. With the result of the study, it is noted that larger gap is related to the dimension 'Assurance' but the largest gap in all the statement is 'well configured computers and equipment in library'. It seems that users want to access this service but do not have enough computers and other multimedia facilities in library. The highly satisfied dimensional statement (i.e., 91%) is 'modern looking and spacious reading area', followed by 'library staff's interest/willingness to help the users' (i.e., 80.80%) and 'politeness and friendliness of library staff while providing service' (i.e., 80.20%).

The top five desired service expectations that commonly expected by all user group are 'convenient library working hour' (i.e.,218 score), 'library's commitment in purchasing of

resources on time'(i.e.,216 score), 'High speed internet connectivity in library'(i.e.,212 score), 'proper arrangement of print resources in library'(i.e.,208 score) and the 'willingness of library staff in understanding and fulfillment of specific needs of the users'(i.e.,202 score). The data from desired user expectations suggests to extend the library timings and to purchase the books and other resources on time.

S.N	Dimension	Statement	Expectation Score	Perception Score	Gap Score	Average for Dimension	Satisfaction percentage
1	Tangibles	Modern looking and spacious reading area for a good library	200	182	-18	134.5	91%
2		Easy Physical access of library (i.e., location of library building)	192	126	-66		65.60%
3		Well configured computers and equipment in library	196	94	-102		47.90%
4		Printers and Scanners for library	186	136	-50		73.10%
5	Reliability	Comprehensive print resources like books, journals, reports etc..	188	114	-74	119.6	60.60%
6		Good collection of offline electronic resources like CDs/VCDs etc..	182	118	-64		64.80%
7		Good collection of Online resources like Online journals, books etc...	198	110	-88		55.50%
8		Proper arrangement of print resources in library	208	128	-80		61.50%
9		High Speed Internet connectivity in library	212	128	-84		60.30%
10	Responsiveness	Automated library operation and services	184	128	-56	119	69.50%
11		Campus wide access (through LAN) of library resources	182	92	-90		50.50%
12		Provision for online reservation/renewals for library books	190	104	-86		54.70%
13		Library staff's interest/willingness to help the users	188	152	-36		80.80%
14	Assurance	Library Staff to understand and fulfill the specific needs of the users	202	154	-48	150.5	76.20%
15		Politeness and Friendliness of library staff while providing services	192	154	-38		80.20%
16		Knowledge of library staff to answer user's queries	200	154	-46		77%
17		Building awareness about resources and services available in library	190	140	-50		73.60%
18	Empathy	Networking/collaboration with other reputed libraries for interlibrary lending	184	96	-88	126	52.10%
19		Library's commitment in purchasing of resources(books, journals etc) on time	216	130	-86		60.18%
20		Convenient library working hours	218	152	-66		69.70%

Table 1 - Calculation of SERVQUAL Scores

7. Suggestions and Recommendations

After reviewing the results, the following suggestions and recommendations are presented for improvement of good service quality. They are;

- **The service attributes that library should allocate resources to improve the service quality:** most of the problems are related to insufficient library collection, quiet place for study, and service mind of library staff. Though the library budget is not sufficient, library should consider how to minimize the gap between users desired expectations and quality service perceptions appropriately. More computer terminals, internet access points must be provided.
- **Library orientation or training session:** the undergraduate student group are in very much need of proper orientation or training programs for the better use of library resources. The researcher believes that the formal training programs are not effective, so the libraries should seek alternative way of training programs.
- **Remote access service:** the data from desired expectations reveals that users want to access digital collection. The library should provide more facilities such as computer terminal, internet service, etc. to enhance remote access service.
- **Qualified library staff:** the staff knowledge plays important role in academic libraries. The library staff should be qualified and proactive in understanding user's needs.
- **Public relations about the services:** the libraries should announce services and resources via library homepage. It must be more informative and well organized. The structure of the homepage should be clear and easy to use.
- **Interlibrary loan service**: users opined about insufficient and out date library collection is at the highest rank. Though it is so common that no library can hold complete collections, effective interlibrary loan service must be enhanced to alleviate this problem.
- **Arrangement/ reshelving of books and journals:** the data from the user expectation reveals that the proper arrangement of print resources is highly important. The library should seek the better way for improving shelving speed and accuracy.

8. Conclusion

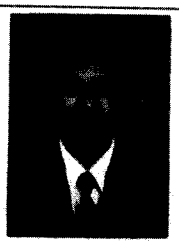
Today library introduces many new services either converting existing services into e-services or by developing and implementing entirely new services for searching, delivery and use of information. Such new or converted services (e.g. online service, portals, digitized collection, blogs etc.) will enhance the quality of library services. The information and communication technology is responsible for this revolution. But, the very existences of libraries are dependable on users' satisfaction. Users are getting satisfied when the library is able to rise to his or her expectation or meet the actual needs. A quality service is said to be one, which satisfy the users' expectation. Quality will be mainly defined by the speed and accuracy of reference and information delivery services, open access to both physical collection and online retrieval systems. The comprehensiveness and good support from library staff is most important needs in a library. The frequent analysis of users

expectations with perception through adopted version of SERVQUAL model on library resources and facilities will help to enhance the service quality and providing optimum library service.

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Significance of Information Literacy in E-learning Environment Perspective

Santhosh Kumar K T **Biradar B S**

Abstract

Libraries have always been an integral part of learning, helping learners find, evaluate and exploit resources. Developing information literacy skills, or e-literacy skills, is essential for academic and other support staff to be able to fully engage and exploit library resources in the e-learning system. E-learning is often regarded as an effective way to extend library presence through innovative services and to reach new communities. It is difficult to imagine what developments the future will bring, nevertheless the LIS profession will need to embrace these changes and move with the times to meet the needs of users. The paper presents an overview of changing perspective of learning environment particularly e-learning and significant role information literacy in effective understating of e-learning through information literacy programme.

1. Introduction

Over the past ten years, there has been a growing awareness about the potential role of E-learning in the context of Information Literacy, encompassing information literacy instruction through to information literacy education. E-learning is often regarded as an effective way to extend library presence through innovative services and to reach new communities. E-learning has evolved from the information and communication technological revolution and like other forms of technology; it is undoubtedly facilitating change across the education sector. Libraries have always been an integral part of learning, helping learners find, evaluate and exploit resources. Therefore it is unsurprising that changes in education are being felt in the library profession. With an increasing number of digital resources, librarians have a crucial role in navigating learners through the complex digital information environment. Information professionals in the education sectors in particular, are also becoming important members of an expanding team of learning support staff. Meanwhile within the library profession itself there is a marked interest in the set up and delivery of information literacy programmes, as librarians seek to capitalise on their unique role as educators.

2. Changing Role of LIS profession

The library profession has changed enormously in the last five to ten years. While the profession has always been evolving, adapting to new technologies, new media, and the ever-changing needs of users, more recently these changes have accelerated to match rapid developments in information and communication technologies. The Internet has dramatically increased the range of information available and the way in which it is delivered. It is hardly believable that the first web browser technology was only invented ten years ago. Similarly, e-mail, something taken for granted by many today, was unknown outside of Higher Education as little as ten years ago. In the early 1990s students were taught about developments such as 'Gophers' and used telnet connections to connect to

other universities online catalogues. Such technologies seem primitive and outdated today since the rise of the World Wide Web and broadband connectivity. It is difficult to imagine what developments the future will bring, nevertheless the library profession will need to embrace these changes and move with the times to meet the needs of users.

As the technology changes, so the skills that librarians need as professionals must evolve. Information and communication technologies have changed the expectations and demands of library users and the skills and training that the users need has also evolved. In higher education particularly, librarians are increasingly seen as being part of a wider group of learning support staff, which includes IT specialists, learning technologists, web editors and other staff. During the 1990s many libraries went through convergence with IT departments; however we are now starting to see the development of truly hybrid teams. In this environment, librarians have to recognise their role as crucial players in this growing profession of learning support staff, working in partnership with learning technologists, instructional designers, IT staff and education staff. Not only does this mean librarians need to work with new groups of people, but they need to be clear about the unique and highly relevant skills that they can offer. The ability to teach information literacy skills to learners and teachers alike must surely ensure their central role in the education sector.

3. Information literacy for academic Staff

Much of the work on information literacy has concentrated on skills and education for students or learner, however, a crucial area must be the information literacy levels of staff that are responsible for the development and implementation of e-learning. According to Big Blue Project carried out a survey of academic, managerial, administrative and technical staff, to establish how staff access and use information within their work environment. The research found there was a general lack of staff awareness about information skills and a lack of training for staff, in particular non-teaching staff. Where training exist it focused primarily on the development of ICT skills and where staff had received training in the development of information skills, this was mainly in the form of a one-off training session to support the introduction of a new service or resource.

Developing information literacy skills, or e-literacy skills, is essential for academic and other support staff to be able to fully engage and exploit library resources in the e-learning system. Engaging with academic staff to develop their own skills also makes them more likely to see the value of building these skills into their courses for students. Building on information literacy programmes offered to students, library staff will need to play an important role in delivering this type of information literacy education to staff. Information literacy skills for staff not only include knowledge of the range of resources available in the digital library, but it also includes teaching a member of staff to build an online reading list and add stable links to electronic journal articles, knowledge of copyright and licensing arrangements for electronic resources etc. The library staff will increasingly be called upon to offer guidance in these areas through a variety of means such as:

- One to one training and support for guidance on specific issues

- ❖ Group training sessions for more routine problems.
- ❖ Documentation (printed and web based) that staff can consult on a need to know basis

It is important that information literacy programmes are not exclusively designed for academic staff or those at the front line in the delivery of e-learning. Library staff should recognise that there is often a team of people who are involved in any e-learning project.

4. Teaching role of Librarians

In the past of the graduates entering into the library and information profession, few would say immediately that they were drawn to librarianship to teach. Yet teaching is something that many librarians routinely undertake, through a variety of means. As computers became widespread throughout organisations, increasingly librarians have needed to teach using computers. This started out as teaching users skills such as searching the online library catalogue, online databases, formulate Internet search strategies and use a variety of subject specific databases and electronic resources.

The curriculum of library schools has changed dramatically in the last few years due to the developments in ICTs. However, it is not clear if newly qualified librarians are graduating with the full set of skills that they require to teach. Information literacy theories and principles are well and good, but librarians increasingly need practical skills to be able to teach. Similarly, topics such as learning theories, pedagogy and e-learning are yet to be incorporated into many library school curriculum. It is noteworthy that one topic that has been added to many curricula at library schools is research methods. It has been increasingly recognised that a significant amount of library and information work is project based and there is an obvious need to ensure the profession is equipped with the appropriate research skills. However, the role of librarians as educators, teaching information literacy skills has witnessed an enormous growth in the last ten years. It is imperative that library schools provide their graduates with the appropriate skills to carry out this type of work.

Another important issue is the need to incorporate information literacy skills into the curriculum as early as possible. The lack of adequate professional librarians in many educational institutions is a key problem. One way of tackling this is for teachers to recognise the important role of the librarians. For this reason, Price and Secker (2004) argue that information literacy needs to be an important part of the education of trainee teachers, and that teachers must be encouraged to work with librarians. It is advocating that the partnerships between these professions must be strengthened.

5. Marketing of E-learning

As with any web-based product or service, e-learning demands strict attention to marketing basis. Success comes by striking a balance between the expectations and needs of users, while achieving the libraries goals and objectives for e-learning. The following are basic marketing elements in promoting e-learning programs:

5.1 Audience focus groups

Site review sessions held with representatives from user communities to evaluate web site design and functionality, content and navigational assumptions.

5.2 Awareness generation

Web banners, scheduled webcasts, online tours and seminars, news releases and other web-enables promotional approaches are used to drive site traffic and ensure repeat visits. Keeping the content fresh and the audience aware of the changes is a key success factor

5.3 Fulfilment

The purpose of creating awareness is to drive demand for your e-learning offerings. Ensure the fulfilment model is clear, functional and easy for the user to navigate. Fulfilment is the method or methods by which e-learning users receive what they asked for.

5.4 Site usage statistics

Ensuring good usage statistics and survey information becomes vital to your success. Daily site visits (hits), time spent at a particular link, explicit survey responses, site penetration (most and least popular links), time spent in a particular URL (frequency of repeat visits) and online test results are all examples of usage statistics that will help you to analyse the effectiveness of your e-learning program.

5.5 User satisfaction

Give the user plenty of opportunity to ask questions, get help and provide feedback. The e-learning sites should provide for online help as well as web-posted feedback summaries providing vital input to content providers.

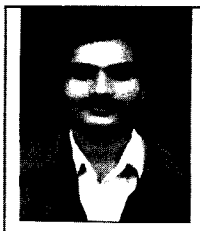
6. Conclusion

E-learning is offering exciting and new possibilities which the library profession need to reach out and seize. E-learning is changing the role of information professionals and offering them new opportunities to capitalise on their expertise. Through the delivery of information literacy programmes, which are both timely and integrated, partnerships with teaching and learning support staff can be strengthened. Librarians need to work with new groups of professionals, develop new skills, in particular teaching skills, which enable them to deliver these programmes where appropriate, using technology. The key to success is to get out of the library, build partnerships with teachers and learning technologists and infiltrate their networks. As learning and teaching environments develop, librarians are required to change their own understanding of information literacy skills instruction, particularly in terms of how to understand and make optimum use of new E-learning platforms and academic content management systems to help students construct social knowledge and critical thinking. Librarians need to ensure their place in the virtual world of learning is as central as it was in the physical world.

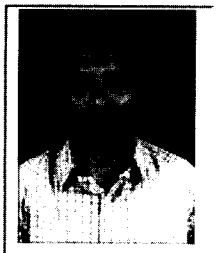
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Synergy between Marketing Mix and Library and Information Services: An Innovation for Both Management and Library Science

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Abstract

Now a day's Library service have become a booming industry in service sector and hence we can observe the synergy between marketing mix and library and information service. We can see all the three types of innovation in the library services like Product innovation, Process innovation, marketing innovation. This paper tries to connect the golden rules of the Mr. Ranganathan in the light of marketing concept. And have tried to elaborate the growth of marketing in library and information services

Keywords: Marketing of management, 7ps marketing, Five laws of library science

1. Introduction

A library is organized for use and maintained by any public body, an institution, a corporation, or a private individual. Public and institutional collections and services may be intended for use by people who choose not to - or cannot afford to - purchase an extensive collection themselves, who need material no individual can reasonably be expected to have, or who require professional assistance with their research. In addition to providing materials, libraries also provide the services of librarians who are experts at finding and organizing information and at interpreting information needs. Libraries often provide a place of silence for studying, and they also often offer common areas to accommodate for group study and collaboration. Libraries often provide public facilities to access to their electronic resources and the Internet.

1.1. 7Ps of Marketing Strategies of libraries

Strategy is a comprehensive, integrated and coordinated plan that combines four marketing elements, commonly called the '**4Ps**' they are: Product, Price, Place, and Promotion and **3Ps** of the marketing mix are: People, Physical evidence, and Process. As service marketing, we can also apply the 7Ps of marketing mix for the library products or to the customers

2. Libraries & Marketing

Traditionally, marketing is correlated with profit and all the marketing efforts are considered to be for increasing the profit. We consider that libraries are not for making profits, it's only because the main function of a library is considered to be dissipation of knowledge throughout the world. Another reason is because the library professionals are not taught marketing and do not see marketing to have anything to do with running a library. The reasons for implementing marketing strategies in library are not much different from other materialistic world. Some of the reasons identified for marketing orientation in library and information services, are

- ❖ To helps in managing libraries better;
- ❖ To brings commitment to customer focus;
- ❖ To publicizes the benefits of the library services and listening to customer's needs;
- ❖ To helps in making users feel better that they use library again and again;
- ❖ To improve the library's image.

There are several different concept of marketing for library, which can be broadly divided into four philosophies:

***(a)* Marketing as techniques**: Marketing is a tool; set of techniques and processes which is applied to all aspects of

- ❖ Service Planning,
- ❖ Service Delivery And
- ❖ Service Evaluation.
  - o Effective service planning begins with marketing research; analyzing the needs and preferences of the consumer/user.
  - o Effective service delivery requires having market awareness; well-planned strategy for promotion.
  - o Effective service evaluation needs to start with creating good market response; evaluate the response and feedback of customers and prospective customers (users, prospective users and also non-users) about service performance.

***(b)* Marketing as philosophy:** The principle of marketing is "The customer is the beginning and end of marketing activity". The satisfaction of a customer is primary concern of marketing

***(c)* Marketing as approach**: Marketing does not require the creation of a separate department and the appointment of a person to look after this department, but marketing is every one's function from top management to the operational level management, it is a total organizational effort.
Inter-functional coordination and cross-cultural perspective becomesimportant in order to remove communication barriers, work in teams andempower the work force.

3. Marketing Practices in Libraries

Library marketing is critical for any library professional in order to spread the knowledge to word and also about their library. It does not matter what type of library, it does not matter how large or small the library is but the objective is library, the services, the worth to the information hungry community, the administration, the staff, and the users.

The steps of the marketing of library product

Step-1 – Understand the Customer's Requirement

The first and fore most things that need to be done in any marketing activity is to understand the customer's requirement. Similarly for library also the reader community's requirement and wants (not needs) is to be identified.

The questions should be designed such that it can answer:

- Are there any segments in my reader community that are being left un serviced or provided with inadequate service?
- Does the reader community want or value unique competitive offering?
- Is there too much competition in the segment of the community served?
- How does my potential customer or reader get "information products and/or services" (in a store, on the web)?
- What kinds of habits does my customer have?
- Who are my target customer's primary motivations for seeking out information?

Step 2 – Pick a Niche

Once the customer's (reader's) need and other basic questions are answered, the next important thing to be done is pick a niche. If we say that target customer is "everybody" then nobody will be the customer. Today the information marketplace is filled with competition. Carve out a specific niche based on reader community's needs and dominate that niche. The thing that can be done is to develop library that specializes in a particular type of resources, or specializes in enormous in a categorized resource.

Step 3 – Develop your Marketing Message

The marketing message not only tells the target users about a library facility, but it also encourages them to use the service.Two types of marketing messages should be developed. One message should be short and to the point. The second type is a more complete marketing message that will be included in all marketing materials and promotions. To make the message exciting and convincing, it should include the following elements:

- An description to target prospect's problem
- An explanation about how we can solve prospect's problem.
- An explanation of the benefits people will receive from using the solution.
- Examples and testimonials from customers

Step 5 – Determine your Marketing Medium(s)

The marketing medium is the communication vehicle that is used to deliver marketing message. It is important to choose a marketing medium that gives the highest return on your marketing investment.

Step 6 – Set Marketing Goals

Goals are critical to the success of any institution. When creating goals, institution has to ensure that the goals are SMART:

1. **S**pecific
2. **M**easurable
3. **A**chievable
4. **R**ealistic
5. **T**ime specific

Step 7 – Develop the Marketing Budget

Determine how much money is available; detail the financial aspects, and how the implementation of the plan will be profitable to the library.

5. Ranganathan's Five Laws of Library and Marketing Mix

Renborg (1997) considers that "marketing is not new to libraries, it is as old as modern librarianship" and according to him the origin of marketing dates back to 1870s. The approaches of library experts like Melvil Dewey, SR Ranganathan, and others were marketing oriented. Even Dr. Ranganathan's five laws of library have been seen in the light of today's marketing concepts (Ranga, 1986). If we refer Mr. Ranganathan's Five Laws of library in the light of marketing concept, in the following manner (Jain et al, 1999b):

a) **Books are for use:** (Maximize the use of books/ information. – repeated purchase of a product: The first law constitutes the basis for the library services. Dr. Ranganathan observed that books were often chained to prevent their removal and that the emphasis was on storage and preservation rather than use. But he did not reject the idea that preservation and storage were important, but he stated that the purpose of such activities is to promote the use of them.

b) **Every reader his/her book**: (Reader is prime factor and his/her need must be satisfied- Readers are customers whose need to be satisfied): This law suggests that every member of the community should be able to obtain materials needed. Dr. Ranganathan felt that all individuals from all social-economic background were entitled to use library service, and the basis of library use is education and spread of knowledge.

c) **Every book its reader:** (Find a reader for every book – Target market identification)

This principle is closely related to the second law but it focuses on the item itself, suggesting that each item in a library has an individual or individuals who would find that item useful. Dr. Ranganathan argued that the library has to devise methods to ensure that each item finds it appropriate reader. One method involved the basic rules for access to the collection, most notably the need for open shelving.

d) **Save the time of the reader:** (Organize information in a way that the reader finds the wanted information promptly – providing information to the customer and creating awareness and meet customer needs): This law is recognition that ability of a good library to meet the needs of the library user efficiently. To this end, Ranganathan recommended the use of appropriate business methods to improve library management. He observed that centralizing the library collection in one location provided distinct advantages. He also noted that excellent staff would not only include those who possess strong reference skills, but also strong technical skills in cataloging, cross-referencing, ordering, accessioning, and the circulation of materials.

e) **A library is a growing organism:**(Emphasis is on comprehensive and evolutionary growth – developing other 3p's of service marketing – People, Physical evidence, and Process): This law focused more on the need for internal change. Dr. Ranganathan

argued that library organizations must accommodate growth in staff, the physical collection, and patron use. This involved allowing for growth in the physical building, reading areas, shelving, and in space for the catalog.

6. Marketing of library and information services

Presently, the focus of the library and information services marketing is on relationship marketing, internal marketing, image building, and customer loyalty. Such concepts make marketing a library wide philosophy and desire involvement of one and all from front-line staff to board members. So, the marketing concept has changed from selling concept to product development and customer focused concept. Concepts like customer services, service quality, and relationship management played a vital role in development of marketing from boardroom concept to whole organization concept.

7. Difficulties in Market of Library and Information

In management, managers are thought to manage **IF5M**, which stands Information, Facility, Men, Money, Machine, Materials and Methods. Librarians are dealing with a very important resource called "INFORMATION", and are well recognized for services. They have users who have a need for information and are willing to use the library whenever need arises, recognize if they are satisfied with the service, and can recommend others to use the library that pay attention to their needs. The library and its users are natural partners. But, the customer does not see what he or she will be getting prior to being accessible with the information.

In short there are many worries involved, but it is not just information a customer or the user gets when using the information department, he is also served, served from the staff, in a user friendly environment, or user supported facilities. However, if customers believe that the service they have received is the best available then they will use it again. It is by adding value to information through service delivery that information managers can encourage usage of information service.

8. Conclusion

Marketing approaches are proving to be effective in assisting libraries to adjust to changes in its client base and will ensure that services delivered continue to fit the needs. The products and services provided by libraries range from knowledge access and research support to printing services and the provision of information skills, supported by one on one assistance and advice. Strategies examining the distribution and delivery of services and their successful promotion will ensure that those who need information are provided it. The budget cuts and the advent of sophisticated technology in the libraries have opened up the new vistas for marketing information products and services. If the libraries fail to catch hold of the opportunities, the scene will be captured by the commercial vendors. We know that the users do not mind paying for the services if they are useful and available at reasonable price. Therefore, the marketing policy of the libraries needs 'careful planning, structuring, execution and evaluation with regular review'.

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The Present Status of Bangladesh NARS Information System and A Proposed Model for the Digital Upgradation

Susmita Das

Abstract

The study was undertaken to see the present status of information management of the National Agricultural Research System (NARS) of Bangladesh, comprising ten national Agricultural Research Institutes and Bangladesh Agricultural Research Council. It also tried to generate a Model of Information System Development for the NARS for the improvement of the existing information services. Agricultural development is very much dependent of science and technological support undertaken by the NARS. It has been suggested that BARC and all research institutes under NARS to expand the electronic connectivity of the Agricultural Research Information System (ARIS). In the present approach, ARIS cell will be established at each institute and providing the facilities down to the research divisional level in the head quarters and outreach centers of each research institute. All the researchers are expected to have access to the World Wide Web, interlinked between in-country and foreign data source and will get on-line library facilities.

Keywords: NARS, BARC, ARIS, Local area network, Wide area network

1. Introduction

Agriculture is an important source of national economy and majority of the people are dependent on agriculture for food security, employment and livelihood. The NARS has developed huge number of production technology from research generated endeavor which are applied to the field. As a result of the application of technology, foodgrain production has tripled during the last three decades and production of fruits, vegetables, pulses, oilseed also increased significantly. Undoubtedly, the achievements of Bangladesh NARS have a crucial role to play in generating farm technology that acted as engine of growth in agriculture. Modern production technologies, both variety-and management-based have been transferred to extension departments for their dissemination to farmers.

Under the newer challenges, like population growth, lack of agricultural land due to urbanization, climate change, degradation or loss of bio diversity, agricultural production system is being threatened. Also potential exists in the science technology in Bangladesh like ICT and global knowledge on information management. Keeping this in view, the agricultural research system has to be re- organized to accelerate knowledge transfer through advanced knowledge of information management. To improve support for continued quality research the scientific community also needs various information from home and abroad. Therefore, timely delivery of this information, although a bit complex task, has been ever demanding.

2. Objectives of the Study

- To identify the existing information services and facilities provided by the NARS;

- To identify the requirement of the scientists and professionals working in the NARS;
- To generate a Model of Information System Development for the NARS for the improvement of the existing information services.

3. Methodology

The researcher has applied the traditional method of empirical social science research. A structured questionnaire with both closed and few open options were administrated to elicit both quantitative as well as qualitative information from the respondents relevant to the study in the light of their observations and experiences.

Table 1: Institute Wise Respondents for survey

SL No.	Name of the Library	Location	Total number	Respondents
01.	Agricultural Information Centre (AIC) of (BARC)	Dhaka	51	30
02.	Bangladesh Agricultural Research Institute (BARI)	Gazipur	700	40
03.	Bangladesh Rice Research Institute (BRRI)	Gazipur	230	40
04.	Bangladesh Jute Research Institute (BJRI)	Dhaka	200	10
05.	Bangladesh Institute Nuclear Agriculture (BINA)	Mymensingh	100	10
06.	Soil Resource Development Institute (SRDI)	Dhaka	450	10
07.	Bangladesh Sugarcane Research Institute (BSRI)	Ishurdi	758	20
08.	Bangladesh Livestock Research Institute (BLRI)	Savar	35	10
09.	Bangladesh Forest Research Institute (BFRI)	Chittagong	100	10
10.	Bangladesh Fisheries Research Institute (BFRI)	Mymensingh	65	10
11.	Bangladesh Tea Research Institute (BTRI)	Srimangal	30	10
	Total		**2026**	**200**

(Source: Survey Data, 2011).

There were eleven (11) respondents in the questionnaire on the library service providers (Librarians) of eleven NARS institutes of Bangladesh and 200 respondents from the NARS institutes of which all of them were research scientists of different designation and academic qualifications. From BARC 30 respondents out of 51 participated in the survey. From BARI and BRRI each 40 respondents took part in the questionnaire. The respondents are all scientists from entry level to the top.

4. Literature Review

Most of the literature on the topic in Europe, America and Africa are not available in libraries and information centers in Bangladesh. Some works on the same topic are found in India.

Paskoff (1990) discovered that at the earliest use of agricultural libraries were created to serve state and national government agencies. He provided the real history of agricultural libraries and analyzed the different characteristics of those libraries. It came to

believe that a country development depends on the proper information services provided by different organizations like libraries. Meah (1994) delineated a superb picture of four agricultural libraries, their shortcomings, services and various systems followed by the libraries. He proposed some suggestions for the further development of the agricultural libraries in Gazipur district in Bangladesh. The suggestions made by him were really beneficial to the information personnel home and abroad.

Kaur (1995) analyzed the concept and described the growth of information services. He also discussed development of agricultural information services in India. He also depicted the present status of the information services in the libraries of agricultural universities and research institutes.

Sreenivasulu and Nandwana (2001) explored Networking agricultural information systems and services in India. They discussed in detail the Agricultural Research Information System Network (ARISNET) for India and its modules consists of Agricultural Research Personnel Information System (ARPIS), Agricultural Research Financial Information System (ARFIS), Agricultural Research Library Information System (ARLIS), and Agricultural Research Management Information System (ARMIS) and ARISNET management. They also reviewed the strength and development of Agricultural Libraries in India including institutional system of ICAR, State Agricultural Universities, and ICAR Institute Libraries.

Uddin (2002) depicted the present status of information services in the libraries of agricultural scientists and research organizations. He showed agricultural scientists and researchers the actual source of information needs. He reflected the agricultural information systems in Bangladesh. The climate, land, population, economy, a historical overview of Bangladesh agriculture, agricultural education, research and extension system of Bangladesh and role of NGO's in agriculture are stated. He proposed a network of agricultural information system in Bangladesh. His suggestion for necessary development of agriculture in Bangladesh has come to use to great extent. His work on agricultural information helped concerned people a lot to bind the scientist and the farmers of Bangladesh.

Rokade and Rajyalakshmi (2006) showed that electronic information services are the keys to the development of agriculture, agriculture education, research and agricultural extension education in India. They suggested that the agricultural information services rendered by the four agricultural university libraries in Maharashtra are important for the agricultural scientists, academic staff, students and other agricultural users. They found that in changing agricultural scenario and rapid development of agriculture science and technology, the importance of agricultural information service is vital to the progress of agriculture. They considered the importance of electronic information services for development of agriculture.

Shatberashvili and Maru (2008) explored the status of access to agricultural information and information exchange; the status of telecommunications; status of Radio and TV; organization and management of scientific and technical information systems and

services in agriculture; use of information and communication technology for scientific and technical information purposes; research to- farmer information transfer; problems in using ICT for information services in agricultural research and development were studied in all the eight countries of the region. They evaluated that use of the National and local TV and Radio for agro information dissemination in the CAC region.

5. Result and Discussions

The existing information systems and services of NARS, modern library facilities, some of the basic and general information of the libraries, the details about information materials processing, computerization and agricultural information network for efficiency are presented here.

Table 2: Institutional Information of NARS Library/Information Centers in Bangladesh

Catalogue	Automated	Card form	Both
Name of the Institute	BARC	BARI, BRRI , BJRI, BINA, SRDI BSRI,BLRI,BFRI,BTRI,BFRI	SRDI

(Source: Survey Data, 2011).

Table 2 represents the status of library service delivery. Only BARC and SRDI maintain automation in cataloguing and rest 09 libraries have card form which is old system. It shows that the system needs to be changed with the experience of BARC and SRDI. The statistics of the information materials are maintained in most of the libraries while three libraries do not maintain statistics. The libraries that do not maintain statistics are BJRI, SRDI and BTRI. For the sake of better service and discipline the three libraries should start statistics of library.

Table 3: Opinion about the Stocks of Periodicals for Research Work

Table 1.8: Opinion about the Stocks of Periodicals for Research Work

Name of the Institute	Inadequate	Adequate	Fairly Adequate
	70.00	20.00	10.00
02. BARI	12.50	25.00	62.50
	10.00	70.00	20.00
04. BJRI	50.00	20.00	30.00
	20.00	10.00	70.00
06. BSRI	75.00	10.00	15.00
	70.00	10.00	20.00
08. BLRI	30.00	10.00	60.00
	30.00	30.00	40.00
10. BFRI (Fisheries)	30.00	20.00	50.00
	40.00	10.00	50.00
Average	39.77	21.36	38.86

(Source: Survey Data, 2011).

Table 3 represents opinion of the respondents of NARS about the stocks of periodical for research work in percentage. About 40% of the total respondents have opined that the stock of books is not adequate to meet the demand of the respondents while 35 opined adequate. However institute wise picture is different. BRRI respondents opined satisfaction as adequate (70%) while respondents of BINA, BSRI, SRDI, BLRI and BTRI opined as inadequate.

Table 1.9: Opinion on Computerization of NARS Libraries (%)

Name of the Institute/(Type)	Library Should be computerized		Library Should have Internet		Browsing Internet	
	Yes	No	Yes	No	Yes	No
01. BARC (Autonomous)	93.33	6.67	93.33	6.67	86.67	13.33
02. BARI (Autonomous)	87.50	12.50	87.50	12.50	77.50	22.50
03. BRRI (Autonomous)	90.00	10.00	90.00	10.00	70.00	30.00
04. BJRI (Autonomous)	70.00	30.00	70.00	30.00	50.00	50.00
06. BINA (Autonomous)	80.00	20.00	80.00	20.00	60.00	40.00
05. BSRI (Autonomous)	85.00	15.00	85.00	15.00	70.00	30.00
10. SRDI (Government)	90.00	10.00	90.00	10.00	60.00	40.00
08. BLRI (Autonomous)	80.00	20.00	80.00	20.00	70.00	30.00
09. BFRI (Forestry) (Government)	90.00	10.00	90.00	10.00	50.00	50.00
07. BFRI (Fisheries) (Autonomous)	70.00	30.00	70.00	30.00	50.00	50.00
11. BTRI (Government)	70.00	30.00	70.00	30.00	60.00	40.00
Average	85.5	14.5	85.5	14.5	69.5	30.5

(Source: Survey Data, 2011).

Table 4 shows that three NARS institutes are run by the government and the rest are autonomous. All the libraries have replied positively in the field of computerization and using interest. A healthy amount of response is collected about the materialization of the library computerization process. Only 14.5% have opposed the idea. All the libraries should have internet facilities. Only few respondents voted negatively. Their percentage is only 14.5%. In the field of browsing facilities about 70% respondents have nodded by 'yes' and 30% by 'no'.

Opinion of Respondents on Adequacy of Information Materials (%)

Name of the Institute/ (Type)	Sufficiency of Existing Available Agril. Information Sources for professional work			Meeting Information Need from Professional Colleagues		
	Sufficient	Mod. Sufficient	Insufficient	Home	Abroad	Both
01. BARC	6.67	33.33	60.00	60.00	16.67	23.33
02. BARI	10.00	47.50	42.50	52.50	25.00	22.50
03. BRRI	12.50	42.50	45.00	57.50	30.00	12.50

04. BJRI	30.00	40.00	30.00	20.00	40.00	40.00
06. BINA	5.00	35.00	60.00	30.00	60.00	10.00
08. BLRI	20.00	60.00	20.00	60.00	20.00	20.00
10. SRDI	10.00	30.00	60.00	40.00	30.00	30.00
Average	12	41.5	46.5	47.00	31.50	21.50

(Source: Survey Data, 2011).

Table 6 shows that average 42% respondents think existing available agricultural information services for profession work sufficient and 46% insufficient. To meet information needs from professional colleagues 47% come from home, 31.5% abroad and 21.5% from the both.

6. The Needs of Digital up gradation of NARS

Bangladesh is a small agro-based country with heavy burden of large population. The country needs to improve existing production systems to enhance crop productivity in limited land, energy and natural resources to meet the diversified demand of increasing population. For this it is very much essential to enhance the capacity of the information management of National Agricultural Research System in Bangladesh through integrating modern techniques of information delivery. In fact national agricultural research systems (NARS) are main sources of generation and development of technologies and knowledge in agricultural sector, as the linchpins of agricultural development (Dalrymple, 2000).

To cast the proper light on the relationship between information and its user, two particular facets should be referred to. First our gathering, processing and diffusing practices of information aim at effective use of information in differing contexts layers of community, which results in enabling the users to get most privilege out of their work. Secondly information professionals should be aware of the potentials of the users, the techniques they adopt to get more relevant information and to devise some new mechanisms to improve access to information.

7. The Proposed Model Plan: Bangladesh Agricultural Research Information System (BARIS) in Bangladesh

Many developing countries in the world are in line with introducing and implementing ARIS for the overall development in the agricultural sector. For making national Agricultural Research Information System digital one it is the time to implement this proposed model system. The proposed information systems are expected to provide an organizational backbone to support information flow among the national agricultural research institutions. An ARIS aims to integrate and coordinate information flows and access in a country's agricultural research system so as to benefit its stakeholders through informed research and development activities.

7.1 The Definition and Goal of ARIS

An ARIS can be defined as a system that enables digital connectivity among institutions and stakeholders engaged in agricultural research within countries for sharing scientific, technical and research management information; and supports, in full or part, the infrastructure and services for electronic massaging and communication among participating institutions (Singh and Pal, 1998). Indeed, an ARIS aims to integrate and coordinate information flows and access in a country's agricultural research system so as to benefit its stakeholders through informed research and development activities (Maru, 2002).

The goal of the ARIS is to strengthen Information Management Culture using modern tools within Bangladesh NARS, so that agriculture research becomes more efficient and effective. The major objectives are to,

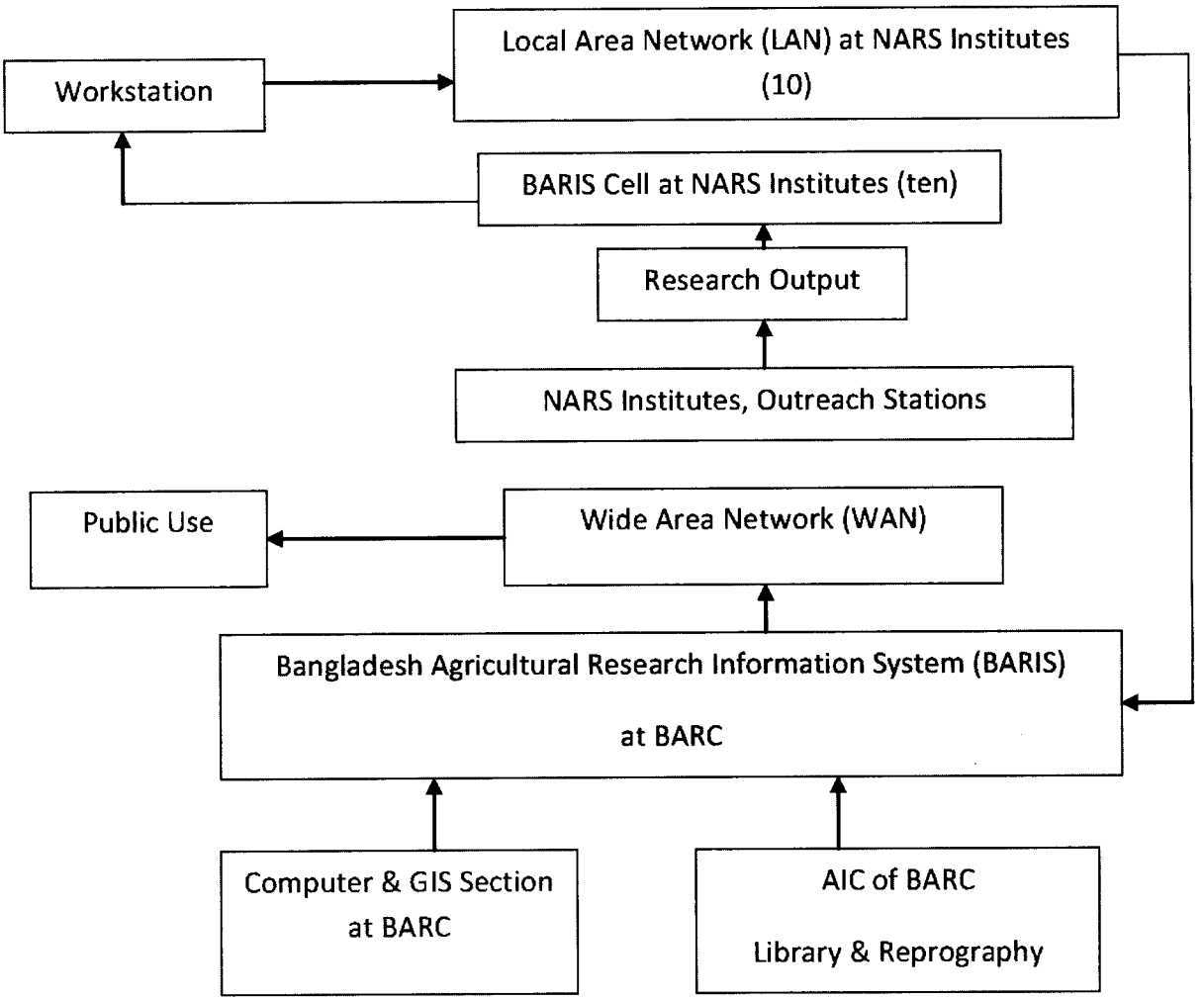
- put information close to the scientists through electronic connectivity
- enhance capacity of researchers and the institute as a whole to organize, store, and use the relevant information for research program development, execution and dissemination
- enable agriculture research to provide relevant information as technological support to rural stakeholders to improve their livelihoods
- institutionalize mechanisms to share information over NARS
- Improve the capacity to plan, execute, monitor and evaluate research programs, and
- Strengthen libraries and library network in the electronic access

7.2 The Ways of BARIS Implementation

Strategies to achieve above objectives include following activities:

- Creation of Local Area Networks (LAN) at BARC and NARS institutes head quarters as well as major regional research stations in different Agricultural Ecological Zones
- System integration of LAN and WAN servers
- Expansion of infrastructure for electronic connectivity at NARS institutes to provide access to majority scientists
- Training to Scientific, Technical and Office staff in the areas of computer applications, system management and office automation etc.
- Development of various databases and converting the databases of research, development and value-chain to multiple users
- Improvement of Agricultural Information Center and computer center at BARC including its existing library to develop a National library in agricultural research discipline
- Establishment of electronic linkages with Agricultural Information Service at Extension Agencies and other national libraries

Figure – 3 Bangladesh Agricultural Research Information Systems (BARIS) at BARC



7.3 A Framework for BARIS

It will be necessary that BARC and all research institutes under NARS to expand the electronic connectivity of the ARIS. The process was initiated during the previous project approach in late nineties. Through that project, hardware and software were supplied to many NARS institutes. But at that time, ARIS was not institutionalized and the electronic connectivity among different institutes was not established. In the present approach, ARIS cell will be established at each institute and providing the facilities down to the research divisional level in the head quarters and regional research stations as well as research centers of each research institute in the remote area. All the researchers are expected to have access to the World Wide Web, interlinked between in-country and foreign data source and will get on-line library facilities. Thus, BARC and ten different NARS institutes with their more than hundreds of regional/sub research stations and research centers will get these facilities. Public sector extension agencies of crop, livestock and fisheries will be electronically linked through their existing infrastructures and facilities.

7.4 BARIS Cells

For this purpose, ARIS cells have to be established at BARC and all NARS institutes. At present, each institute has a small division or department dealing with communication. Each institute has a small committee for ICT development. However, for the effective utilization of the facilities, communication cell at each institute needs to be strengthened and equipped with trained manpower and facilities. This cell will have to take the responsibility of all network development and maintenance for the institute.

8. Strengthening Agricultural Information Center and Computer Center at BARC

Both AIC and Computer Center of BARC will have to take the responsibility of oversight and backstopping of this expansion of electronic connectivity through connectivity to BARC and all NARS institutes. AIC will be responsible for gathering databases from all institutes and other sources. It will have electronic linkage with all NARS institutes, research centers, regional research stations and with information centers of public extension agencies through WAN connectivity. It will act as national repository of all agricultural research works including databases and publish research results/reports, important news etc. in the web. Provisions of databases facilities and WAN/LAN for BARC will be located and managed by this center. Computer Center will be responsible for software development and providing services to the NARS institutes. To facilitate the function, the existing vacant positions of AIC and BARC and Computer Center need to be re-designated and redistribute using the existing workspace.

8.1 Wide Area Network (WAN)

Connectivity with cluster server is proposed to be established at BARC, the apex institute of the NARS. With this facility at BARC, all research institutes can be linked with BARC as well as with each other through LAN server. For this, one cluster server with necessary accessories will be provided to BARC.

8.2 Local Area Network (LAN)

Strengthening the existing LAN connectivity as well as providing new LAN connection to other NARS institutes will require LAN servers in about 49 locations of different regional research stations and research centers of ten different NARS institutes having 500 nodes under LAN set up. BARI is the largest research institute where researches on high value crops are being carried out. Expansion of LAN servers in its head quarters and establishment of new LAN servers in its regional research stations and research centers will require LAN set up in 18 locations. Similarly, in all other nine research institutes and their regional research stations are planned to have LAN connectivity.

9. Recommendations

- BARC should undertake the responsibility for planning National Agricultural Information Network System for all agricultural libraries in Bangladesh to provide agricultural information to the agricultural scientists and researchers even beyond NARS. BARC should also take the responsibility of supplying hard and soft copies of the journals and books to the agricultural scientists and researchers in Bangladesh.

- The collection of standard computer, books, research journals, reports etc. should be increased in the agricultural libraries of Bangladesh in order to meet the information needs of the agricultural scientists and researchers.
- There is a need for wider circulation of agricultural publications and also wider circulation of information about new arrivals. This has to be done by a central agricultural information supply agency as hub, incorporating all materials at one place and this catalogue should be made available to agricultural scientists and researchers, extension workers, planners and agricultural policy makers etc.
- The BARC should conduct small courses to enable agricultural scientists and researchers to be aware of the generation of nascent information by National, Regional and International Agricultural Research Institutes.
- The NARS libraries must keep the informational standard database with the help of national and international agencies and organizations. For this task both the standards for database should be examined.
- The NARS institute should work under an umbrella of a unique networking system for rapid transfer of information so that they can formulate strategies based on information needs, identify first and relevant networked, information resources, develop successful research strategies categorizing networked information resources by their contact, format functionality and improve information seeking behavior through information network.
- The BARC authority should strengthen a networked information sphere so that the researchers and scientists can develop various scopes having a profound influence on seeking, accessing and using information network. It is impossible without the implementation of information network.
- The Bangladesh Agricultural Research Council (BARC) should establish agricultural resource centre in specialized discipline to meet the individual information needs of the agricultural scientists and researchers.
- The NARS libraries should use effective software of networking system so that all the scientists and researchers concerned can work under the same umbrella to get the latest information of their invention just with click of their computer mouse.

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Use of Biometric System at Father Muller Central Library, Mangalore

Janet Dotty Lobo

Abstract

The rapid growth in information Technology made an impact on Libraries. We are in the era of "convergence of information Technology". Biometric is the technology, which uses various individualistic attributes of a person to verify his or her identity. Biometrics uses a person's physical characteristics, viz., Digitized fingerprints, voiceprints, iris and retinal images, hand geometry and handwritten signature are all examples which identify us. Biometric is the time attendance and access control system used in factories, institutions etc., It is used to prevent theft. Software is used to convert the biometric input. This paper highlights on biometric system and its usage at father Muller Central Library, brief introduction of the resources and facilities available in the Library.

Keywords: Biometrics, Meaning, Software, Reports

1. Introduction

The Father Muller Central Library started functioning in 1985. The Central Library was shifted to the new premises in 2000. It was a long-standing dream of the institution that the library should have an independent building; thus the new building named as "Knowledge Centre" with the state of art facilities was inaugurated on 16th June 2011. The four storied complex consists of Central Library with Postgraduate and Undergraduate Sections, Reading Halls, e-Library and two spacious ultra modern conference halls. Fr Muller Central Library is catering the needs of Medical College, Nursing College, Homeopathic Medical College and Allied Health Science Colleges. Total strength of the Library is 2350.

2. Facilities and Services

The library is well equipped with Books, Journals (current and back volumes) Dissertations, E-Journals, E-books, WHO Publications, CD-ROMs & Video cassettes. Facilities such as Photocopying, Network Printer, Leased Line Connectivity, T.V., V.C.D. Player, Slide Projector, Reading rooms, and News papers and General Magazines Section.

The Library is automated with 'Easylib' software. The Bibliographical record of library holdings such as Books, Journals, Back volumes of Journals, CD ROMs, Dissertations, and WHO Publications can be accessed through Electronic Public Access Catalogue (EPAC). This facility is extended to all the departments from the Central Library. D-Space software is installed. Biometric Units are installed at the entrance of UG and PG sections. INFLIBNET-NLIST (National Library and Information Services Infrastructure of Scholarly Content) Programme.

3. E-resources

HELINET is a networking concept; it stands for **He**alth **S**cience **L**ibrary and **I**nformation **Net**work. The concept is adopted by RGUHS, Bangalore in 2001 to network all health science libraries under its affiliation and to develop a consortium for resource sharing. This has been linked to Fr Muller Central Library since 2003. The gateways covered in HELINET are:

- Science Direct
- MD Consult
- LWW & ADIS
- Wiley Blackwell
- BMJ
- Oxford University Press
- Springer
- Informa Healthcare

Up To Date: A unique resource for Clinicians and Patients is subscribed. The membership of the following institutions are availed to access their e-resources and to avail Inter Library Loan and Document Delivery service.

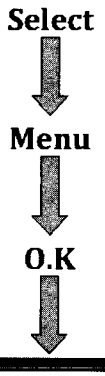
- American Library
- British Council
- DELNET
- Mangalore University Library

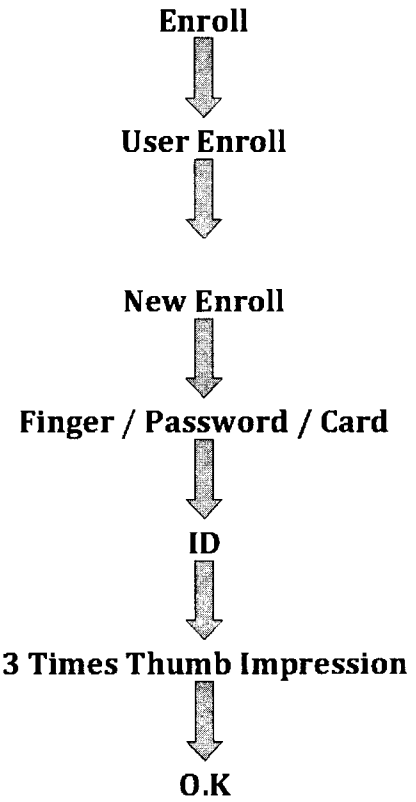
Components of Biometric Device

- A reader or scanning device
- Software that converts the scanned information into digital form
- A database that stores the biometric data for comparison

Fingerprint Scanner

Fingerprint scanner is installed at the entrance door of the Library, when a user enters the Library he/she has to scan her thumb impression over the biometric unit. The scanned thumb impression is stored in the system. In this system while closing the Library you have to upload the scanned impression in the software to get the report. The following steps are followed when a new user enrolls the biometric system:





Lock and Sensor: Lock & Sensor is fixed at the top of the Main Door. It is used to lock the Door, when a User uses the thumb over the biometric unit & if his/her ID number accepts his/her thumb then the system says O.K., immediately the Door will be opened to use.

Login to Software: To Login into the software, you must enter Correct User Name and the Password and then Press on the Login Button. If the user name and password are entered correctly you will get the following screen, failing which one will not enter the software.

Online Access Control & Time - Attendance Software: Clicking on this will open the Reader Add form from which the user can enter the details.

Reader Address

- Here to add the new reader you have to click - Add New
- To modify the details of the existing reader click – Modify
- To delete the details click – Delete
- To close the screen click– Close

Master Details: when you click on master Details the following screen appears on the computer. This screen helps the user to select various level of hierarchy like Company, Department, Designation, Employee Type etc,.

Employee Master: To Add/Edit/Delete and view Employee details, Select Employee Master from the Masters Menu.

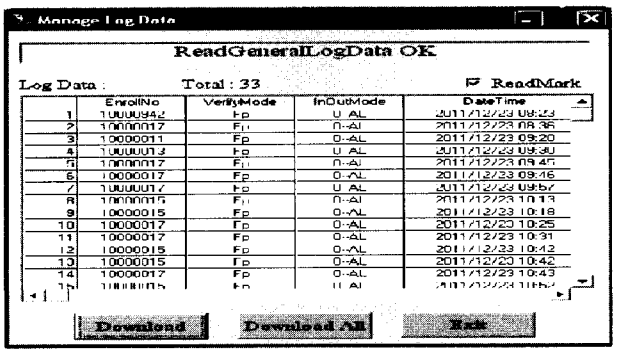
Finger Print Reader: To download the data first you have to select Machine Name, Click open comm., click Log Data Management.

Finger Keeper: When you click on Log Data Management you will get the following screen. Here, to get the Students entry Statistics Click Download all Data.

Manage Log Data: This is used to download the data from the reader.

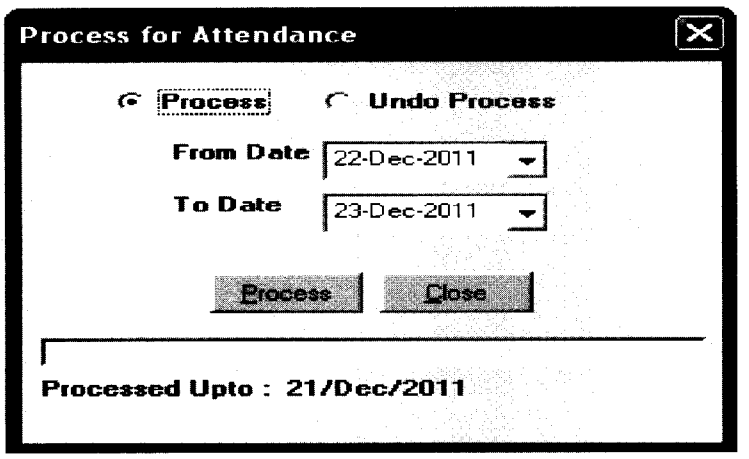
The following screen shows the entry of the user's record per day.

Manage Log Data 2



Once you complete the downloading the entry details click Exit.

Manage Log Data 2

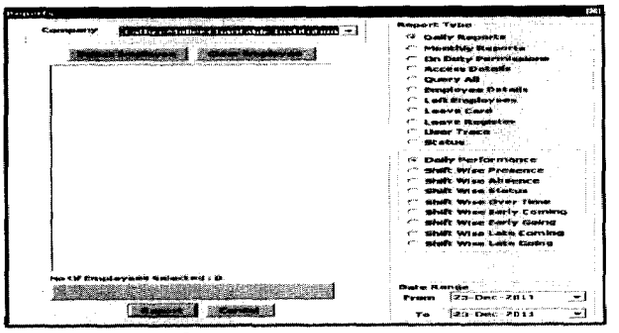


Process for Attendance:

Process option is to generate final attendance of the library users. This can be done by comparing and analyzing all related information about the users such as In/Out data.

→ Processed Upto – Shows the last date of processing.
→ From Date – Date from in which process to be started
→ To Date – Date to Which Process to be done. Figure 13: Process for Attendance
→ Click Process to start the processing.
→ Click Close to Exit the operation.

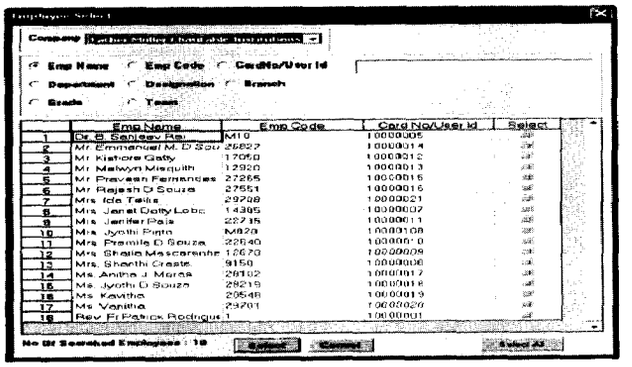
Undo process Will undo the selected month processed data.



Reports:

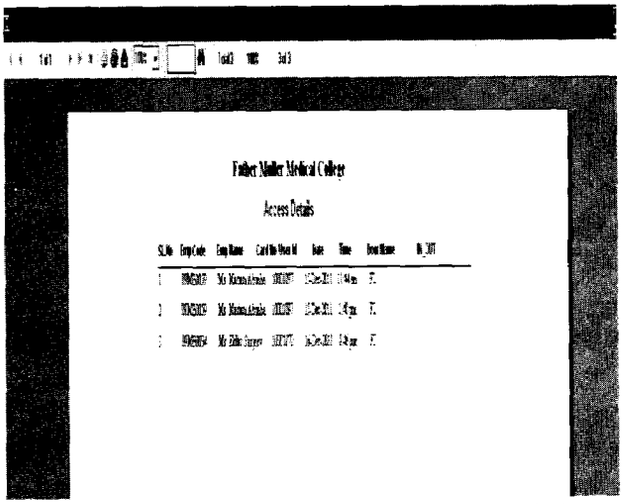
When you click the Report icon you will get the following screen.

Employee Select



Here first you click Select Employee, when you select employee the following screen appears on the computer.

Access Details

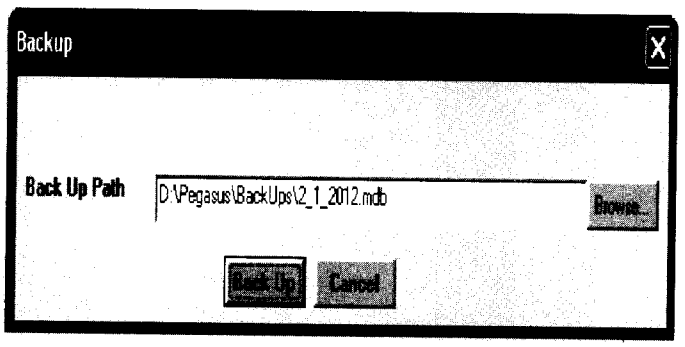


Here you can generate reports by Department wise, Designation wise, Course wise etc, Then click access details, select Door Name, select "From Date", "To Date" & click report.

Once you generate report you can save it in your system, can take printout. Backup option is available in this software.

Back Up

Select Backup from the Tools menu, upon selection the screen shall display as follows,



Press Backup to copy the file into destination folder. Click Cancel to abort the operation

4. Conclusion

Biometric system is user friendly, less cost and safe. Biometric is the most effective and safe method used in computer technology. The Advantage of this system is instead of keeping records manually can keep records mechanically. Save time of the reader. Save space of the Library, save manpower, an unknown person can't enter the Library. The disadvantages of this system if the user comes in group all can enter the Library with one users thumb impression.

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Web Based Information Services: A Case Study of World Top 5 University Libraries

Gudodagi Shashikant C **Hiremath Rahul R**

Abstract

The Emergence of World Wide Web, internet and ICT has made enormous changes in the way information is stored and delivered. Today's libraries are now capable of giving more and more innovative services to its users. Library portal is now serving as a window to the services offered by the library. Web based services are now become an important part of the library services. This article try to explain about the web based information services, its need and also an approach to give theses services. And also an effort has been made to study top 5 university libraries, to find out how best they are offering the web based services to its users.

Keywords: Web based services, Web 2.0, Lib. 2.0, Digital library services

1. Introduction

The electronic revolution, specifically, the World Wide Web (WWW) and Internet as a new media of information storage and delivery provide an unparalleled media for delivery of information with greater speed and economy. Internet is narrowing the information gap and is considered as technological, social and cultural phenomenon that has bought out fundamental changes in handling the information that is useful for education and research. The internet is a communication tool that allows the teachers, students, colleagues and specialists to communicate with each other. It is the gateway for libraries and information centers to enter the Electronic Information Era and is providing the information, generated by different organizations, institutions, research centers and individuals all over the world. Because of the development in ICT and with newer formats of information storage such as e-resources are coming at large numbers and also with their popularity with the users, an overwhelming attention is being given to the web-based information services in libraries. Hence the web based information services are becoming popular.

2. Web based Information Services

The information services provide required information to the users on demand or in anticipation and keep the user well informed and up-to-date in the field of specialization and in the related field. Some of the information services provided through web are OPAC, CAS SDI, ILL, Reference Service, abstracting services, database access, translation service, referral service etc. (Deka, 2007).

2.1. Web OPAC

Web based Online Public Access Catalogue is the basic information service of any library, which is used to search and locate the library documents. This will also let the user know about the status of the document and even it has a provision to reserve the document. Web OPAC can be searched by the help of Boolean operators to minimize the search results.

2.2. CAS

List of latest additions to the library namely books, periodicals, patents, standards, audio visual materials or any other can be put on to the library website for user attention. This will help the user go through the list, for his area of interest without physically visiting the library.

2.3. Reference Service

An online reference service can be given to the users of the Library, which allows researchers to submit reference questions to the library by online. The general enquiries and help accessing the collections, services and facilities can also be given effectively. Many libraries are giving this reference service under the head "Ask Librarian" on their library website. A user has to put the query through an enquiry page, which is automatically routed to libraries, which receives it as an e-mail message. Immediately library can sends an e-mail message to the user with its response to the enquiry. The received queries are promptly answered by consulting the different resources available in the library. Such services are useful to those who cannot come to the library due to physical disabilities, scheduling constraints or geographical distance. Users may also find reference service more convenient for their needs as it is available anytime, any place. Now a days several libraries are giving instant chat based reference service, were user directly chat with the reference librarian for his/her query and get an immediate reply for the same query.

2.4. RSS Feeds

The RSS feeds can be used in library for current awareness services like

- New addition to library collection like books, ebooks, Subscription to new journals, online journals etc.
- RSS feed tied to a library ID for hold notifications and/or overdue materials.
- News updates, new programs, orientation programs and events posted on the library website.
- Library closings, including emergency closings.
- Job openings in library
- RSS feed subscription to news related to institute and library (media coverage).

2.5. Access to Databases

The web consists of huge number of online databases. The library portal can give a link to the required and useful databases, so that users will get all the required information at one single place. This will help the user to access his desired information from these databases. Many publishers are bringing out databases in the form of CDs. These CDs can be stored in the CD server and hence these can be given access to its users through library portal.

2.6. Blog

A blog (weblog) is a web site made up of posts that are arranged chronologically, and archived by date and category. It has made publishing a lot easier. The Blog is giving an upper hand to library and information professionals to disseminate and share information

in an innovative and speedier way. This can be used to alert staff, students, teachers and research scholars to new arrivals of books/Journals/CDs etc. Library professionals can provide the current information to the users through blogs.

2.7. Web based User Education

Considering the complexity of the available web resources, user education is very essential to the new users. This will help the uses to learn the effective use of the web resources. Online tutorials, online help, screenshots comes to the help to the users. These provide a high degree of interactivity & flexibility to the users. These kind user educations give insight of the basics of the library resources, search strategies for easy & quick retrieval of information etc.

2.8. Links to Areas of Thrust

An ideal Library portal or web page give links to the important institutes related to the interest of its parent institutions. It also gives links to the online databases, E-journals/Open Archives. The information about the forthcoming conference – seminar etc give significant information to the needy. This kind of links given on the website comes handy for the user's point of view. This accumulation of useful information at one place will help the users to get the required information under a single umbrella.

2.9. FAQ : Frequently Asked Questions

This is a list of possible questions with the answers which might arise after visiting the site. This will clear the doubts of the users. This will be very helpful for the users to get the required information, as these are in question and answers type.

3. Need for WBIS

- To give particular information to the end user in a shortest possible time.
- To reduce the effort of searching the information manually
- To give a user a convenience of getting the information wherever he is.
- Ensuring the information provided is high quality and appropriate
- Since most of the libraries are going for the consortium, the cost of subscription of e-resources will be reduced considerably.
- Latest and Current information can be given to the users, which may take few months/years to come in printed format.

4. Web based information services provided by top 5 Universities of the world

The world is in transition stage of educational revolution and we are part of it. Now the Globalization and internationalization of education has forcing us to provide world class education. To survive in this new environment our education system so as the library services should be at par with the world class universities. Here we are making an effort to study web based information services provided by 5 world class universities libraries, so that we can adapt these services in our universities and college libraries. The following table shows various WBIS services provided by them.

Sl	WBIS	U C L	U H L	MIT L	Y U L	U O L
1	WEB OPAC	√	√	√	√	√
2	Online Resources	√	√		√	√
3	Library Collection	√		√	√	√
4	RSS feeds	√	√	√	√	√
5	Reference Services/Ask Librarian	√	√	√	√	√
6	Access to Databases	√	√	√	√	√
7	Blog	√			√	√
8	Web Based User Education	√		√	√	√
9	FAQ : Frequently Asked Questions		√	√	√	√
10	Links to Social Networks	√		√		√
11	CAS (Major events, activities, Conference, Seminars, etc.)	√	√	√	√	√
12	Online User Services (Renewals, ILL request, Reservation of Documents)	√	√	√	√	√
13	Recommendation for Documents	√		√	√	√
14	OS(open-access repository)		√ (DASH)	√	√	√
15	Digital collection	√	√	√	√	√
16	Special Features	Catalogue Search from Phone	Research tools	Research tools, Group study spaces, Tutorials	Download audio books and eBooks	Catalogue Search from Phone

4.1. University of Cambridge Library (U C L)

After going through the website of University of Cambridge Library, we come to know that they have given more importance to Catalogue and the social network sites. On home page we will find catalogue search, Research skill program to staff and students (Orientation program) on regular basis and link to social networking site Twiter, Blogs and facebook. The hyperlink 'new to Cambridge library?' provided basic information about the Cambridge libraries and 15 tips to users from library use to how to get help. Here the RSS feed provides news feed like, latest news, new electronic subscription, trial offer, job openings latest catalogued books etc. The important service offered by the Library is Widget, it allows users to see the due dates of their loans in Google Calendar, Yahoo Calendar, Thunderbird/Lightning, Outlook and Mac OSX Calendar, or as an RSS feed.

4.2. Harvard University Library (H U L)

Harvard library (Harvard University Library) use 2 types of catalogue HOLLIS and HOLIS Classic. HOLLIS offers keyword searching, and is good for discovery and can be used on mobile device and on iPhone by downloading application. HOLLIS Classic allows to search or browse by exact author name or subject words, search "exact phrases," and search in non-Roman characters. Expanded Search makes it easier to do more complex searches by combining search words with "AND," "OR," and "NOT." HOLLIS has feedback for problems, questions, comments.

Get It service of HUL combines HOLLIS, HOLLIS Classic, Borrow Direct, Scan & Deliver, Interlibrary Loan and other services provided to Harvard students, faculty, staff, and special borrowers with all options for locating and requesting material at Harvard Library. HUL is providing special service called Research tools. It can be used to simplify locating, navigating between, and using Harvard's e-resources and e-journals. *Citation Linker, Get It,* RefWorks, *Harvard LibX,* etc. HUL is also available on mobile and iPhole application.

4.3. Massachusetts Institute of Technology (MIT) Library

Compare to other libraries web sites, the MIT library site is looks very informative and easy to access, since everything is systematically arranged on the homepage itself. They have facility to Search MIT, Boston Library Consortium, and libraries worldwide. If the particular book is not available in MIT the user can request the same document on ILL. The library services are divided into 6 different categories mainly Guides, Borrow/Request, Help, Tools, Publishing, Visit the library.

In Guides Research Guides, Information Navigator, video tutorials etc are available. In Borrow/Request has a provision of access to user account, FAQ's, ILL, recommendation, etc. Help has Ask us, research consultation, orientation and others things related to help. Tools is particularly for researchers it has research tools like citation software like EndNote, RefWork, Zotero, new additions in library, email & RSS alert on research etc. Publishing provides information about scholarly publishing, open access, publishing help, Dspace of MIT, etc. and lastly the Visit the library about MIT libraries, working hours, study space, staff information etc.MIT library can be followed on Twiter, face book, four square, RSS, google+, etc.

4.4. Yale University Library (Y U L)

Yale University Library services are divided into 4 different categories mainly Research tools, Libraries & collection, Library services, about the library. The important research tools link is provided like catalogue search on orbis, yufind, database, articles, online tutorial, create bibliography, etc. are provided. In libraries and collection section the details of different libraries under Yale University collection and location guide is there and the special collection, digital collection and working hours of the library is provided for easy access and reaching the library.

Library services sections have detailed information to the users on different services provided and instruction for barrowing and ILL and workshop and research

education section has different user orientation programs. User personalized account login and purchase requisition etc. About the library has information on and about library. The News RSS feeder has news updates of events and activities of libraries under Yale University. The special feature of this university is download option of audio and e-books on mobile, iPhone and tablets.

4.5. University of Oxford Library (U O L)

University of Oxford library meets the needs of its students, academics and the international research community with a wide range of library services provided by more than 100 libraries, making it the largest university library system in the UK.

Bodleian Libraries is the integrated library service of the University of Oxford, it comprises nearly 40 libraries. The collections of Bodleian Libraries are more than 11 million printed items. This is the University's main research library and is the second largest in the UK after the British Library.

Like other libraries OU library home page has 6 different categories like Using the library, What's on?, BOD 2.0, Transforming our libraries, Media and Meet Bodley's Librarian. Using the library has SOLO, browse by subject or by library, Special collection, ILL, reader training, guide etc. What's on has details about exhibition, events, Bodeline tour, Bodeline shop, etc. BOD 2.0 is the application of Web 2.0 like podcast (BODcaste), Blog. Transforming our libraries has updates about recent developments of library. Media provides service of media, filming equipments, ordering a image, etc. and Meet Bodley's Librarian has details about the librarian.

Other then this UOL has RSS feed for notices and news and link to Bodleian Libraries on twitter.

5. Conclusion

The libraries with good and innovative services attract number of users. Unlike traditional library services, web based services are offered by using the internet and it can reach to any one irrespective of the physical boundaries. The WBIS services help the users to save the time spent on physically going to the library to access the information. With the wide exposure to the internet and information communication technology, the libraries are making outmost efforts to give best services to its users. Compared to the western world, the Indian academic libraries are lacking in giving web based services. Some selected academic libraries are giving web based services through their library portal. Realizing the fact of increase in the e-resources, the academic libraries are now recognizing the need of web based services. After through study we come to the conclusion that, all these universities are providing almost all the WBIS mentioned in this article to their users.

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Widening the Horizon of Library Services with the Help of Mobile Phones at University of Pune (India) Library

Aparna Rajendra **Panage B M** **Hemlata Bonde**

Abstract

This paper explores the possibility of the effective and efficient use of mobile phones in the environment of Academic Library especially in the Pune University Library. The study used review of literature to find out the representative examples of the use of mobile phones in variety of libraries across the world and used the descriptive method. The authors have tried out to sugggest the various ways and means for introducing the mobile phones in library services of the University of Pune's Jayakar Library.

Keywords: Mobile phones, M-Services, University of Pune Jayakar Library

1. Introduction

Since long libraries are service institutions working as not for profit organizations. Making right information available to right user at right time is the motive behind it. In the age of assimilation, shop analogy was applied to librarianship. Similarly principles of marketing can also be implemented here only without the stress on profit in monitory terms. Marketing implies innovative & speedy production and its wide publicity. A product can be a thing produced by labor resulting out of process. Service is also something that is offered to user for the satisfaction of want or desire. Both service sand product are outcome of process intended to supply utilities or commodities, The only difference lies in the fact that products are tangible and services are intangible. While rendering services products may be one of the media for them. Libraries offer variety of services like reference service reprographic service, lending services. Vaious bibliographies, duplicate copies will be the products thereby.

2 Developments of Mobile Phones

Initially developed as a car phone, mobile phone technology has witnessed amazing changes. The mobile phone technology developed both in the inner and outer forms i.e. in the handset designs and in the form of the communication technology. The changes are experienced both in the technological and functional levels.

Simple voice-to-voice telecommunication device has become entertainment device; the gadget serving as replacement for computers.

The stages for the same can be visualized as:

- Ease in telecommunication with voice
- SMS (Short Message Service)
- Introduction of entertainment facilities with mobile like Camera, FM and MP3 Players etc

- Access to Internet
- Provision of PDA Functions with mobile handset
- Video Conferencing with the use of 3G network technology
- Development of subsidiary technologies like Bluetooth and Symbian

Libraries and librarians are also not behind in taking benefit of the advantages and facilities of the mobile phone technologies in introducing new services. It will be interesting here to review the world's leading examples of mobile phone based library services.

Such library services cover

- Services offered via SMS
- Availability of OPACs
- Mobiles & Internet

3. Pune University Jayakar Library

The Central Library of the University of Pune is named after the first Vice-Chancellor of the University i.e. Dr M R Jayakar. Established in the year 1950 the Jayakar Library will complete its sixty years in the coming year. The Jayakar Library presently has the collection of material more than 4 lakhs including printed books, bound volumes of periodicals, Manuscripts, Theses, Audio Visual Material, Maps, Music CDs and Gramophone Records. Functionally the Library is divided into following sections: Acquisition, Technical Processing, Circulation, Periodicals, Reference and Administrative Unit. The Department of Library & Library Science is located into the building of the Library itself. The Librarian and the Head of the Department is shouldered by one person; designated as Librarian and Head of the Department.

The Library is monitored and managed by a team of 41 people including technical and administrative staff. The library has kept pace with the changing environment especially with the technological changes. Right from the use of various machines in administrative work and services, the Jayakar Library proved itself as a pioneering example in introducing computers in library management especially in Indian context. The Library has set up its Micro Filming Unit. The library belongs to few earlier examples that have implemented RFID Technology for the Circulation activities.

With this background the present authors who belong to the staff of the Library try to propose here the model for the mobile phone based services for the Library. The proposed model will be focusing on SMS based services. This device can be used in house keeping activities also. The brief review is taken herewith.

3.1 Circulation Section

Circulation Section, as in the other libraries, is here also the heart of the library. The users to whom the services are provided are heterogeneous. Information to users along with issue and return of the library material is essential. Constant notices about changes in the timings, holidays, and enforced shutdown of the library in emergency have to be issued. One way to issue such notices is of SMS.

Along with such notices; the reminders to the users about due date, over dues, information about the availability of reserved documents can also be speedily communicated via SMS based communication. Mobile phone based services could be here as

- Issue of Notices regarding Change in timings, Holidays, Enforced Shutdowns
- Information about Due Date
- Information about Late and over dues
- Information about the availability of the Reserved Document
- Facility to request the document to be reserved.

3.2 Reference Service

- Answers to short-range reference queries can be managed by SMS based Service.
- Arrangement of Exhibitions, Lectures, Demonstrations and various events can be communicated
- Activities like Book Clubs, Book Banks can be monitored with the use of Mobile
- Advertising of the Music Library by making few tunes available via Mobile
- The University is having its FM Channel. The programmes broadcasted through FM Channel especially about Library can be informed via SMS.

3.3 Periodicals Section

The Periodicals Section receives grant of Rs 1.5 Crores p.a.

- Notices and information about periodic free trials of online databases and demonstrations of them can be communicated.
- Documentation activities can be tailored in context of SMS services.

Though grouped as On the Screen Services and Off the Screen Services both of them aim at speedier provision of variety of services. They are supportive of each other. Hence the consideration for the application of mobile technology in house keeping activities will be aimed at effective services.

3.4 Acquisition Section

The Library acquires books with the sanction from the Heads of the Departments of the University. The budget allocated for the purchase of the books runs into Rs 1, 00 00,000/ p.a. With the consent of the Library Committee the amount is allocated to the various departments of the University. The Library Committee approves the Vendors for purchase of the documents. The mode for selecting the documents is many of the times 'Books on Approval.' The Mobile Phone can be used for the following functions

- Contacting the Experts for Reviewing the Documents on Approval (SMS)
- Contacting the vendors for updating of the status of the approval; Current Conversion rates; Direct ordering, billing purpose, Requesting for the Urgent requirements and other related jobs (SMS based and mobile linked with Internet)

3.5 Technical Processing

- Providing the Information of Latest Documents in nutshell preferably daily basis with combination of SDI service;
- Requesting Subject Experts to visit the library for assistance in classification and subject heading (SMS)

The above suggested services can be provided through any form of communication but SMS or mobile-based communication is more common and available to more number of users. The prerequisite here is of the well integration of Library Management Software and Mobile Handset Complexities and Mobile based programmes like SMS management soft wares.

The above-mentioned activities can be put forth in the modular way in Figure No

4. Challenges involved in implementing the proposed services

a) **Reliability and efficiency of Mobile Service Providers**: Mobile service providing companies are having competition among themselves. Considering the size of the users of the library it is obvious that the mobile handsets and the mobile service provision companies supporting them will be varied. In addition to this the difficulties in communication traffic of mobile phones may affect the efficiency and effectiveness of the services. The technical and technological aspects of the setting up of any service have to be studied carefully and innovatively.

b) **Study of Mobile Users among the Library Users**: A survey of the users of the library may be carried out in the perspective of the mobile literacy among them, their awareness of the services offered by the library, and their psychological mind set in this regard. Such type of study was conducted in Malaysian University. (Nor Shahriza, 2006).

c) **Technical Compatibility** - The compatibility of the existing Library Software for additional technology based services has to be duly considered. The software company, the mobile service providers and demand for consistency by users have to be balanced out.

d) **Psychology of the Staff** It is the library staff who is the one of the elements of the trinity of the library. Introducing any service and consistently maintaining it are the two dimensions of the successful implementation of it. This is totally dependent on the staff members. Keeping oneself update about the new trends, the attitude towards it, and ready to work as a team member are essential factors for introducing and implementing new services and especially mobile phone based services.

e) **Economic dimensions of the issue** – The extent to which the library budget will support the non-recurring and recurring expenditure for this type of new service has to be well studied.

The factors involved in the economic dimension are:

- Purchase of handsets for many sections
- The integration with the software

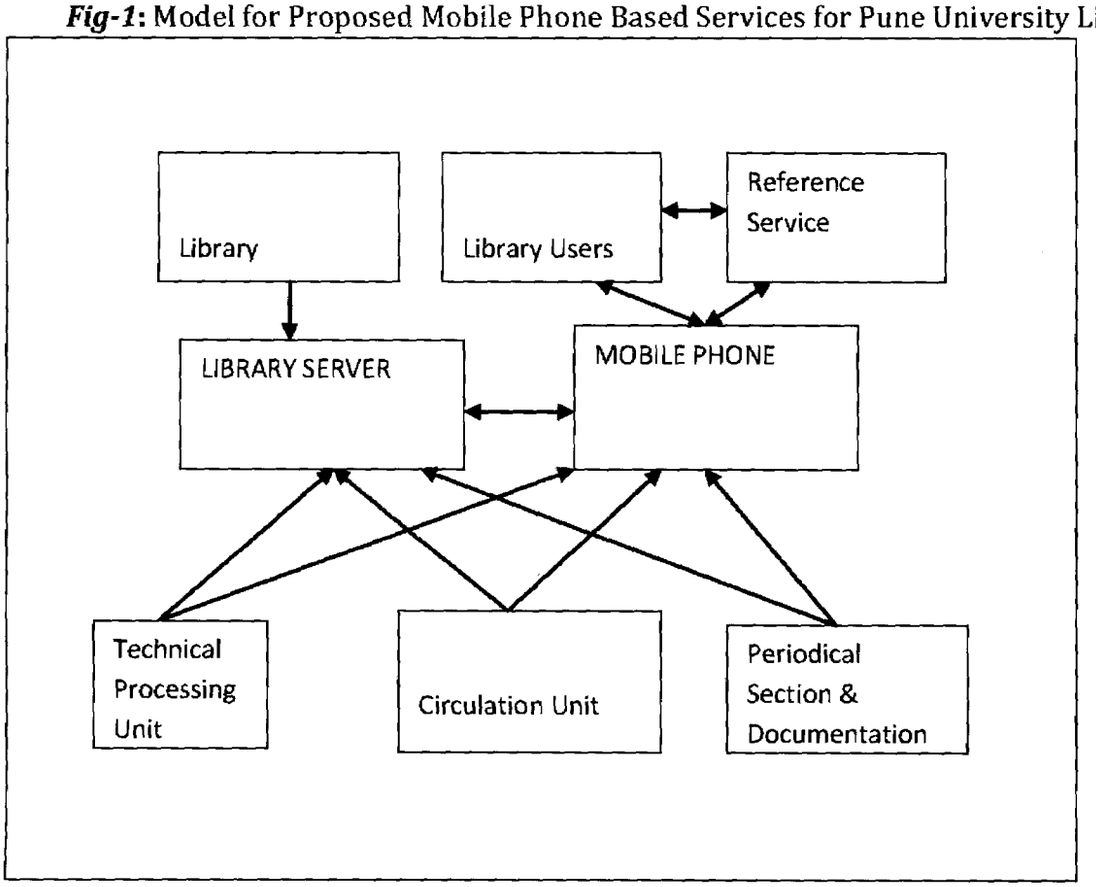
- ❖ Software charges
- ❖ Telephone bills for the usage
- ❖ Maintenance cost for the same

Theses challenges are mentioned here on the basis of the practical working experience of the authors. The University Campus is facing today the problem of the mobile phone connectivity. The Ex-Vice Chancellor of the University has announced the project of the establishment of the Tower for powerful communication in the campus. The heterogeneous nature of the users with the wide variety of handsets of various generations and the mobile literacy is also the matter of consideration.

5. Conclusion

Libraries play significant role in the communication process. Making right information available to right user at right time is the motive behind it. The developments in the techniques of communication technology are always welcome by libraries. Mobile phone technology is currently the most popular technology. Mobile phones and their effective use in library services can enable popularizing the libraries & bridging the digital divide, if manipulated properly. This will certainly give innovative touch to widen the spectrum of library services.

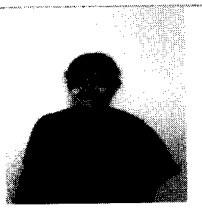
Fig-1: Model for Proposed Mobile Phone Based Services for Pune University Library



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Wiki's Application in Library and Information Science Education

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Abstract

With the proliferation of free internet, many have access and hands on experience to wiki. Harnessing the wiki power in LISc education will benefit profession. Wiki as a tool for learners (LIS Students, Faculty, Researcher and Professionals) to be engaged in content-related challenges has many applications. Article discusses importance of wikis in LISc education. Then briefs benefits of wiki and lastly explains various applications of wikis in Library and Information Science (LISc) education. Lastly makes analysis on opinion of LISc Research Scholars and PG Students at Gulbarga University, Gulbarga.

Keywords: Wiki, LISc Education, Web 2.0, Wiki Educational Application, Wiki Usage.

1. Introduction

The wiki serves as an ideal online host for assisting LISc students in completing assignments and collaborating with classmates using their existing Web browsers. The wiki is also useful for LISc teachers and faculty members. Its use allows them to easily edit wiki entries and keep track of recent edits by others. They are also able to document the history of an assignment or project as it is revised. Wikis have recently become the latest method of online writing, which can be used in conjunction with LISc education for writing-related assignments. So how can a wiki are applied to LISc education? Wikis have many uses in education, with some of the most common uses discussed below:

Mader (2006) describes below benefits on wiki in education

1. **Content-focused:** wikis are those that have large amounts of content and are edited by large numbers of people. These wikis should be easy to use and edit.
2. **Process-focused:** wikis are often used in business to document or manage a process. Often, notifications are used to let members know of a change or addition that has been made.
3. **Community:** wikis are most often used for subject matter that is of interest to a select group of people.
4. **Ease-of-use:** wikis are simply an easy way to create a Web site. Someone wanting an immediate presence on the Web without the trouble and expense of learning HTML or hiring a Web designer can utilize a wiki. The normal collaboration and open editing are normally disabled with this type of wiki as it is set up as more of a read-only site. The ability to make the wiki private and to lock pages makes this possible.

2. Wiki's LIS Education Applications

2.1 Alternative to website creation

Wikis can be used as an easy way to create a personalized Web site, a process that

has become part of LISc courses. Some teachers ask their students to create a Web site as part of the course syllabus, or suggest them to create a Web site to showcase their bio-data and accomplishments. LISc students can use free wiki development software as an easy way to fulfill their educational course requirements, and they can make the link to the wiki readily available to other students, teachers, and corporate recruiters. Using a wiki also means no need of training on technical Web site development. The wiki experience, similar to the blog, can be used in LISc education, thereby giving anyone with Web proficiency the chance to create, invite friends, and host a page on the Internet.

2.2 Helpful in review and project process

LIS Students can develop their writing assignments directly on a wiki. The wiki platform allows the user to write and revise class work within the wiki (with a track-back feature), thus making it an ideal way to complete assignments. The tracking feature allows teachers to review the students' progress and view edits and previous drafts in the wiki history. Peers may also view the wiki and make suggestions, which can be an easier way to assign peer-review homework. LISc students may benefit from teacher and peer comments that can be made directly on the wiki. A wiki also serves as an online location, or Web site, to host the students' final work, available for public viewing. This feature on a wiki may also entice students to perform at a higher level, knowing their work may be viewed and critiqued by others.

2.3 Encourages Group work

LIS researchers and students are frequently assigned projects that require group collaboration. By using a wiki, group members can post their contributions to the group project, easily edit other group members' work, and immediately retrieve documents related to the project. A wiki may eliminate confusion caused by multiple document storing locations, or the common problem of overlapping ideas and additions to a project section. LISc students can also use the wiki as an online home page, where the sharing of documents and ideas brings the group closer together academically. Teachers and professors then track the progress of group work by using the track-back function and history feature on the wiki.

2.4 Supports Review of Group work

A wiki is an efficient solution for tracking group progress online and from remote locations. LISc researchers and students can save time by reviewing their team members' posts to the wiki and edit the entire project or paper from anywhere they have Internet access. Online collaboration through a wiki may also help teachers construct and monitor group assignments. The group (or class) wiki, which can be set up to allow access by only group members and an administrator, gives researchers and students an opportunity to comment on the project and review group work in one convenient online location.

2.5 Acts as collection center

Wikis allow posting, editing, and sharing of research collected by LISc scholars and students. Having this ease of access can help facilitate the sharing of data in group projects and provides a central location to collect data and research rather than storing data on

each individual computer and sharing through a chain of e-mails. A wiki could also replace existing methods of online research collection such as a college or university server. Data collection tools specific for wikis are readily available, with JotSpot (http://www.jot.com) being an innovative solution for this concept.

2.6 Enable sharing

Web sites such as Rate My Professors and Rate My Teachers allow LISc students to review college professors and teachers. The use of a wiki may replace these Web sites as a place where LISc students can post comments on their course experiences and rate the perceived quality of instruction they have experienced. LISc Students will then be able to add comments and reply to these posts with ease on the wiki. LISc educators may find that sharing classroom teaching strategies and techniques may be more efficient and may reach a larger audience through a wiki focused on classroom experience. In addition, teachers and professors could post syllabus updates, take-home exams, and final course evaluations on a wiki.

2.6 Online Presentation

LIS students now have the ability to give a presentation through use of a wiki. Many classrooms are equipped with hardware to display computer presentations, thus making it easy for a student to project the wiki from the Internet onto a whiteboard or screen. In these wiki presentations, the wiki can be used in place of conventional presentation software such as Microsoft PowerPoint.

Other Applications

Previous education issues that were prohibitive to LISc learning can also be reconciled by using a wiki. LISc education uses include literacy campaigns, distance learning for commuter students, and secure collaboration for professional education. The campaign for LISc literacy is a perfect example of how individual may have some experience with a computer but lack sufficient reading skills. Or, in some cases, they may not have both a computer and reading skills, in which case using a wiki could be an opportunity for LISc students to become both literate and proficient at using a computer.

3. Opinion of LIS Research Scholars and PG Students at Gulbarga University, Gulbarga:

As part of study we have collected opinion of PG Students and Research Scholars at Gulbarga University on Usefulness of wiki in LISc Education. 13 fulltime research scholars and 73 PG students were asked below questions orally;

1. Do you think wikis can be used as alternative to website? Yes or No
2. Do you use wikis for project development? Yes or No
3. Can wikis be used in group work? Yes or No
4. Can we do review work using wikis? Yes or No
5. Are wikis act as resource collection center? Yes or No
6. Will wikis be used for sharing class room experience? Yes or No
7. Do you think wikis will help in online presentation? Yes or No

Positively recorded data has been furnished in below table:

Wiki's LIS educational Use

SL	Use of Wikis	Research Scholars	PG Students	Total
1	Alternative to Website	13	57	70
2	Project Development	3	16	19
3	Group Work	12	62	74
4	Review Work	5	13	18
5	Resource Collection Center	9	27	36
6	Sharing Class Room Experience	13	69	82
7	Presentation	11	22	33
	Total	**66**	**266**	332

Table 1: Opinions of LISc Research Scholars and PG Students at Gulbarga University on usefulness of wiki in education

Above table shows that PG students and Research Scholars in LISc feel wikis can be majorly used for Sharing Class Room Experience (82); Group Work (74); Alternative to Website (70); Resource collection center (36); Presentation (33), They feel wikis can be used less for review work(18) and project development(19).

4. Conclusion

In addition to the multiple uses of wikis in LISc education, there are also specific examples of wikis currently in use in the classroom or in course work. Professors can create a course syllabus, course schedule, and course Web site through the use of a wiki. This concept may be especially beneficial for professors who frequently update course information or the course syllabus, and may reduce the need to physically print new handouts for each update. There has been a rapid increase in recorded uses of wikis in colleges and universities in India. However, educators should consider creating and using a wiki if they are looking for a safe way to increase student engagement in classroom assignments, promote accountability and collaborative editing during group projects, and finally, showcase students' work in a single online location. These are just a few of the many examples of the potential for LISc educational wikis to be used around the world.

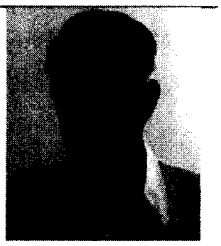
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