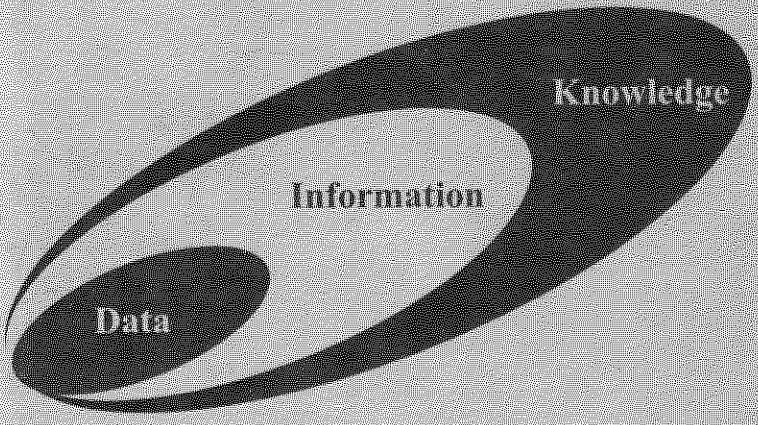
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53rd All India Library Conference
of Indian Library Association

Hyderabad, Andhra Pradesh, December 13-16, 2007

Developing Library and Information Resources and Services in the Internet Era



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FOREWARD

Academic scenario has undergone tremendous change assuming new dimensions influenced by the technology driven applications. Library and information Centers are no exception to this. Traditional library processes are observed to be inadequate. Quality service package delivery is a formidable task for all libraries, be it academic or public. The long-term sustainable advantages in the library and information services require more attention to the issue of service, quality and cost.

Libraries are mainly entrusted with a host of predetermined tasks like acquiring, organizing, preserving, retrieving and disseminating information to the users. Right from ancient times to the present the Internet age, the primary objective of library has always been this. However, the way this purpose has been achieved has drastically changed by the Internet and its services.

ICT has influenced the very nature of 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 way of networking. With the advancement in technology and its direct application to libraries, libraries are becoming lean and agile libraries that streamline information supply. The pervasive nature of the Internet, coupled with platform independent database connectivity is turning library portals more and more effective.

The technological tools for disseminating information have progressed from conventional books and journals to electronic journals, online databases, making it possible to explore the worldwide pool of knowledge sitting at ones desk or home. It is an accepted fact that quality of education at any institute depends on the resources that its library has. It will certainly matter to have well-stocked and maintained library and information center for providing crucial support.

In order to explore more widely and deeply the process of developing library and information services in the Internet era, Indian Library Association has organized its All India National Conference at the Department of Library and Information Science, Osmania University, Hyderabad from 13-16 December 2007. I am immensely happy to know that the response from the professionals is overwhelming. We had received about 88 papers which have further been organized under seven facets.

I take this opportunity to congratulate Organizing Secretary Prof. N. Laxman Rao, Dept of Library and Information Science, Osmania University, Hyderabad and his able team for their dedication and commitment towards organizing this conference.

I wish the 53rd All India Library Conference of Indian Library Association a grand success and hope that the deliberations at the conference will open new vistas in the library and information services in the Internet age.

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&
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PREFACE

I feel honoured that the Indian Library Association has very kindly given me an opportunity to present this pre-conference volume to you. We all know that the convergence of information and communication technologies (ICTs) has made a profound impact on all facets of life and work. Blurring of boundaries and transmutation of digital documents has become a common phenomenon. A cell phone call or double mouse click makes the whole difference to the stakeholders. In fact, the confluence of ICTs has made the world global electronic village. There is a paradigm shift from standalone libraries to library and information networks. With the ascent of intangibles, i.e. knowledge and information, the focus has shifted from ownership to access. We are faced with a diametrically opposite situation with declining budgets on the one hand and growing information and ICT deluge on the other. Institutional repositories, library consortia, information commons, creative commons, and open source movement are our strategic professional responses to meet the challenges being put forward by the information and ICT revolution. But the benefits of this revolution are not available to the info-poor stakeholders as affordability is a major issue for them. The info-rich are talking of change management, knowledge management, information literacy, life-long learning, and multi-skilling. The non-elite individuals and institutions are the major sufferers as the gap between the info-rich and the info-poor is widening day by day. Though, ICT is value neutral, yet left into the hands of the elite it has the tendency to promote the elite culture only. Hence there is an immediate need for egalitarian policies and sustainable strategies to bridge the information gap and bring the non-elite into the main stream of information super highway. National Knowledge Commission (NKC) constituted by the Honourable Prime Minister of India has the mandate and the vision to develop India into knowledge economy during the 21st century. It has very good vision, but we must not forget that in India 260 million people are living below poverty line and the Gross Enrolment Ratio (GER) to higher education is only 10 per cent. The NKC has focused on expansion, excellence, and inclusion in its recommendations. India intends to enhance the GER to 15 per cent by the year 2015 by opening 1500 universities including 50 central universities. But the commercialization and privatization of education is a big challenge for the people who are unable to send their children to higher educational institutions.

In fact, ICTs must be used to outreach the have nots. ICTs should be integrated in all types of libraries to provide elbow support to education, research, and development initiatives, but we must be aware of the shadow of digital determinism. By digital determinism, I mean to say that technology should not lead us, rather it should follow us. Social

determinism should be the main consideration. It means ICTs should follow the information needs of the society at large. There should be a relative balance between the push and pull technology. Efforts must be made to develop hybrid libraries, that should be user-centered and expert assisted. For this, we will have to look beyond formal education and traditional systems. Life-long learning is the only way out for change management and staying ahead of competition. According to the Unesco Report '*Learning: The Treasure Within*', there are four pillars of learning. These are: learning to know, learning to do, learning to be, and learning to live together. The last one is most important for the Library and Information Science (LIS) profession. LIS educators and practitioners must work together for ensuring end-user satisfaction. Systems thinking, team spirit, open and positive mind-set, personal and professional competencies are the other pillars for professional excellence. In the context of LIS education, there are again four pillars. These are: LIS courses, faculty, document support, and the students. Of course, the infrastructure along with the Internet connectivity is also very essential for learning and knowledge networking. But there is an immediate need to make LIS course consistent with the emerging job markets. With this background in mind, the theme, "*Developing Library and Information Resources and Services in the Internet Era*" of the 53rd All India Conference of the Indian Library Association has been selected. There has been tremendous response from the professional colleagues and potential authors. But because of fiscal and spatial constraints, we had to take hard decisions about the inclusion of papers in this pre-conference volume. In terms of quality though we have taken a lenient view, yet we have not been able to publish all the papers. In all, we have selected 88 papers, out of which 67 papers are published in full and abstracts of 21 papers have been included. The facet-wise break up of the papers/abstracts is given below:

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It is obvious from the response that library 2.0 and web 2.0 is the leading-edge of the professional turf. Collection/resource development policies, management and evaluation of collections, print and digital publication issues, and open sources have also emerged as the cutting-edge themes. Public library as a community centre/knowledge centre is also expected to play a pivotal role in bridging the info-divide. Library legislation has received attention of nine authors only. I am deeply

grateful to the contributors for sparing their valuable time and giving us critical inputs in the form of their articles. I am also thankful to M/S Om Laser Printers, Delhi who have printed the pre-conference volume at the shortest possible notice. I shall be failing in my duty if I do not express my deep sense of gratitude to Dr. Trishanjit Kaur and Nirmal Swain for their help and support. Both of them have worked with me beyond the normal call of duty. I do not find suitable words to acknowledge the hospitality and hard work of Dr. (Mrs.) R. Chandra in processing this pre-conference volume. Dr. N.S. Shokeen and D.V. Singh stood behind me like a rock in the critical moments. I am deeply grateful to both of them. I am equally indebted to Dr. O.N. Chaubey for his valuable help in compilation of this compendium. I am also grateful to the members of the Editorial Advisory Board for giving me valuable suggestion from time to time. I sincerely hope that papers in this pre-conference volume would lead to fruitful discussions at the 53rd All India Conference of the ILA. Let it be a great learning experience for all of us.

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An Assurance to Library: A Study at Tirupati

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The paper says about the development of insurance concept and how does it be applied to libraries. Early insurance goes back to the Egyptian times. It was known that around 3000 BC, Chinese merchants dispersed their shipments among several vessels to avoid the possibility of damage or loss. There are some insurance companies around to day in the United States that provided insurance back in the mid 1700's, as well as some that provided relief to banks during the 1930s and the Great Depression. Today there is insurance for many aspects of daily living business, auto, health, life, Travel. Each of those categories includes sub-categories, branching off into numerous divisions. The aim of all-insurance is to compensate the owner against loss arising from a variety of risks, which he anticipates, to his life, property and business. Insurance is mainly of two types: life insurance and general insurance. General insurance means fire, Marine and Miscellaneous insurance which includes insurance against burglary or theft, fidelity guarantee, insurance for employer's liability, and insurance of motor vehicles livestock and crops. In the present day society, people procure valuable things and in view of loss or damage to them, they prefer to insure on par with their lives. Surprisingly the results of the study revealed that librarians & authorities are less interested in insuring their library property. It is also clear from the result that ignorance, negligence, and out look are the main reasons for not insuring the library property. Every one has to know the value of information and it is the time that somebody should bell the cat. And in the opinion of the investigators that 'somebody' is 'this (ILA)' Association.

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Collection Management of Electronic Information Resources of Engineering College Libraries of Bhubaneswar City: A Survey

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ABSTRACT

The development of new technology for the storage of Information, challenge of the future for libraries is not supporting a new electronic literacy, but supporting "The multi-literacy "that will be required in future year. A Collection policy has been on the systematic management of planning composition, finding, and evolution & used library collection over extended period of time in order to meet specific institute objectives. In the context of recent development in information technology (IT) a mere development of collection is meaning less because much of the information can be accessed through networks. A collection of up-to-date general materials that serve to introduce and define a subject and to indicate the varieties of information available elsewhere. Collection management can also be defined as the organization and maintenance of library resources, starting from collection development principle.

The present study explains the state of e-collection development and management in the engineering college libraries of Bhubaneswar city. The assessment of the present study lies upon the general consideration of the policy, practices and procedures adopted by the libraries under study.

Introduction

The development of new technology for the storage of Information, challenge of the future for libraries is not supporting a new electronic literacy, but supporting "The multi-literacy " that will be required in future year. A Collection policy has been on the systematic management of planning composition, finding, evolution & used library collection over extended period of time in order to meet specific institute objectives.

Since Gutenberg introduced the only mechanism for dissemination of information was in the form of paper publication. Since 1990s rapid integration of information system such print and audio-visual combined with high powered software tools & communication system and are all now part of the new millennium and the traditional libraries of the 60's and before are transforming to digital libraries virtual libraries or hybrid libraries.

The management of collection development in libraries on a formal discipline of only recent tradition of relative level of strength is not yet fully developed. Pioneering work was carried out by the American library Association which first formulated in 1977, guide line for the formulation of collection development policies. Libraries can meet in the broader subject access. Today the internet makes headlines in the national media.

In the context of recent development in information technology (IT) a mere development of collection is meaning less because much of the information can be accessed through networks. A collection of up-to-date general materials that serve to introduce and define a subject and to indicate the varieties of information available elsewhere. Collection management can also be defined as the organization and maintenance of library resources, starting from collection development principle.

Users need and considering alternative means of document and information supply to supplement local holdings. Online describe the collection of library collection. The research libraries Group, having collection management tool that allow a library or group of libraries to record collection assessment of information the collection management provide appropriate maintenance of library collection. The product is

designed to enhance co-operative collection management, collaborative collection management and resort saving consortia. The method make use of collection strength are assessed and in a variety of ways but Internet of world wide web (www) is preferred.

Significance of the Study

In this present digital environment, there has been rapid change in the format and mechanisms for information access and delivery. The complex issues surrounding the selection and management of electronic information resources in the libraries have many questions. Computer based system to provide circulation, access to online acquisition and serial control system through integrated system such as remote database, CD-ROM and public access catalogues are becoming more prevalent. Maintaining these systems with the collection necessitate development and collection management of electronic activity. Hence, the objective of the study can be enumerated as follows:

1. To present the status of collection management and to explain the systematic management and of the existing collection of e-resources in the libraries under this study.
2. To identify the strength and weakness of their electronic collection management of engineering college libraries.
3. To find out collection development policies on a statement in general which the purpose and content of the collection in term of building principles of e-resources adopted by the libraries and evaluate such policies; and give suggestions for their improvement.
4. To explore the current practice for research in digitizing and archiving the e-resources as e-document ,e-journal by the process of making e-resources available to the users of engineering college libraries.
5. To communicate between different libraries for maintaining collection development through e-resources.
6. To develop design a standard of library collection for the development and management of e-resources by the libraries under study.
7. To explain the different type of media, availability of infrastructure and other communication tools technology and other facilities for creating and accessing own library network resources, and managing their e-resources.
8. To find out different e-collection based services for outside users through different websites.

Statement of Problem

The role and function of present day engineering college libraries are as multimedia centers due to the adoption of technical advances. The present study has been undertaken by the investigator to determine the strength and weakness of e-collection of different engineering college libraries of Bhubaneswar city and to suggest possible solution for the improvement of e-resources in these libraries.

It has made access to information easier, in this sense that all digital information, such as database of full text journal, articles etc. can be accessed through computers on the networks both at place of work and at home. The concept of electronic library gave a new dimension to the libraries and it is the time of gradually electronic library with e-collection.

In this survey, the investigator has tried to find out the planning, policies and strategies adopted by engineering college libraries of Bhubaneswar city for develop of e-collections. All the libraries are well established and serves as an important function in supporting cooperative collection development, protect the library from illegal and unethical pressure, guides in allocation of budget etc. Here it is tried to find out these policies, practices and procedures adopted by libraries under study for the development and management of e-resources.

Scope and Limitation

The survey has taken only electronic collection of the libraries into the ambit of its scope. This study covers only the Engineering College libraries, which has completed its first batch students passing out from the institute in Bhubanewsar city for evaluation e-collection of e-resources.

To take up this study the investigator adopted the questionnaire method for collecting data from the engineering college libraries of Bhubaneswar. Questionnaire was structured consisting of five different sections namely Background information, Library stock holding of E-resources E-collection developing policy, infrastructure for e-resources management and human resources to management the E-resources. To elicit pertinent data, relating to the present survey, a total number of 12 questions were put to the individual libraries. A total number of 12 questions were distributed personally by the investigator among the libraries of engineering college libraries. As a result of repeated reminder or telephone calls and personal visit to these libraries. It is pertinent to mention here that, some of the question in the questionnaire remained unanswered for the reason best known to them. As the present study is a

time bound the investigator state the answer and interpretation of with as much by data as supplied the libraries.

BACKGROUND INFORMATION:

A survey or Research cause study present nature demands the background information about the libraries under information in order to provide a clear picture about their establishment, organization, services users, working hours, accessibility, etc.

Sl No	Name of the college Engg. Colleges	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006
1	CET, Bhubaneswar	415	595	585	880	1007	1125	1215
2	KITS, Bhubaneswar	1040	1573	1084	1550	1920	2263	2580
3	COEB, Bhubaneswar	135	336	520	668	778	861	990
4	CVRCE, Bhubaneswar	1610	2135	1623	2155	2222	2290	2375
5	ITER, Bhubaneswar	360	665	1094	1547	1826	2228	2560
6	KISD, Bhubaneswar	NE	NE	122	354	694	972	1330
7	MIET, Bhubaneswar	NE	NE	180		315		560
8	OEC, Bhubaneswar	430	540	620	780	1030		1500
9	SIT, Bhubaneswar	NE	NE	400	710	1022	1345	1343
10	KEC, Bhubaneswar	350	650	955	1365	1447	1585	1655
11	KIST, Jatani	NE	NE	NE	220	679	930	1289
12	EAST, Phulnakhara	NE	NE	220	516	943	1458	1688

Table1: Number of users in Engineering College Libraries in 1999-2006

Sl No	Name of the college Engg. Colleges	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006
1	CET, Bhubaneswar	415	595	585	880	1007	1125	1215
2	KITS, Bhubaneswar	1040	1573	1084	1550	1920	2263	2580
3	COEB, Bhubaneswar	135	336	520	668	778	861	990
4	CVRCE, Bhubaneswar	1610	2135	1623	2155	2222	2290	2375
5	ITER, Bhubaneswar	360	665	1094	1547	1826	2228	2560
6	KISD, Bhubaneswar	NE	NE	122	354	694	972	1330
7	MIET, Bhubaneswar	NE	NE	180		315		560
8	OEC, Bhubaneswar	430	540	620	780	1030		1500
9	SIT, Bhubaneswar	NE	NE	400	710	1022	1345	1343
10	KEC, Bhubaneswar	350	650	955	1365	1447	1585	1655
11	KIST, Jatani	NE	NE	NE	220	679	930	1289
12	EAST, Phulnakhara	NE	NE	220	516	943	1458	1688

Table: 2 Year wise Library Collection

Sl No	Name of the Engg. Colleges	Total Collection 2000-2001	Journal collections 2000-2001	Total collections 2001-2002	Journal collection 2001-2002	Total collections 2002-2003	Journal collection 2002-2003	Total collections 2003-2004	Journal collection 2003-2004	Total collections 2004-2005	Journal collections2004-2005	Total collections 2005-2006	Journal collection 2005-2006
1	CET, Bhubaneswar	2500	5	4200	10	4900	12	5400	20	6200	25	7500	30
2	KITS, Bhubaneswar	38800	38	42000	40	46300	55	48300	55	50750	65	58000	INDEST Consortium 70
3	COEB, Bhubaneswar	1350	10	4543	25	8105	30	10445	35	11080	40	13316	48
4	CVRCE, Bhubaneswar	18376	0	19476	10	22076	30	23776	35	24526	42	26526	57
5	ITER, Bhubaneswar	31153	0	32553	0	35353	20	37053	20	39153	40	41353	INDEST consortium
6	KIST, Jatani	*	0	0	0	3500	0	5200	nil	8700	40	10700	62
7	KISD, Bhubaneswar	*	0	3500	0	4500	0	4750	nil	5800	25	6390	30
8	MIET, Bhubaneswar	*	0	3500	0	3800	0	4250	nil	4800	25	5132	30
9	OEC, Bhubaneswar	19000	28	19600	28	20825	28	21375	30	22150	32	23550	37
10	SIT, Bhubaneswar	*	0	8043	10	11043	28	12093	30	13343	35	14093	41
11	KEC, Bhubaneswar	7950	0	8830	0	9650	0	11700	30	13000	45	13850	52
12	EAST, Phulnakhara	*	0	4726	5	9435	5	13182	16	14547	24	15392	32

Table 3: Details of the establishment of the Engineering College Libraries

Sl No.	Name of the college with address	District	year of establishment of college Library	Discipline	Web address
1	College of Engineering and Technology (CET) Techno Campus, Ghatikia, Khandagiri, Bhubaneswar -759146	Khurda	1981	7	www.cetindia.org
2	Kalinga Institute of Industrial Technology, Patia, Bhubaneswar KITS, Bhubaneswar	Khurda	1996	7	www.kiit.ac.in
3	College of Engineering(COEB), Plot 1, Sector-B, Patia, Bhubaneswar	Khurda	1999	5	www.coeb.org
4	CVRaman College of Engineering(CVRCE),Bidyanagar, Mohura, Bhubaneswar	Khurda	1997	8	www.cvraman.org
5	Institute of Technology Education & Research, Jagmohan Nagar, Jagmara, Khandagiri, Bhubaneswar	Khurda	1996	8	www.soa.ac.in/iter

6	Koustav Institute of Self Domain(KISD),Plot No.1(b), Sector-B, Chandaka Nucleous Industrial Complex, Patia, Bhubaneswar	Khurda	2001	5	www.kisdbbsr.org
7	Mahavir Institute of Engineering and Technology(MIET),Mahavir Nagar, P.O.- Palashpur,Via-Jania, Bhubaneswar	Khurda	2001	3	www.mietbbsr.in.com
8	Orissa Engineering College(OEC), Nabajyoti Vihar,Niligarh Kurki, Bhubaneswar	Khurda	1986	6	www.oecbbsr.org
9	Silicon Institute of Technology,Patia, Bhubaneswar	Khurda	2001	6	www.silicon.ac.in
10	Krupajala Engineering College(KEC), Prasanti Vihar,Pubasasan, Kausalyaganga, Bhubaneswar	Khurda	1999	6	www.theoca.com
11	Konark Institute of Science and Technology(KIST), Post Box No.21,Technopark, Jatni	Khurda	2002	5	www.thekist.org
12	Eastern Academy of Science and Technology, At-Prachi Vihar, P.O.Phulnakhra, Dist Khurda	Khurda	2001	5	www.eastpdossa.com

It shows the existing condition of the libraries now-a-days with the increase in Library collection year wise and the no. of users in the above three tables.

Table4: Allocation of funds

Sl No	Name of the college Govt. Colleges	Purchase of Books	Subscription of Journals
1	CET, Bhubaneswar	4.5 Lakhs	0.5Lakh
2	KITS, Bhubaneswar	8 .5 Lakhs	10 Lakhs
3	COEB, Bhubaneswar	6 Lakhs	2.5 Lakhs
4	CVRCE, Bhubaneswar	7 Lakhs	3 Lakhs
5	EAST, Phulnakhara	3.75Lakhs	1.25Lakhs
6	ITER, Bhubaneswar	10 Lakhs	5Lakhs
7	KIST, Jatani	2 Lakhs	1.5Lakhs
8	KISD, Bhubaneswar	3 Lakhs	2 Lakhs
9	MIET, Bhubaneswar	2 Lakhs	1 Lakhs
10	OEC, Bhubaneswar	Not mentioned	Not mentioned
11	SIT, Bhubaneswar	15 Lakhs	15 Lakhs
12	KEC, Bhubaneswar	2 Lakhs	2Lakhs

From the above table-2 & table-4, it focus the economic condition of the various engineering college libraries, where we can not think of the well being of the Journal subscription. It has found that out of 12 Engineering College Libraries, only 16.66% Libraries are subscribing the on-line journals through INDEST Consortium.

Table 5: Working hours of the Engineering College Libraries

Sl No	Name of the college Govt. Colleges	Normal Working hours	During Vacation	During Holiday
1	CET, Bhubaneswar	7am to 2pm	Closed	Closed
2	KITS, Bhubaneswar	6am to 6am	6am to 6am	6am to 6am
3	COEB, Bhubaneswar	9am to 5pm	9am to 5pm	Closed
4	CVRCE, Bhubaneswar	9.30am to 5pm	Closed	Closed
5	EAST, Phulnakhara	8 am to 4.30pm	8am to 1.30pm	Closed
6	ITER, Bhubaneswar	7.30am to 5.30 pm	7am to 2pm	Closed
7	KIST, Jatani	8am to 3.30pm	8am to 1am	Closed
8	KISD, Bhubaneswar	8am to 3pm	6am to 1pm	8.30 am to 1pm
9	MIET, Bhubaneswar	8am to 3.30pm	8am to 1pm	Closed
10	OEC, Bhubaneswar	8.30 am to 2.30 pm	8.30 am to 2.30pm	Closed
11	SIT, Bhubaneswar	8am to 8pm	9.30am to 1.20pm	9.30am to 1.30pm
12	KEC, Bhubaneswar	9am to 5pm	10am to 4pm	Closed

Mode of Accessing E-Resources During Working Hours

It is surprisingly found that 33.33% libraries are quite up to date in the various library activities. But still 66.67% libraries are not having adequate library resources for accessing e-resources.

Resource Sharing & Networking

It is surprisingly found that not a single library has ever made any Resource sharing facility inside the Bhubaneswar city and there is also no networking among them. Some of the libraries are remain silent regarding the e-resources also.

Library Automation

Some of the library is functioning without any library automation package. Still today they believe in manual system as they don't have sufficient fund. Some of the libraries are remain silent regarding the Library automation.

Suggestions

The specific recommendation (leased) e- resources may be received from reader, fellow librarian or company employee.

The electronic resources which are being used by the libraries should be periodically evaluated on the basis of their usability (user, opinion be collected) and decision be taken either to continue or cancel the subscription to these resources.

The libraries under study should obtain license to use the product. Such license to use the product and should guarantee a satisfactory quality of services for the subscriber and it should clear on to what is allowed and what is not allowed by both parties. All terms conditions hidden, charges etc be clearly spelt out.

For improved accessibility of the e-information resources, the libraries under survey should create appropriate plat forms. The CD net system may be developed for the local area network similarly; the libraries should have their websites with pointer to the electronics resources to provide remote access to theses library materials.

The libraries should subscribe to consortia based resources as available with informatics India pvt.Ltd. Or Govt. of India, or they can form the own e-resources consortia for enhanced access to e=journals in their field of research.

The present study explains the state of e-collection development and management in the engineering college libraries of Bhubaneswar city. The assessment of the present study lies upon the general consideration of the policy, practices and procedures adopted by the libraries under study.

Further research may be undertaken in the following aspect of e-collection development and management of e-resources.

1. An extensive user survey may be undertaken to assess the usability of libraries e-collection.
2. Specific research should be conducted for long-term preservation of the e-resources of the libraries.

Conclusion

First of all in Orissa state, the Library Legislation Act should be implemented in true sense.

The electronic resources have grater impact on library. To select and maintains

* A common set of knowledge resource for user communities.
* Provide convenient and intelligent access to these resources.
* Maintain access to the archives.

A comprehensive the collection management policy of e-resources may be maintained by the libraries under study in order to follow a standard practices for acquisition and management of Electronic Information Resources

There should be specific budget for the procurement new resources and renewal of existing resources such e-journal, e-databases, online subscription etc.

The staff, researcher responsible for e-collection acquisition should collect the information about the electronic information product for the following major sources, publisher pdf, e-mail, and list sever notification by researcher and colleagues.

Advancement of information technology has brought about many changes in libraries. Information professionals have to switch over to new method and techniques for handling information. It has made access to information easier, in the sense that all digital information, such as databases .full text journal etc.can be assessed through computers on the network both at work and from home. The concept electronic library as computer based system to provide circulation, access to online acquisitions and serial e-collection planning building should first formulate a policy as a guideline for the same secondly ,they should develop local area network, content creations through digitization, software/hardware procurement etc.

The libraries also should adopt a proper method for long-term preservation of the e-collection for future use and access. The appropriate user interface in have option to do e-collection will make the information services to pattern easy.

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Content Creation, Analysis and Development on the Web: A General Perspective

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ABSTRACT

Content analysis is a research tools used to determine the presence of words or concepts in the text. Content use and usability is positively related to excellent presentation style and quality of the materials and negatively related to the loose integration and lack of free flow of thought content within the document, excessive high color and contrast, excessive images inclined the text etc. The article defines the term 'Content,' and delves into the complexities of content creation and development. It briefly touches upon concepts like logical and physical complexities of the document, problems involved in information analysis, consolidation, repackaging in relation to digitization. In digital environment, most of the information seekers increasingly depend upon the web for digital contents but have no clue how to retrieve intended information; which led to the demand for content organization and content development. The paper deals with the overview of content creation, content analysis and development..

Key words: Content; Content creation; Content analysis; Content development.

Introduction

With the rapid advancement in the information, and communication technologies, a fascinating world of digital resources has been created, as a parallel to the existing world in which we are living today. There are continuous efforts all around the world to make use of the digital technology for wide ranging application, and usage. In the area of knowledge, and content management, capturing, organizing, and dissemination of knowledge become the top priority. Today, a host of institutions and individuals are engaged in putting the content in digital form mainly for the following reasons.

- Putting knowledge into practice
- Professional/Personal communication or services
- Preservation of knowledge, and cultural heritage
- Educational applications and
- Research community publication.

Understanding Content

Oxford, English dictionary defines 'content' simply as, 'that which is contained in any thing.' Thus, in short, content shows the items, their location, their order in a document, or in simple words, 'what a document contains.' The finar components contain ideas. It is precisely these ideas which have to be referred as content. Content may be viewed in three different aspects as –Descriptive aspect (an attempt to give a pen -picture of a person, or a place, or an event etc.) –counseling aspect (interpersonal communication, specialized interviews with application in psychiatry and behavioral science) –Inferential aspect (projecting the future, cause and effect, reconstructing the past based on facts, etc.)[1]

Types of Contents

The types of contents on a website as databases:

Graphics: It includes banner advertisements, product shots, company Logos, designed items, tables and other images;

Text: Textual information of search results, product information, reviews, services, general announcements and press releases;

Multimedia: Contents created with graphics, sound, text, photographs, moving pictures, etc.;

Database: Information from the database is used to create dynamic search results, personalized information, product reviews, helpdesk data, other supporting data. Updating the database needs to be part of the website content management process;

File from Website: Files from the websites may be downloaded as MS-Word documents, PDF files, ZIP archives, Graphics etc.; and Other applications and programs on website contents.

What are Digital Contents?

The resources of information, which are available in the form of digital format, are known as digital resources. Digital resource is the knowledge or content that becomes a dynamic resource for global sharing more easily than knowledge in any form and lends scope for automated delivery mechanisms. Content information have been embedded in varieties of ways and forms in various kinds of digital resources. Following are some of the digital content resources by which the

required contents may be accessed, organized and managed for providing content service to the users[2]:

OPAC (On-line Public Access Catalogue)

Electronic publications through LAN, WAN, WWW etc.

World Wide Webs

National and International Computer Networks

CD-ROM / Multimedia Networks

E-mail and Bulletin Board on Internet and Intranet

Other Electronic /digital resources of information.

Content creation and Development: Some Complexities

There are various forms to present and publish information in the digital form. Information can be presented on web site, or compiled in CD-ROM, or only magnetic media for presentation or archival and presentation purposes.

In case of larger or compound documents having different type of content mere digitization is not sufficient. If the same have to be presented properly in digital form, there are certain complex aspects, which need to be considered before the process of digitization. The two major types of complexities can be termed as (a) logical complexities (b) Physical complexities, Hence, a document exhibiting the complexities mentioned above, can be termed as a 'complex document' (ex, the epics, puranas, Vedas etc).

Logical Complexities

Logical complexities of a document are mainly because of logical nature of the source i.e. the type of language, or use of different languages, use of grammar, syntax, presentation flow, metamorphical explanation etc. Hence, the complexities within the source document have to be visualized before digitization. Exploring complexities from the point of view of potential readers/users is also extremely important.

Physical complexities

These complexities are related to the physical form the document as (a) printed material (b) Hand written manuscripts (on paper, cloth parchment, papyrus etc) (c) paintings, pictures on walls of old monuments (d) Art work on cloth (e) Electronic forms (Audio, video microforms, cassettes etc.) valve, rarity of documents, authenticity, historical valve details of ownership different scripts, font, language etc. are some of the other attributes which added to the complexity of document, Ancient Indian literature like shri. Dhyaneshwari, Dasbodh,

Chakradharswamy, saint literature etc. can be classified under this category[3]. Apart from the above mentioned complexities in relation to documents, there are several other in relation to digitization, which have to be addressed with great care, before taking a decision regarding choice of documents, for content creation and development on any chosen area.

Content Analysis

Content analysis is a research method that uses a set of categorization procedures making valid and replicable inferences from data (textual as well as graphics) to their context. In other words, content analysis is a research tools used to determine the presence of words or concepts in the text. World Wide Web has become a major information resource for everybody. With a wide range of websites and webpage's, it becomes increasingly important to have effective techniques to describe their contents and help the users to search their required information. The content analysis in web environment involves the categorization, splitting the content into meaningful units.

Importance of Content Analysis

World Wide Web has become a major information resource that is more and more popular to information users. With a wide range of web sites providing information on topics as broad as any library can provide, it becomes increasingly important to have effective techniques to analyze, describe their content and help users to locate their information. Content Analysis is an important aspect of content organization and development. Web content analysis may be the analysis of webpage's, website links and content checking. There are different software's available for automatic checking, example is Site Mechanic, which is free one. It tests the browser's capability, optimizes for search engine's indexing capability.

Content analysis tries to analyze the content contained in the website. It verifies the file size of a site and also checks the proportion of images within it. It can be a powerful tool for determining authorship. For example, one technique for determining authorship is to compile a list of suspected authors, examine their prior writings, and correlate the frequency of nouns or function words of help build a case for the probability of each person's authorship of the data of interest.[4]

Content Analysis in WebPages and Websites

Content analysis in Web tries to study the nature of WebPages, websites and the permanence and consistency of WebPages and websites. Web documents are transitory. But, how transitory are they? How often do they change, what changes, and does it matter? How permanent are web page, web sites, and server level domains? What is the death rate of

each? How often do they move? Do different types of Web pages, Web sites and domain behave differently? It is a fact that quite often the content of Web pages change. It is true that the classification and categorization are the two important elements of content analysis. Therefore, we should see how these two elements can be applied in Web documents. Web entities can be classified using a variety of markers.

First set of markers consists of the elements or fragments incorporated into the URLs. These markers include the domain names, directory structure of the site, semiotic tag patterns, unusual ports, the use of titles, to attach documents to Web sites. Second set of markers can be derived from analysis of Web and page size, object counts. This set also includes the hypertext link pattern and the relationship of any given pages to other members of the site set. These markers can be used to build Web page and site classification schemes. These can also be utilized to help understand and identify Web sites and page consistency and permanence behavior.

Web sites are inherently more permanent than specific Web Pages, since Web Sites consist of web pages. Different web pages types will manifests different permanence and onsistency characteristics. Because of the changing nature of what they point to, navigational pages change on aggregate more often than do "content". However, content Pages are less permanent than navigation because navigation pages must be point to new content, while content pages need not point to navigation.

For content analysis in Web Sites and Web Pages, one should look into a number of aspects of pages including the source and target page's description, link anchors and their context and the location and availability of target pages. For both the source and target pages, it is essential to collect the URLs, the header and titles actually display on the page (if any) and a description of the pages. Description includes the page types, and the percentage of occurrence of page types and page components. Table 1 in the following provides the brief description of them.

Page Type	Brief Description	Example Sub-Classes
Organizational	Pages that provide some kind of structure or access aids to the reader	Index, Site map, table of content
Documentation	Page provides for reference or consultation	FAQ, How-to, tutorial

Text	Includes most types of writing	Articles scholarly paper, contact, resume
Home Page	Pages that introduce an organization, or person, and usually links to other pages about that entity	Organization Home Page, Person home page
Multimedia	Includes sound, video, images	Movie clips, recordings
Tools	Provides, means for reader to accomplish a task	Search, place an order, comment form
Database Entity	Contained highly structured information such as might result from a database entity	Catalog entry, genealogy record

Table 1. Page types, classes, brief description & examples subclasses

Web Content Creation

The process of content creation generally is of two types, namely streaming content and non-streaming content. Streaming content is that where the multimedia components like real time audio- video, movies, video conferencing etc are used to present interviews, songs, mp3, movies etc. While the non-streaming format includes text, pictures, graphics etc presented in the form of static or dynamic pages. The storage and presentation of contents differs in the senses that non-streaming contents are stored in the databases, whereas steaming contents like audio and movie are stored in a media server like media player, real player.[5]

Content Development

Content development allows organizations to create, manage, personalize and deliver contents to its intended users effectively. Content development is collaborative and continuous interactive process. The objective is to gather, organize, edit and improve the quality of message in the text, image, audio and video etc. To handle the vast complexity in Web effectively, it is important to make some order in Web by organizing the content in webpage's thereby enhances the recall-precision ratio by eliminating unwanted information. Content development will be successful through content analysis, content organization and application of metadata while creating content in

webpage's. Recently, World Wide Web Consortium (W3C) has developed Web Content Accessibility guidelines which emphasizes to use of markup languages, content having clear and simple and use of context in the webpage's. The efficiency and effectiveness of content development can be strengthen by applying some trips as explained in the following sections

Making Content Searchable

The best way to achieve this goal is by having a search solution integrated within a site. Web-based search engine technology has been around for about five years, while online text searching has been in use since the early 1970s. However, there are some ways and means by which it is possible to enhance the usability of the content. Some of them are discussed below—

Search Engine- A good search engine can go a long way towards bringing the appearance of order to chaos and helping users find relevant content, but it should also be kept in mind that search engines cannot do everything.

Page Title- Descriptive, concise and accurate page titles are extremely helpful in making content more findable. It is reasonable not to use more than 50 characters with the more useful words in the title section.

Meta Tags- Meta Tags describe and summarize the page content to assist the search engine to search the document in no time. Customized meta tagging can be of extremely useful in organizing information, which will help to enhance the usability.

Meta Keywords- The Meta Keyword tag allows you to define further the content of a page by entering additional related meaningful keywords of a particular document.

Image Maps- Image maps are graphical images with links or actions associated with sections of the images. There are two kinds of image maps.

Client Side and; Server Side

Client Side image maps are graphic files with link information contained within the html pages. Whereas server side image maps store their links on a particular location in the image before serving the link, robots cannot click on the map so they are stack. Therefore, any site with server side image maps should also have text link to a page that lists all the image map links.

Java Script- JavaScript can write in HTML file using "document. write" or "document.writeln" command. Most search engine will have a difficulty recognizing links contained within the Script.

Redirection Links- A redirect links towards visitors from an old or inappropriate URL to working URL. Redirects are very useful because they allow old bookmarks to always used to the most current information, regardless of location.

Frames-- Frames design involves using multiple, separate HTML pages create a single, integrated look. A frameset page provides the overall structure that contains the content for each frame. Some search engines are incapable of in designing the links inside the <FRAMESET> tag. Therefore, it is advisable to keep all links within

<NOFRAME>

Plug-ins and Alternative Interface- Web Site created by other interfaces, such as Java and plug-ins like Macromedia Flash cannot be indexed by some search softwares. An alternative version must be generated in order to accessible the content. Good information organization, clear site design and good search engine have a tremendous impact for content accessible by the users.

Dynamic Data- Web Pages generally are of two types- static and dynamic. Web pages which are dynamically created using database technology based on users' need may sometimes faces the difficulty for allowing the search engines to index these pages.[6]

Integration of Web Services and Web Contents in Academic Networks

Conventional web contents target at human consumption and are published with standard languages such as HTML, which can be accessed through client browser applications. Standard HTTL protocol is used for the communication between a web server and a client. Web services on the other hand target at machine consumption and are application, which can be realized at heterogeneous systems.

However in the semantic web information is marked up with metadata and can be manipulated by autonomous agents on behalf of their users. So web contents are in the process of becoming data with well-defined meaning that can also be consumed by machines. Since they target the same scholar, web services and web contents have the necessary common ground to be managed together in a academic web information retrieval system.[7]

Conclusion

In the present age of information revolution and ever increasing demand for exact and consolidated information, the functions and old methods followed by traditional librarians are being replaced by new techniques

and technologies such as Artificial Intelligence, Expert Systems, Comprehensive data bases, Mobile computing, Internet, WWW, Data Mining, Knowledge Portals, Multimedia, Hypermedia, etc. Content creation and content analysis plays in indispensable role in the digital age.

Web content is the staple food to the researchers, information seekers and others. Therefore, the most important aspect is content organization, analysis, development and the user & usability with the objective of enhancing the relevance in information retrieval in the web. The rapid growth of content in the web makes the web is a state of confusion and complex. In order to reduce the complexity and enhancing the precision rate in the retrieval, some guidelines must be followed while creating contents, uploading in web. It is possible to bring some order in web if everyone follows some standards and tools for content creation and development.

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Developing Library Resources and Services in a Special Institution Library in the Internet Era: A Case Study of IFMR Library

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The paper talks of the role of Internet in the service of the librarians. Developing library resources real challenge for the librarians. The paper further opens up the case study of IFMR Library. Developing and managing the resources and services of a special institution library is a challenge task. IFMR Library (H. T. Parekh Library) is an archive and reference library. It is used by Institute's faculty members, researchers, staff, students as well as outsiders for their academic and research requirements. It is a depository library for all World Bank, GATT and UNU publications and receives few complementary copies of publications from ADB, IFPRI, OECD, FRBs, UNCTAD etc.

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Diffusion and Utilization of Electronic Information Science in University Libraries in Andhra Pradesh: A Case Study

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ABSTRACT

This paper discusses the importance of electronic information in different types of university libraries in Andhra Pradesh in changing environment. It gives how far the university libraries introduced and provided information technology to their users for utilizing the electronic information through the information technology products/services. It presents different electronic formats. It describes about university libraries in electronic information era. The paper attempts to describe the concepts and definitions of Information Technology and the electronic information. It depicts Electronic information diffusion and utilization in university libraries.

Keywords: Information Technology – Technological revolution – university libraries – Information explosion - Electronic information – Electronic formats – Electronic sources – Electronic information era – E learning – Search engines – Data conversion – Inflibnet – Diffusion and utilization of electronic information – IT Products/Services – Library Automation.

Introduction

The unprecedented growth of information and knowledge proliferation and at the same time an ever increasing demands from readers in academic community especially in the university education provision of library and Information services on modern lines by using information and communication technology. Therefore, there is a need to give a new dimension in collection, management, processing, and dissemination of information.

In order to visualize the new dimensions of Library trends and system, the organization of information must be a fundamental focus of the profession. There should be a clear-cut relation between the

organizations of information to the natural process of information seeking and knowledge utilization. There should be a concern in the field of information environment, the history, context and information process in society.

The electronic information and its use have an advantage to accommodate increased workload, achieve greater efficiency, and generate new series and helps in cooperative activities. The application and use of information technology in the emerging electronic environment in university libraries definitely help in improving the quality and productivity o library and information service.

New forms of learning are taking place now. Books are being actively substituted and even replaced by the products of information technology, specially CD ROMs and online databases. The most important change during the last few years s the growing use of Internet for reference work. Now, experts believe that the shift from page to screen, which was once a fantasy, is approaching reality. Students in many universities use textbooks that exist online. They may also find websites that have recorded lectures. The whole book can be downloaded from the Internet to be studied as and when desired. Till a few years back, the material available on various subjects was not sufficient and the students could not depend upon it due to the paucity of resources but enough learning materials have been uploaded recently and everybody can find the services satisfactory now.

Technological Revolution

The technological revolution has influenced the libraries so deeply and profoundly. Almost every function in the University libraries has been influenced by the advance in electronics, computers and telecommunications. The traditional catalogue cards, printed indexes and abstracts etc are being replaced with databases. The merger of computers and printing is leading to a new method of information transfer. The vast and fast advance in technology is so extensive and now it is not easy to assess its total effect. But it is clear that the University Libraries are in a state of fundamental transformation in the electronic environment.

Whether the library provides CD-ROM disks, CCOD disks, on-line databases or printed books or periodical indexes, it is the responsibility of the Librarian to give proper instruction to the users to make use of them properly. Computerized indexes are still in their infant stage. Problem of standardization exists there and hence unless the users are given proper direction and guidance it is likely that they may miss much of what is available in the library.

There is a drastic change in the publication as they also take the shape of electronic form. On-line journals are already available in Electronic Information Exchange System (EIES). Many European publishers have already developed the system of Article Delivery On-line Information System (ADONIS), a system to deliver file journal articles on demand from the users. Other new technologies already in use include Video and Optical Disks, CD-ROM, Videotext Systems and Digital Tele-facsimile equipment etc. All these allow the user to identify and locate information even without entering in a library.

Definition and Concepts

Electronic Information may be broadly defined as "Information stored in a medium, which required an electronic device to read its contents". For example, information stored in Floppies, CDs, Magnetic Tapes, video, etc. which can be retrieved with the help of electronic devices such computer, Video player, etc. Electronic information is understood to mean data in a format which allows to be processed automatically generally speaking on some kind of electronic medium.

Electronic Formats

Electronic Information to meet the Information requirements of its users. The different formats such as:

1) Floppies
2) CD – ROMs
3) Net Work Connecting
4) Magnetic tapes
5) Video etc.

Evolving electronic technologies includes powerful and inexpensive personal computers, scanners, the internet, the world wide web, telnet, electronic mail, and others advances are rapidly changing the library's approach to collection development and the storage and retrieval of Information. Advances in hardware and software for the digitization of Information have made electronic publishing available format for scholarly communication. The rapid success of electronic resources has raised expectations among publishers, librarians, and scholars for such formats, this technology is developing so quickly that it is difficult to ascertain what impact future electronic resources will have on libraries.

Indian Scenario

University libraries in India had a glorious past. A glance at the development in the last century shows that they not only grew in number exponentially but also the services being provided by them was recognized internationally. Dr. S. R. Ranganathan made a great contribution to the field and proved that the Indian techniques of dealing

with the knowledge and information were not inferior to that of any other country in the world.

The present university system was designed by the previous generation of librarians in response to the prevailing conditions of that time. The system responded to the situation very well but it needs changes in the present perspective when a number of IT gadgets have emerged during the last one-decade. They are affecting the library and information activities'and the impact is clearly visible on the university libraries since they are very closely linked with research and development.

Various Government agencies like UNESCO, INSDOC, DESIDOC, AICTE, Department of Electronics and Planning Commission offer assistance in modernization of university libraries. The University Grants Commission besides making funds available sanctioned the post of information scientist for every university library for computerization. Barring a few of them, the progress is far from satisfactory.

The information and Library New work (INFLIBNET) Project launched in the eighties with an objective of linking the university and college libraries of the country for the purpose of resource sharing and reduction in the expenditure on books and journals by avoiding purchase of duplicate copies. But even after the lapse of a considerable time we are not in a position to justify ourselves.

Now, the task of computerization is not so difficult as before. The purchase of suitable hardware could have been a problem ten years ago but it is well within the limit for any institute of higher education now. A document generally needs 500 bytes of information to the most for its processing in libraries and thus a computer with 20 or 40 GB hard disk drive can easily accommodate a large number of documents that only very big libraries might be holding. In case of the software when no understanding could reach on a uniform software package it is optional for the institutions to choose the package of their own choice, which contains the provision of data conversion as per the common communication format.

In the current perspective, university libraries should not exhaust their energy in computerization alone. Even if they achieve it, the users will get access to a small portion of resources on disposal now. The need of the hour is to emphasize on the Internet connectivity for scanning and downloading the relevant information, which is available in every discipline of study at no cost, or comparatively at an unbelievable lower cost. For instance, the Encyclopedia Britannica is available more than ten times cheaper on CD ROM than in print and a part from providing all

the information as available on paper it facilitates speedy retrieval and connects the users with thousands of sites on Internet as an additional advantage. It is also updated instantly.

Electronic Information Era

This age may be truly called as electronic Information era caused by the explosion of electronic methods in every specialized field. Yet this is only a part of which changes taking place for the socio-economic, cultural development, which at present has brought a new dimension in the means of human communication. Today we are moving from the print media towards the magnetic tape, thus giving rise is electronic library. This is true even in case of university libraries. In the past, information was in the form of hand written, prints, but now it is available on tapes, disc, etc. This of course is a symbol of progress in the very concept of the form in which the information exists.

University Libraries in Electronic Information Era

This age may be truly called as electronic Information era caused by the explosion of electronic methods in every specialized field. Yet this is only a part of the huge changes taking place for the socio-economic, cultural developments, which are present, has brought a new dimension in the means of human communication. Today, we are moving from the print media towards the magnetic tape, thus giving rise is electronic library. This is true even in case of university libraries. In the past, information was in the form of hand written, prints, but now it is available on tapes, discs, etc. this of course is a symbol of progress in the very concept of the form in which the information exist.

Electronic Collection

Technology has been an important driving force for change. The wholesale integration of information technology into mainstream organizational routines has affected everyone. A fully networked organization is considered to be powerful way of fostering more collaboration and cooperation between individual and organization, reshaping work style and improving towards a more digital culture. At one extreme is the computing industry where a combination of flexible working routines, advanced telecommunications and high end office technology is seen as an important investment in developing a more customer centered approach. This is resulting in a growing community of remote, distributed and mobile workers with an increasing infrastructure.

Virtually all libraries, at least in the most-developed countries, are new members of networks that greatly facilitate the location of sources of information and the gaining of access to them. Card catalogues have largely been replaced by online catalogues and these are being expanded

through the addition of materials not previously included. The whole idea of what a catalogue should be is changing; it is no longer seen as a tool bounded by the collections of a single library but one that reveals the availability of resources in a network of libraries or even one that is essentially a gate way to a universe of information resources in printed, electronic or other forms.

E-Documents

There are such information sources also, which are counted in the category of non-documentary sources in addition to documentary sources for transferring the information and the paper is not used in making them, hence they are without paper i.e., paperless. Sources in which the paper are not used is called non-paper sources, which are increasing very fast (day by day). Hence, it is said that the modern society is changing towards paperless society. Consisting microforms, audio-visual materials, and electronic documents and in brief E-documents.

So, E-documents are those sources of information, which communicate the information via electronic media. Electronic media is a computer-based media for storage and dissemination of information. The two advances held in the field of electronic media have totally changed the process of information dissemination and retrieval.

E-Books

Electronic publishing is the use of computers to design, edit, and distribute material that traditionally would have been produced on printing presses. Electronic publishing represents the third stage of a computer-based publishing revolution. First came *Computerised typesetting*, in which computers produced printed galleys of text. Second came *desktop-publishing*. Editors and designers used computers to edit text and layout pages. The pages were then assembled at least partly by computer and printed on presses. In the third sage, completely electronic publishing, books, magazines, newspapers, and other materials appear only electronically. These materials are distributed on floppy disks or CD-ROMs or are sent out over a vast computer network called the Internet. In addition, publishers of printed books, magazines, and newspapers are distributing electronic versions of their products.

E-Journals

Information is one of the basic resources that are needed and utilized by human beings for their development and prosperity. Information is nothing but the recorded experience that is used for decision-making. The world has moved from industrial revolution to information revolution. The modern world depends upon the information for social, economic, scientific, and technical development. The very fabric of

scientific society is deeply rooted in primary sources for information. Normally, periodical is classified into three namely, journals, magazines and newspapers. Among the journals are the most important medium of scientific communication and therefore the providers of up-to-date information to the scientific community.

Electronic publication include "both publications created specifically in electronic format and publications originally created in paper format and then later transferred to electronic format under conditions of conformity with copyright law."

Electronic sources of information utilized mainly in three forms. They are

(1). Electronic Media like CD-ROMs etc.,
(2). On-line databases
(3). Internet

Electronic resources gained popularity in the last decade of 20th century. In early 1970s, information system for libraries was built around mini and mainframe computers, providing remote access and on-line search and retrieval services to users. OPAC came as a replacement for the traditional card catalogues that made the manual processes more efficient, and also opened up the library collections to the researchers. As the Internet began to grow several library catalogues with their Web interface, started appearing on the net which could be accessed remotely from anywhere in the world.

Purpose

The purpose of the topic chosen mainly to know about the electronic information role in University Libraries in Andhra Pradesh. The study mainly concerned how far the electronic information diffusion and utilized in university libraries and how far the electronic information diffusion and in which form this information utilized by the different kinds of users in different kinds of university libraries mainly in Andhra Pradesh.

Objectives of the Study

1. To study and identify the collection development methods prevailing in the university libraries in Andhra Pradesh in changing electronic environment.
2. To examine the availability of computers and electronic gadgets (devices) in university libraries for library automation and networking facility.
3. To examine the status of database creation achieved by the university libraries by using Information Technology

4. To identify the electronic information services available in university libraries under study.
5. To identify resource-sharing facilities through INFLIBNET and other network sources.
6. To examine staff opinions on library automation and networking.
7. To study the purpose of library automation and networking from the point of the readers in university libraries.
8. To study the IT products / services available in university libraries for diffusion of electronic information to the users.
9. To examine the factors influencing the readers towards library automation and networking.

Hypotheses

1. Even today majority of the university libraries do possess conventional documents rather than electronic documents. However, almost all university libraries are initiating to collect electronic publishing documents (Non-Conventional Documents i.e., CDs, DVDs etc.).
2. Though majority of the university libraries have acquired computers for the purpose of library automation and networking, they are not yet to introduce electronic information services expected by the users.
3. The influence of INFLIBNET made almost all university libraries to choose SOUL package as software package for library automation and networking.
4. Almost all university libraries which are covered under the INFLIBNET programme are utilizing Inflibnet resource sharing facilities and on-line information access services for the benefit of the users.
5. Majority of the university libraries have not completed data conversion either prospective or retrospective conversion. Hence it has become major hurdle in the on-line information access process.
6. Majority of the library professionals don't possesses computer-training facilities in university libraries because there is lack of computer training facilities in university libraries.
7. Majority of the university libraries don't possesses sufficient IT products / services for distribution of electronic information in various forms.
8. Almost users are all of the opinion that electronic information services almost helpful for the users to get in pin-pointed information at as and when required at their door-steps.
9. Majority of the library professionals do prefer to have IT services to raise the status of the university libraries.

Study Design

In order to achieve and set goals or to make useful valid inferences basis on the observations made, the study is planned in a systematic manner. A well-designed research study by employing appropriate research methodology is applied to bring our reliable observations from the sample.

Usually in the case of research surveys, two types of approaches are followed. One is the complete coverage and the other one is a sample study. The first type or the complete coverage is quite appropriate, where the groups to be covered are small. On the other hand, large surveys covering larger groups should invariably resort to sampling procedures in view of their cost and time effectiveness.

Methodology of the Study

There are different survey research methods used for eliciting needed information in the field of Social Science Research. Of all these methods, questionnaire and interview are the most popular and are widely used. The same method has been followed for obtaining the needed information in the present study.

'Questionnaire Method' has been employed to collect relevant data. All questions are factual and are intended to obtain correct information about the conditions of which the respondents were presumed to have knowledge. Questionnaire method has its usual limitations such as respondents' negligence to answer questions and giving irrelevant answer, thus, lowering response rate to questions. Supplementing the questionnaire method with interviews has minimized these limitations. Most of the respondents were interviewed in order to elicit their personal opinions. Questionnaire has been designed for three categories of respondents: namely (1) for university libraries / library in-charge; (2) for library professionals working in the university libraries; and (3) for readers.

Over Andhra Pradesh has 23 university and all most all universities have their own University Library. Here the study done only which was established at first in that category. All the three questionnaires were pre-tested and needed modifications were made. Then these were distributed to different kinds of respondents in the 15 University Libraries included in the present study. These selected only 15-university libraries are understudy. These categories as under

Traditional University (Old)

- Osmania University Hyderabad
- Andhra University Visakhapatnam
- Sir Venkateswara University Tirupathi

Traditional University (New)

Sri Krishnadevaraya University	Anantapur
Kakatiya University	Warangal
Acharya Nagarujuna University	Guntur

Special University

Sri Venkata Padamavathi Mahila University	Tirupathi
Sri Potti Sriramulu Telugu University	Hyderabad
Dr.B.R.Ambedkar Open University	Hyderabad

Professional university

Jawaharlal Nehru Technological University	Hyderabad
Acharya N.G.Ranga Agricultural University	Hyderabad
NTR Health University	Vijayawada

CENERAL UNIVERSITY

University of Hyderabad	Hyderabad
Central Institute of English & Foreign Languages	Hyderabad
Rastriya Sanskrit Vidyapeet	Tirupathi

Limitations of the study

The University Libraries attached to the universities in the country are all functioning under the guidelines of University Grants Commission. Hence, all University libraries in the country carry uniform objectives, rules and regulations. Further, the pattern of budget and human resource management are also uniform in almost all university libraries. Therefore, the jurisdiction of this study limited to Andhra Pradesh. There are 23 Universities / Institutions of Higher Education approved by UGC located in the State of Andhra Pradesh. Since single staff maintains few university libraries, they are deleted from the study. As such, this study is limited to 15 University Libraries located all over the state.

Hypotheses Tested

1. Even today majority of the university libraries do possess conventional documents rather than electronic documents. However almost all university libraries in A.P. are taking initiating to collect electronic publishing documents. But most of the university libraries are having only conventional documents whereas some old university libraries are having conventional as well as non-conventional documents. Hence, the tested hypothesis one is accepted.

2. Though majority of the university libraries have acquired computers for the purpose of library automation and networking. They are yet to introduce electronic information services expected by the users. The

availability of electronic gadgets and computer systems and other related equipment installed under library automation in different university libraries in A.P. The computers installed in university libraries for library automation are increasing. Hence, hypothesis is accepted. The availability of the electronic information services in university libraries providing are also available. Hence, the hypothesis two is accepted.

3. The influence of INFLIBNET made almost all university libraries to choose SOUL package as software package for library automation and networking. The SOUL package of the most popularity used packages followed by LIBSYS package. Hence, the hypothesis three is accepted.

4. All most all the university libraries which are covered under the INFLIBNET programmed are utilizing inflibnet resource sharing facilities and on line information access services for the benefit of the users. The utilization of inflibnet resources among the different university libraries, which are covered under Inflibnet programmed. Hence, the tested hypothesis four is accepted.

5. Majority of the university libraries have not completed data conversion either prospective or retrospective conversion. Hence, it has become major hurdle in the online information access process. The status of library automation and type of data conversion as given by the heads of the university libraries. Status of library automation completed is rather low. The library automation is in progress is high and the heads of library also preferred some conventional systems. Some of them preferred computerized systems and some preferred both systems and the type of data conversion undertaken by the libraries are retrospective, prospective. Hence, the hypothesis five tested is accepted.

6. Majority of the library professionals don't possess computer-training facilities in university library because there is lack of computer training facilities in university libraries. The study reflects that trained staff available in university libraries is inadequate. It is less when compared to university to university and type of university to type of university. Hence, the hypothesis test is rejected.

7. Majority of the university libraries do not possesses sufficient IT products/services for distribution of electronic information in various forms. IT products / services are not available in all university libraries except in SPMV Library. Hence, the hypothesis seven is accepted.

8. Almost all users are of the opinion that electronic information services helpful for the users to get in pinpointed information at as and when required at their doorsteps. It is observed that majority of the university

library heads do agree that users are interested to have a piece of information instead of documents and also to access information at anytime at anyplace at any document through network. Whereas all university libraries have accepted to that the university library provide electronic information services almost helpful to get pinpointed information to the users. Hence, the tested hypothesis eight is accepted.

9. Majority of the library professionals do prefer to have IT services to raise the status of the university libraries. It is observed that majority of the library professionals stated that they are willing to work in IT environment. Hence, the hypothesis nine is accepted.

Findings

1. This study reveals that only six (6) university libraries out of 15 are having librarians. In-charge librarians head Five (5) university libraries and four (4) libraries are not having librarians. Another important thing to know is that regarding professional staff, The University of Hyderabad (UOH) is having maximum staff (57), whereas minimum staff (2) is noted at NTR Health Sciences University (NTRHSU). Further, library assistants are found more in number than that of Deputy Librarians (DL) and Assistant Librarians (AL) in almost all university libraries. It is observed that no university library is having an accountant position. So also three (3) university libraries are found to be maintaining without attenders and three (3) more libraries have no sweepers. This is the staff situation revealed in the University libraries under study.

It is observed that almost all university libraries are having the traditional collection such as books, back volumes of journals, reference books, text books collection, competitive examination books and theses collection. Only few old university libraries are having audio-visual collection and also microfilm collection.

3. Thirteen (13) university libraries under study have some CD-ROM databases in their collection while periodicals, both Foreign and Indian, are subscribed based on funds available in each university library.

It is noticed that the user group of all university libraries are common. But the strength of the users is very based on the age and the type of university library. Normally, the user group is more in traditional university libraries when compared to professional university librarians.

It also revealed that the average number of visitors for the day in general is more in the traditional type of university libraries than the professional university libraries.

The study also indicates that all university libraries are providing traditional services to its users including bibliographic services whereas e-mail service is provided in 5 university libraries (AU, KU, JNTU, NTRHSU and UOH). Similarly, the Internet service is available in 6 university libraries (AU, KU, SPMVV, NTRHSU, JNTU and UOH). It is also found that these services are more utilized by the users of traditional university libraries.

It is noticed that telephone, which is popular communication device, is available in all 15-university libraries. So also it is observed that computers, servers, scanners, printers are available in all university libraries but number varies in old universities to that of new universities. These trends show that more or less all the university libraries are provided with the basic equipment required for library automation. However, these items are to be improved basing on the user needs of the each university libraries.

It is also observed that accessory devices such as CD Drives, CD Writer, Multimedia kits and Scanners availability are also showing the similar trend to that of computer equipment. But all 15-university libraries under study are having Internet connectivity. This trend shows a healthy sign of library automation and networking in university libraries.

Regarding availability of software packages, the study shows that only three packages namely SOUL, LIBSIS, DELPLUS are applied among the 15 university libraries under study. It is interesting to know that software packages such as BASIS PLUS, TECHLIS PLUS, MINISIS, and SUCHIIKA are not used in any of the library. It appears that SOUL package attained more popularity followed by LIBSIS packages in this study.

This study reveals that eight (8) out of fifteen (15) university libraries are performing all listed functions through SOUL package whereas the remaining seven (7) university libraries use the package for acquisition and cataloguing control. On the whole, it appears that all university libraries are having the necessary software packages to support major functions of the library electronically.

It is observed that availability of the Electronic Information Services in university libraries shows that 14 out of 15 university libraries (except SVU Library) have provided e-mail and internet services, whereas OPAC service is available in 12 out of 15 university libraries exception being OU, SVU and SKU libraries. Further, electronic newspaper service is available in six (6) university libraries namely OU, KU, SPMVV, ANGRAU and NTRHSU libraries.

On the whole, it is observed that SVU library is not having any of these listed services, whereas three (3) professional university libraries and UOH are having relatively more electronic information services than other libraries. These variations can be attributed mainly on the basis of availability of funds

It is found that 15 university libraries under study are offering INFLIBNET services. But COPSAT service is provided in AU, ANU, SPMVV libraries only, whereas OCLC service is provided in AU, ANU, JNTU, UOH libraries. Bibliographic services are provided in eight (8) university libraries namely OU, AU, ANU, SPMVV, SPSTU, NTRHSU, UOH and RSV libraries. Only 12 libraries except SVU, SKU and SPSTU are possessing CD-ROM Databases. All university libraries are providing Internet service.

It is observed that the user group comprises of faculty, research scholars and students in all university libraries. This user group is using the computers mainly for Internet search followed by e-mail and CD-ROM Database search whereas other services are utilized more in special category university libraries and UOH.

It is found that V-SAT facility is available in only 6 out of 15 university libraries namely AU, SKU, KU, ANU, UOH and RSV. Further, almost all libraries except SVUL are having LAN facility in their libraries. It is also found that only SKU library and UOH are having LAN facility for the whole university campus.

.It is found that the Internet services most frequently used are WWW, e-mail, and online search, FTP. Only the remaining services are used very rarely that too by few users in 3 university libraries. However, all universities are providing Internet services for their users. This study shows clear inadequacy of trained staff available for library automation and networking in the university libraries under study. It shows that AU is having three (3) Data Entry Operators, ANU is having one (1) Information Scientist and one (1) Documentation Officer, SPMVV one (1) Data Entry Operator, UOH is having one (1) Documentation Officer, one (1) Computer Programmer, RSV one (1) Information Scientist, JNTU one (1) Information Scientist and two (2) Data Entry Operators and ANGRAU is having one (1) System Analysist and one (1) Documentation Officer and six (6) Data Entry Operators. All university libraries do not have trained staff to look after library automation and networking.

Further, it is noticed that there are INFLIBNET trained professionals in twelve (12) university libraries under study. The training provided by

INFLIBNET is not enough to provide electronic information services required by the users in university libraries under study. This problem requires more attention by the administration of the university libraries.

It is noticed that majority of the library heads accept that automation and networking is required to obtain right information at the right time to the right reader and to improve library services as well as library status. But somehow they do not recognize that it develops resource sharing.

It is very interesting to know that the main problems identified in library automation are limited funds, lack of trained staff, and lack of interest among the readers. However, the most burning problem is lack of sufficient trainee staff to meet the new challenges of library automation and networking.

It is surprising to know that majority of university library heads do agree that users are interested to have a piece of information instead of a document and also to access information at anytime at any place any document through network. All university librarians have accepted that the faculty prepares to have LAN facility for browsing at their desk instead of university library. Almost all university libraries agree that users are more comfortable to locate their information requirements in automated library than a traditional library system.

Regarding the availability of electronic storage devices almost all university librarians are possessing CD-ROM Databases for the benefit of their users and also half of the university libraries are having DVD collection in their collection. The strength of this collection varies from library to library based on availability of funds.

It is surprising to know that no university library is offering electronic information services such as electronic bulletin board services (BBS), ISDN, Teleconferencing and Telex services to their users. However, e-newspaper services are available in six (6) university libraries and DTP is available in eight (8) university libraries. This observation reveals that university libraries may take some more years to provide more sophisticated IT information services to user services.

It reveals that only three (3) university libraries namely UOH, RSV, SPMVV have completed library automation while in the rest of the libraries. It is in-progress. But at the same time 80 per cent of the professionals prefer computerized systems and rest are in favor of both conventional and computerized systems. Almost all university libraries have undertaken both retrospective and prospective data conversion in their library as part of library automation.

It is noticed that 83 per cent of the professionals are having knowledge of the computers. Majority of the professionals who are trained in computer knowledge are working in professional university and traditional universities. According to the views of the professional staff the digital collection appears to be more in central universities than that of the other universities. So also, almost all university libraries are having Internet service in their libraries. Professional staff reveals that 74 per cent of them are having the ability to handle computer operation in their libraries especially all professional universities; central universities and special universities do possess skills to handle computer operations. Half of the professionals opined that their university libraries are subscribing for e-journals. Here also the professional universities, central universities stand first in this respect.

Majority of the professional staff working in university libraries are deriving satisfaction to work in IT environment. So also, they felt that computer applications could provide better library services to its users. Majority of the professionals are willing to work in IT environment. Finally, they are of the opinion that their readers are willing to undergo computer training to accept electronic library services. Therefore, this trend reveals healthy atmosphere towards library automation and networking in the university libraries.

.Majority of the library professionals opined that positive trend towards library automation they are of the opinion that automation provides tight information to the right reader at the right time. It also improves library services and the status of the library. It provides the communication facility and can get information pin-pointedly and exhaustively. This opinions supported by heads of the libraries.

The half of the users expressed that the libraries are computerized and electronic library services are available. This opinion supports the opinion expressed by heads of the libraries and the professional staff.

Regarding CD collection one-fourth ($1/4^{th}$) of the users community accepted the availability of CD collection in their libraries. This opinion also supports the opinion of the heads and professionals of the library. This opinion is collected only to users check the opinions expressed by university librarians and the professional staff. It is found that this opinion is tallied with each other. Hence, it is valid.

Regarding Internet services, e-journals services, LAN facilities, the readers opinion is also agreed with the opinion expressed by the university librarians and the professional staff. Hence, this aspects of the study also valid for evaluation.

Opinions regarding availability of electronic products the users opinion almost coincides with the opinion of the university librarians and valid for evaluation. This opinion is also collected to crosscheck the opinions of the respondents covered under study.

Suggestions

Since university libraries are shifted from paper media to electronic media, it demands attention to build an electronic document library. Therefore, the advent prospect of radical changes in the means of library services. Further, library materials in the electronic media. Therefore, the university libraries should adapt themselves electronic habits, making increasing use of the new information technology of computers, electronic storage and telecommunications. In addition to the old information technology of pen, paper, photocopier, and the new electronic tools should provide powerful options for working with data text and images. This is to be kept in mind by the librarians/heads of the library for diffusion of electronic information.

The university libraries should develop user policies for network procedures or regulations relating to electronic resources and services and guidelines for implementation of these policies and procedures. For effective access library materials, services and facilities, these policies and procedures should be approved by the syndicate / executive council / management. For that, users access should not be changed without due process including, but not limited to, formal notice and the means of appeal. This will ensure better use of electronic documents in the library.

The university librarians should watch that electronic information services, and networks provided directly or indirectly by the library and should equally provide equitable access to all library users.

The library's first significant task is from the stand point of the user is to help with the identification and location of needed material. There are various ways in which instructions in using libraries can be given. At the simplest level there is the familiar "Orientation" technique, the main purpose of which is to familiarize students with the layout of the library building and the location of various resources and services. Therefore, are university librarians should introduce user orientation programmes for the benefit of its users.

The university authority should organize in service training programs for the staff members in computer applications and other technologies. This type of training will support to the professional staff for optimum utilization of electronic information sources.

Local Area Network with strong infrastructure facilities of Internet connectivity will boost the better use of Internet services. A strong feasible network with sufficient number of nodes to access Internet facilities with better bandwidth shall improve the use of Internet. This forms part and parcel of utilization of electronic information sources.

University librarians as an information specialists need to keep track of new websites of internet to users by identifying and notifying free e-journals, subject gateways important websites for reference works, search engines etc. This will enhance the utility of electronic information by users.

The university librarians are required to develop content management system, which supports "Database administration." Actually content management is used to describe a wide range of activities from the start-to-finish authorship of a printed work or online resource to digitization or reformatting an existing and putting on the web.

The library websites are ranging from static to dynamic websites. They contain subject's gateways. They bring external content to the intranet desktop such as databases, e-journals, e-books, software, and free content. Libraries are called upon to participate handle internal content management. Further, content management of high volume database requires intelligent information retrieval techniques, tools and algorithms for maintaining consistency and usability of the database as presented to the users. The content management techniques adopted for building up expert's database uses the principles of content metadata, user profiling, controlled access and rich search techniques. Content management should provide personalized services to its users.

Proliferation of information and its embodiment in different forms and formats, the increased demand for information by the users as per their demand through varied types of services have necessitated each library to go beyond its four walls to cater the endless needs. This has pressed the librarians, especially university libraries, to undertake consortium measures to maintain collection development, preservation, retrieval of information, and information services to the users. As such the university libraries should utilize the services of (a) UGC-Infonet, (b) INDEST (Indian National Digital Library Science Consortium), and (c) CSIR (Council of Scientific and Industrial Research) Consortium, for maximum utilization of electronic information available in e-journals, e-resources.

The university librarians should also introduce electronic documentary service for achieving better utilization of electronic information.

Electronic document delivery service is based on information technologies. In this system document delivery services have been transformed altogether into new forms of either supplying documents or transmitting information by electronic methods. This system has a wide variety of options which include receiving, editing, transmitting, sorting, filling and retrieving the sorted information as and when needed by the users. On the non-availability of required materials / document in the information centre/library, the system may try to obtain it from other information centre or document supply centres. An electronic document delivery system can provide immediate access to the required information to the user provided that the system is connected to the document supply centre and the required information is stored in electronic media such as magnetic tape, video tape, video disc and CD-ROM, etc. This delivery system eliminates inordinate delays in the supply of the documents by conventional means. The various methods electronic documents delivery systems are (1) e-mail, (2) electronic ordering, (3) voice-mail, (4) tele-fax, (5) teletext, (6) videotext, (7) bulletin board service, (8) teletex, (9) on-line technology.

E-Learning: University libraries should also initiate to establish e-learning centers within the library premises. Today e-literacy is becoming a real alternative to traditional classroom teaching. It offers students and researchers, access to offset courses, workshops, and research. E learning is becoming an increasingly important approach to user education. Information literacy and also staff development in every aspect of knowledge and the worldwide involvement of LIS professionals is day-by-day increasingly in e-learning and teaching from designing and developing materials and programmers to individual and group learning using virtual learning tools and technologies. The network technology such as Internet, intranet, and World Wide Web has drastically changed the entire work culture of LIS activities including teaching and learning. As these technologies enable people access seamless information, communicate with each other across the terrestrial boundaries from any corner at any time. E learning offers a great potential for sharing for high quality learning resources, exchanging information and working in learning groups. E learning also has a great impact on individuals as well as LIS activities and services. This is because of the increased use of information and communication technologies (ICT) and web-based learning technologies, which create opportunities for the provision of new services and resources to customers.

Search Engines: The phenomenal growth of the Internet in the last few years has changed the face of information disseminations and retrieval all over the world. Search engines are powerful resources on the internet

that provide a tool to locate information and websites. They use databases to store web addresses (URL) web page descriptions and key words. There are several thousands of search engines and cybermalls available on the Internet worldwide. As the web grows, and databases searched by the major web search engines increase in size, the power to seek, index, and retrieve information must grow along with the information professional's knowledge of how to extensively search the web. There are a large number of different search engines on the Internet, and one needs to know what they do, how they do it and which is the best for the purpose. There are essentially three types of search engine. Each of these work very differently, and one needs to be aware of when it is the best to use one, and when it is the best to use another.

* Free text search engines
* Index search engines
* Multi-search engines

The rapid proliferation and development of web search systems over the past years made necessary for the LIS professional to know the advance features and professionals searches in the internet. It is always better to plan a search strategy before one plunges into action.

Bibliographic Instructions: University libraries should introduce bibliographic instruction programs for utilizing electronic information more effectively. This should include nature and types of information sources, organization and information in information sources and the usefulness of each type of sources. The types of information tools and their utility such as guides, catalogues, documentation lists require knowledge about the utility of CAS and SDI services. The nature and the type of the electronic journals, the retrieval of the information through the electronic and the optical storage devices such as CD-ROM's etc., on-line searching of local database / remote database, using of e-mail and internet service is also required.

Developing Technology Culture: Use of information and communication technology is a basic foundation for optimization of Internet resources. Hence, it is recommended to incorporate technology-based education for class related research to familiarize with the significance of technology and overcome inhibitions. Academic and research community should be made to use computers as a means to enhance efficiency to imbibe technology culture irrespective of age. More emphasis should be laid on improving librarian's attitudes towards technology. Librarian's knowledge in IT, experience in computer use, level of awareness of technologies, regency in IT training are key factors in servicing the academic community. Library administrators need to

address these factors while planning and implementing any IT-based project in the libraries.

Data Conversion: The university libraries which are lacking behind in data conversion both retrospective, and prospective must complete as early as possible so as to join in the mainstream on INFLIBNET programme for electronic information resource sharing so as to provide better information services to user community. Further, it is also suggested that all university libraries should adopt SOUL software package to maintain uniformity for data processing and retrieval in university libraries in India.

16.Information retrieval skills training to be embedded in the curriculum, undertaken at an appropriate time and supported by academic staff. Academic staff must be aware of the services, which are most beneficial to their course and therefore their students.

SUGGESTIONS FOR FUTURE RESEARCH

There is a need to conduct in-depth studies regarding Internet applications and other information services in university libraries, besides Internet user research in different areas like engineering, medical sciences, academic and research environment etc. Insights into these users will advance the knowledge base about online surveys and thereby help to empirically assess the potential of the internet to supplement traditional means of conducting research by ensuring an adequate response rate and response quality. The major thrust areas at research on Internet and other electronic information services.

- Internet information services and products
- Filtering of information
- Search engines, development and comparison
- Retrieval and evaluation of information
- Bibliographical control on the internet
- Reliability of information on the net
- User interfaces
- User studies to explore the internet treasure
- Organizations of electronic information on the web
- Intelligent search agents
- Web vs. traditional information resources
- Characteristics of internet and electronic documents
- TQM model for internet services
- Designing machine readable catalogues and content designators on the lines of MARC and
- Internet application in library and information centers

State the Value of the Paper and For Whom

The study mainly concerned about the university libraries. The university libraries diffusion the electronic information in different electronic formats. How far the different kinds of users (i.e. students, Research Scholars, Faculty Members, and other users) utilizing these kinds of disseminated electronic information in university libraries. This study mainly intended is for all university library Librarians/Library In charges, Library staff, and for the different kinds of users in university libraries.

What Changes to Practice Might Be Made as a Result of this Research/Paper

This is one of the consequence is identified that Majority of the library staff are willing to adopt IT to diffuse the electronic information in their university libraries. This is another consequence is identified in this research is helping the faculty members and readers by providing Electronic information services to achieve the highest academic honor and a lifetime of good readers. This is one of the outcome in this research is mainly to what extent the electronic information diffusion and utilization by a potential use, Non-use, and non-availability of IT Products/services in different kinds of university libraries. University librarians as an information specialists need to keep track of new websites of internet to users by identifying and notifying free e-journals, subject gateways important websites for reference works, search engines etc. for better utilization of electronic information by the users. This will definitely help the university and other type libraries to provide wide information and to manage on modern lines keeping face with new technological challenges.

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Management of Library Resources and Services in the Knowledge Society: A Case Study of Dhanvantri Library, University of Jammu.

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ABSTRACT

Due to the growth of IT, the management of knowledge becomes an important note for the professionals of the 21st century. Library and Information centers are being digitalized in terms of collection, organization, assimilation and dissemination of knowledge to satisfy the diverse needs of the users. Library professionals are facing a number of challenges in their daily routine work-up and in order to overcome these challenges of the 21st century, they need to develop more skills and competency so that they can sustain in this rapidly changing society. Again knowledge management is an art and for this purpose expert, talented and competent workers are required. Dhanvantri Library is the main hub of University of Jammu and it is holding a good collection of resources as well as a good number of users. The paper discusses in detail how the knowledge resources are managed and services are provided to the users of Dhanvantri Library.

Keywords: Knowledge management, Information resources, Information providers, Information access, Information technology, Library Automation

Introduction

The paper has made an effort to define the role of educational libraries in managing the knowledge in the knowledge society by taking Dhanvantri Library as an example. The technology is changing very fast and it lays a great impact on the way of working of libraries. Now, each user want the information in least possible time and how libraries are trying to satisfy them is an important note. An oral interview with the incharge of each section has helped to club the information and by means of this paper an effort has been made to put the status of Dhanvantri Library in front of other professionals of the stream so that by their suggestions working of the library can be improved and it become a role model for other libraries.

The present era is based on knowledge economy and the major argots of 21st century are information revolution and knowledge management. Knowledge is the major thrust of the society as every one wants to know what is happening around him. In addition to this, IT has removed the geographic barriers and has pushed the society towards information intensive and networked society, thus making the role of libraries very important in the frequently changing society. This in turn creates a huge ocean of knowledge, which should be managed properly as our earth has 75% water and only 25% land area and if this water is not properly managed it can drown the land area. Similarly, the huge ocean of knowledge if not properly managed it makes the man hellpless for every task and he will be not in a position to face the challenges of 21st century. We know, knowledge is the need of the society and thus, it becomes the basic asset of any institution.

Data processed **Information** processed **Knowledge**

When raw data is processed it provides Information and when Information is processed it becomes the Knowledge. Thus, knowledge differs from information as it is derived from the information. Out of various forms of knowledge, information providers use the explicit form of knowledge. Information centers are managing the knowledge so that it can fulfill the diverse demands of users in time. Knowledge management helps the libraries and other information centers:

1 To improve the productivity
2 To share knowledge
3 To enhance profitability of the nation.

What is Knowledge management and why it is needed?

Till now there is no universally accepted definition of Knowledge Management. Views of some of the knowledge workers are as:

"Knowledge management involves the identification and the analysis of available and the required knowledge and the subsequent planning and control of actions to develop knowledge assets so as to fulfill organizational objectives." As per the Seonghee[2] "Knowledge management involves efficiently connecting those who know with those who need to know and converting personal knowledge into organizational knowledge. As per the Newman[2] "Knowledge management is a discipline that promotes an integrated approach to creation, capture, organization and access and the use of an organization's intellectual capital on customers, markets, product services and internal processes." As per Marc Auckland[1]

In short, it can be said that knowledge management is the process of capture, refinement, aggregation and sharing of data and information between employees, departments, subsidiaries and partner organization to achieve a position of knowledge- based competitive advantage.
Thus, [3]the essence of knowledge management is:

1 Connecting people with people.
2 Connecting people with information.
3 Enabling conversion of information to knowledge.
4 Encouraging innovation and creating through the nurturing of a knowledge environment.

Management of knowledge is needed in this age because the information resources is tremendously changing and becoming more and more electronic with the advent of IT. The various resources from which information can be accessed are as:

CD-ROM, DVD-ROM, e-books, e-journals, e-magazines, electronic reserves, cassette tapes, VHS video tapes, microfiche, microfilm, e-reports, e-references sources, e-databases, e-content pages, e-learning material and so on in addition to the old traditional resources like – books, newspaper, journals etc.

Knowledge Society

Time has changed each and everything whether it is our power of thinking, our work culture, our organization or our society. Initially, we lived in an agricultural society and by passing through various phases; we have now reached in the knowledge society. As the need for information drives the individual, so also it drives societies. Similarly, the brain deteriorates when deprived of information, so a society, if it is to avoid decay, must make constant provision for the acquisition and assimilation of new information, which can be achieved by various means of communication. Library and Information centers play a great role in this knowledge based society as they stands for the accumulated power over the works of the mind and our type of society depends on the works of the mind as the mammal depends on the heart-beat. Generation of the knowledge society is becoming more aware of the new technologies and wants the accurate piece of information in the least possible time. In order to pacify and satisfy the needs of this generation, libraries have to manage the knowledge resources well in place and order.

Dhanvantri Library

From September 5, 1969 University of Jammu, Jammu started functioning as an independent institution and in August, 1980, the library was shifted to New University Campus at Bahu road from Old

University Campus at Canal road. Till 2002 the library of University of Jammu, Jammu was known as central library as it is located in the center of the university but in 2002 it was renamed as Dhanvantri Library after the name of a freedom fighter. It is a three-storey building, having "I" shaped structure and in each floor reading facility is available. Various librarians from time to time managed the working of library. The details of the librarians, presently termed as "Information Managers", of Dhanvantri Library are tabulated as under:

S.No.	NAME	PERIOD	DESIGNATION	FORMERLY
1.	Prof. Y. R. Malhotra	1981 to 01.04.83	Honorary Librarian	Head, P. G. Department of Biosciences.
2.	Prof. J. S. Sharma	02.04.83 to 30.06.87	Professor-cum-Head-cum-Librarian	Professor-cum-Head-cum-Librarian, Punjab University, Chandigarh
3.	Sh. C. R. Sharma	01.07.87 to 31.05.97	Librarian	Deputy Librarian
4.	Prof. I. V. Malhan	01.06.97 to 24.01.04	Professor-cum-Head-cum-Librarian	Prof. Department of Library Science
5.	Prof. Shashi Kant	25.01.04 to 31.03.05	I/C Librarian	Prof. Department of Botany
6.	Prof. V. K. Gupta	01.04.05 to 31.03.07	I/C Librarian	Prof. Department of Physics
7.	Prof. K. K. Sharma	01.04.07 till now	I/C Librarian	Prof. Department of Zoology

The main work of library automation was initiated under the dynamic leadership of Prof. I. V. Malhan and it took a new shape under the guidance of Prof. Shashi Kant and most of the work was completed in his tenure. The work is still going on, as the collection of each year has to be automated. It has various sections located in different floors of the library. Location of the sections is as under:

S.No.	Location	Sections
1.	Ground floor	Acquisition section, Technical section, Circulation section, Periodical section, Browsing room, Property counter, International Resource Cell, Reprography section
2.	First floor	Stack-I, Text book section, Jammu and Kashmir section, Automation section, Administrative and maintenance section
3.	Second floor	Research and Documentation section, Reference section, Internet section, INFLIBNET Laboratory
4.	Third floor	Stack-II, EDUSAT Laboratory, Video conferencing room

Library automation helps the library to fulfill the needs of users in time and to provide other services also on time. Automation is also helping

the library to club its database with other libraries using similar or compatible software. Software used for automation purpose is LIBSYS

Management of Resources in Various sections:
The library has a great database comprising of 91,000 documents break wise:

1	Stack-I	--------	35,500
2	Stack-II	--------	30,000
3	J&K Section	--------	05,500
4	Text book Section	--------	09,000
5	Documentation Section	--------	08,500
6	Reference Section	--------	02,500
		Total =	91,000

As the library has a good collection it becomes necessary for it to manage the resources properly. A good asset is the positive point of a library as it in turn shows that the library has a good number of users. The total number of the library members is around 4000 which include PG students of different departments, scholars, faculty members, non teaching staff and the private members and on an average 500 users are visiting the library per day to fulfill their needs as per their requirements. In order to enhance the collection library is getting around Rs. 20 lakhs of grant per annum. To properly manage the resources it is distributed among different sections so as to help the members of the library and proper management helps easy access of information. In order to properly manage the resources and services of Dhanvantri Library the Librarian/Information manager has decentralized the work among the sub-ordinates as:

Each Deputy Librarian is assisted by Assistant Librarians and each Assistant Librarian is assisted by Professionals and Semi-Professional Assistants. The management at different sections is explained as:

1. Stack area: In this area the documents related to all fields of subject are managed according to class number and then according to book number in different shelves and students get issued a copy of document as per their need. Due to the huge collection of stack it is bifurcated into two parts so that the documents are managed properly. In the stack area – 1, the documents related to subjects: Pure sciences, Arts, Technology, General geography and history, Generalities, Philosophy, Religion, Social sciences are arranged where as stack area – 2, has the documents related to subjects: Law, Management, Language and Literature.
2. Textbook section: In this section the textbooks related to all subjects are managed in different shelves of a particular subject as per the

class number and book number. The main purpose of this section is to maintain the textbooks only which is frequently required by the users.

3. Jammu and Kashmir Section: It is a special and specific section of the library as it is holding the documents pertaining to the Jammu and Kashmir state only i.e its political, geographical and historical aspects. It has a rare collection of documents that satisfy the needs of the readers studying about the J&K state in particular. This section is a fruitful for the scholars also. Again the documents are managed as per the class number and book number in different shelves.
4. Reference section: It holds a good collection of reference books like directory, dictionary, year-book, census, encyclopedia, who's who and so on and are managed properly on the shelves which helps the readers to locate it easily.
5. Research and Documentation section: This section has all the thesis and dissertations approved for Masters degree, M.Phil. and Ph.D. by the university in various disciplines. In addition to this it holds the collection of 20 national and local newspapers from the back volume of 1920. As it contains the documents related to research work only that's why the section is referred as Research section.
6. Periodical section: Library is prescribing more than 300 national and international journals as per the demands of the various educational departments and this section is acquiring the periodicals for the departments and guiding the research scholars as well as teaching faculty how to access the e-journals.

In each section there is a space for reading and consultation as the books are issued only from stack area. In addition to these a separate reading hall is available for the members at each floor. In the 1st floor reading hall is specified for the scholars only and in 2nd and 3rd floor reading hall is provided for all members.

International Resource Cell

This cell was established in 2005 with the objective to share knowledge, learning and experience of international issues and provide a forum to access, discuss and disseminate international resources. It has a stock of 500 books, 20 journals and 50 DVDs on international issues. More than 250 students are the member of this cell. Most of the resource material is available for reference purpose only except some which is provided on loan for one week's time only. The activities performed by the IRC include videoconferences, film screenings, competitions, seminars, panel discussions, book reviews and visits by experts. It remains open for the users for six days in a week from 10.00AM to 5.00PM.

Services Provided by the Library

Dhanvantri Library has a huge number of members and remains open for 24 hours. The library also provides Internet facility to the users from 9.00am to 8.00pm. The working days of the library are from Monday to Friday from 9.30am to 5.00pm. It is an open access library.

1. Access of library collection: As the library has automated its collection, it is easy for the users to locate the document of his/her need easily. An independent OPAC system is located in the circulation section for the users and readers that help them for searching the database easily. It not only helps in accessing the library collection but also of the documents located in different departments, as the Dhanvantri Library also maintains the retrospective database of last ten financial years of the departments. INFLIBNET section has a small collection of e-documents like: CD-ROMs, which can be easily accessed by the CD server, installed in the section.

2. Access of e-journal and e-databases: Dhanvantri library has an online access to the leading e-journals through the J-Gate facility of the informatics India Ltd., Bangalore (a leading journal subscription company of India). This helps the scholars a lot to get the information of the articles related to their work. It also has an access to Thomson database known as Thomson Gale, which provides information of millions of articles, reference books and other documents. With this advancement readers of the library are benefited a lot.

3. Internet facility: Library has its own Internet lab. which have around dozen terminals .Internet is provided through the V-SAT technology . It is accessed by the users in the working days only and is free of cost for scholars and staff of the University.

4. Resource sharing: Resource sharing is one of the major services of any library. It not only means the sharing of raw resources like man, material and equipment but also of the processed resources like views, thinking, activities and so on. Dhanvantri Library is the member of DELNET and the members of the library can access its database and have a copy of that as per instructions and rules. It is also providing assistance to others libraries of the state for the work of automation and other services. With the connectivity of UGC INFONET users get benefit by accessing the electronic resources around the clock.

5. EDUSAT Laboratory: It is basically an educational satellite laboratory in which by means of satellite distance learning courses can be held. Presently in this laboratory a course of two and a half month is going on "Remote sensing and GIS" by "Indian Institute of

Remote Sensing" (IIRS), Dehradun. This helps the users of the library to have knowledge of a subject without going to the respective centers.

6. Video conferencing room: Again in this section, the students are getting benefit by interacting with others personnel sitting far apart from them. The section holds "Global understanding" course and a number of students exchange their views on world culture through video conferencing. Around five different international universities are the part of this course.

Suggestions

During the course study of library few observations and suggestions were pointed out as:

1. Working of the library is best among the Jammu Division and it is role model for other libraries of the division but where it stands in national and international level is still a question mark. This paper put the status of DL in front of all and the comparison with other libraries can help the Dhanvantri library to improve its working.

2. Till now library does not have its full-fledged librarian, which hinders the progress of the library. All the librarians have tried their level best and still trying but the professional librarian can give a better shape to this developing library. Again by means of this paper a request is send to all to come forward to join this institute for its betterment.

3. The management of resources in stack is maintained as per the area but the resources of Stack-1 should be again bifurcated to separate the sciences and social sciences subjects so the readers get a look at the material easily and it also helps in the management of resources in future.

4. The library has completed the task of automation and now, it has to start the project of Digital Library. With the digitization of resources the rare collection of the library easily accessible by the readers on-line as well as off-line.

5. The original picture of library is depicted in the paper without any alternation. This shows loyalty to the institution and profession. All the professionals should be loyal to their institute and are true to their heart that helps the institution in its betterment.

Conclusion

It can be concluded that the Dhanvantri Library is handling and managing the resources in a very efficient manner. The introduction of IT, automation, different refresher/orientation courses and funds from different funding agencies have increased the working potential of the

library and it has become one of the best library of the state in terms of providing services to the users. The task of digitization, has not yet been initiated which should be started as early as possible this will further enhance the working potential of the library.

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Preservation and Conservation of Library Collections: The Need of the Hour in Modern Era

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ABSTRACT

This paper explains the Preservation and Conservation aspects of collections with a view on need of its application for better Library & Information Services. In modern era, all kind of human activity is organized through institution. Library & Information Center is one of the institutions whose main activity is to collect, stock, process, organize, disseminate and distribute information/knowledge recorded in documents. Since knowledge and information are vital for all round human development. So there is explosion of information. The objective of this paper is why we preserve the document/information and for whom. Today's Information is tomorrow's waste and as per information data, the information is published more day by day. Hence the preservation and conservation of information sources are vital. The information revolution of the 16th century depended much on the invention of paper as a recording medium as it die on the invention of the printing press. Library preservation practice has come a very long way in a short time in the developed countries. This paper draws attention to the fact that one of the very important aspects of a librarian's obligation to the society is the preservation and conservation of collection of reading materials in his/her custody in a good healthy and usable condition. It also discusses about "whats", "hows" and "whys" on the preservation and conservation. It also gives a general outline of the various preservation and conservation methods and techniques. It depicts meaning of the terms, objective of the study and concept of the study and causes towards deterioration of materials and strategies for preservation of materials i.e. book, non-books, microforms and problems of preservation. It describes about the nature of the library materials, physical characteristics i.e. biological factor and chemical factors etc. It also gives emphasis on preservation management,. administration, training, policy and preservation environment.

In the conclusion, it discusses about the future aspect of planning for preservation and conservation in Library & Information Center.

Keywords: Preservation, Conservation, Library, Collection.

Introduction

Libraries play a critical role in organizing, conserving and disseminating the cultural, historical and socio-economic resources of the society. The information resources are the central factor in the library and information services and are vital asset for the libraries. Hence the preservation and conservation of these library collections becomes essential. In modern era the library collection basically consists of:

Collection made of 'inorganic substance' such as, stone, burnt clay, metal plates etc.
Collection made of 'organic substance', such as palm-leaf, birch-bark, wood, cotton, animal skins, papyrus, silk and papers etc.
Collection created by modern technology, such as, cellulose materials like films, vinyl recording, polythene cassettes, digital recording on tapes, CDs and floppies etc.

During the process of preservation and conservation of these collections the factors of the media should be kept in mind. In the light of rapid technological developments in creation, storage and dissemination of information in modern age, it is very necessary that preservation and conservation specialists must consider the philosophy & principles, which have been guiding this field till now. With electronic formats of the collection on the increase, special emphasis should be given to re-evaluate the preservation and conservation policy especially in the modern day context of electronic forms of preservation and conservation.

To guide the professionals working in National Institutions such as the National Library, National Archives etc., which have the traditional responsibility to preserve and conserve the Nation's documentary heritage, a specialized training is needed.

Objectives of the Study

The current study has the following objectives:

i) To understand the concept of preservation and conservation in context of libraries;
ii) To ascertain the need for preservation and conservation for the library collections;

iii) To present the methods and techniques to preserve and conserve the library collections;
iv) To study the causes for degradation/damage of the library materials;
v) To depict the nature of the library collections.

Preservation & Conservation: Concept

In general terminology, the terms 'preservation' and 'conservation' are often understood as synonym which mean: the process of keeping an object safe from harm or loss, damage, decay or degradation, deterioration and maintaining it in a reasonably sound condition for present and future purpose. But technically speaking these two words have bit different meaning. Though they are interrelated and overlapping connotations. 'Conservation" has three aspects: [1]

vi) Examination: To determine the nature/properties of materials and causes of deterioration and alteration.
vii) Preservation: Adoption of appropriate prophylactic and prospective measures to maintain the specimen in as good a condition as possible, and to prolong its life to whatever extent possible.
viii) Restoration: Appropriate remedial treatment of an already affected specimen.

Thus, 'preservation' is the part of 'conservation'. Preservation and Conservation together constitute an obligation, to be shared by the Museologist and the Archaeologist along with the Archivist and the Librarian.

In modern age, the scope of the library materials has increased many fold, hence it is the moral responsibility of the librarians to think about preservation and conservation of the library collections.

The collection which are being developed and acquired in our libraries *today*, will turn as collections of the *past* achievements *tomorrow*. So it is the responsibility of today's librarians to pay prime attention to preservation and conservation of these materials as far as possible.

Types of Library Materials to be Preserved & Conserved

When we talk about the preservation and conservation of collections in a library, it may include a manuscript or a printed book or items in a non-print form.

Palm-Leaf and Birch-Bark Manuscripts: Birch-bark sheets generally consist of a number of layers collected from the inner side

of the bark of the Birch tree of the Himalayan origin. These are thin and delicate sheets containing some natural preservative chemicals (salt of salicylic acid).
Palm-leaf is of two types: Tala (Palmyra) and Sritala (Talipot). Leaves of tala are tick and hard difficult to handle. The leaves of sritala are thin, flexible and can be handled easily.

Birch-bark and palm-leaf are natural organic materials, which have inherent mechanism to withstand normal environmental effects for many years, even many centuries, if stored properly. Over a long period of time, layers of birch-bark tend to separate and the edges of birch-bark and palm-leaf have tendency of curling up if exposed to prolonged dryness. Prolonged dampness also is responsible for their gradual degradation.

The hand written texts on palm-leaf and birch-bark usually used black carbon ink or pigment which have the quality for retaining legibility for centuries, if stored away from acidic contamination.

Paper

"True paper was first of all invented by the Chinese eunuch T'Sai Lum in A.D.105."[2]. Today the major component of the library materials consists of paper based products such as manuscripts, books, periodicals, newspapers etc. paper is composed of organic fibers which are chemically processed. These fibers lose their strength and deteriorate gradually through even the normal ageing process. "Much of our existing stack of information and other aspects of cultural heritage is in the form of print on paper which needs care." 3 Before mid-nineteenth century, paper was handmade and alkaline chemicals were used for processing. This handmade paper was sustaining strong and long because of the calamity and natural strength of long cotton fibers, which were commonly used. After mid-nineteenth century, the time arrived for machine made variety of papers. Mechanical wood pulp and acidic (in stead of alkaline) chemicals are used for processing. Due to its acidic content, the paper loses flexibility and so splits and turns yellow and brittle in a lesser time as compared to handmade paper. It is this acidic content again, which slowly affects the legibility of the image also.

Binding

Materials used for binding such as wooden boards wrapped in cloth for palm-leaf and birch-bark manuscripts, (traditional method), straw board and leather, rexine, thread and adhesive used for books – are all organic materials sensitive to ageing and deterioration. In library binding it is the leather that gives to it the major strength and

durability. Leather is the middle layer of the animal skin, which is of fibrous structure of collagen. This skin is converted into leather by the tanning process. The binding should not be either too tight or too loose.

Other Product

The library collection in the form of film, film strip, microfilm, microfiche, CDs, Floppy etc. is growing in many of modern libraries. Film materials produced about half a century ago had cellulose nitrate as the ingredient. In the late 1930's cellulose acetate film replaced nitrate film, which also deteriorate, shrink and gradually get separated from the emulsion coating on the surface on which the image is printed. Polyester films, now available since 1960's seem to have better prospect for longevity. By the mid 1980s Compact Disks (CDs) with digitally encoded sound was introduced in the commercial market. CDs played back by a laser are better than earlier disks. The videodisk introduced in the early 1980s is a technology for storing images or machine-readable information on disks. The information/image digitally encoded on a disk is read with a laser scanner and displayed on a conventional display monitor. At present there are three types of optical disks: (i) Write Once Read Many (WORM), (ii) Rewritable and (iii) Read Only Memory (CD-ROM).

Hazards to Library Materials

The library materials consist of both paper-based products and non-paper based products. There are following factors responsible for hazards to the library collections:

Environmental Factors

The Environmental Factors are also termed the physical factors. "The physical factors are Heat, Humidity, Light and Mishandling. While light heat, humidity bring about photochemical change or exidative changed in paper, mishandling or neglect may cause mechanical damage".4 some more factors are water, dust/dirt, air-pollution etc.

High heat/Temperature along with high humidity facilitates the acidic conditions, which contribute to the degradation and deterioration of paper. Heat adversely has impact on the organic materials such as fibers of cloth, paper and other allied materials.
Temperature can be measured through a thermometer. The conversion formula from centigrade into Fahrenheit is as follows:

$(F-32)/9 = C/5$ i.e. $C = 5(F-32)/9$

where C – Temperature in centigrade scale
F - Temperature in Fahrenheit scale

High relative humidity (in excess of 68%) is responsible for the swelling and warping of paper fibers and hastening acid deterioration. High humidity also causes fungus attack. Low humidity is harmful for paper causing it to dry out and making brittle. The relative humidity can be measured as:

$$\text{Relative Humidity (RH)} = \frac{\text{Amount of water vapour present in air at a given temperature}}{\text{Amount of water vapour required to saturate the same volume of air at the same temperature}}$$

A temperature range $20^0c - 25^0c$ and RH of 55% are ideal for the preservation of paper-based materials.

The ultra-violet rays of light coming directly from the sun are dangerous to library materials. The cellulose fibers of paper lose their mechanical strength making it brittle and yellowish under direct sunrays.

Water is also harmful for library collections which may come to play the negative role due to human negligence, accidents or a natural calamity etc. smoke is another destructive factor to the library materials being responsible particular for chemical degradation and deterioration. Dust and dirt are factors of both chemical and physical deterioration. Dust causes atmospheric acid reaction by attracting moisture to cause chemical degradation. Dust and moisture together loosen the cellulose fibers of paper etc. Dust and dirt discolour the pages of books and help to grow microorganism, which is harmful for library materials. The Audio-visual materials and CDs etc. are also being adversely affected and damaged by dust/dirt. The air pollution has become more or less a permanent affair in the modern age specially for urbanization, industrialization, deforestation etc. the impurities of air and sources of air pollution causing deterioration to library materials are basically sulphur dioxide, hydrogen sulphide, ammonia, nitrogen oxide, carbon dioxide, ozone, aerosols etc.

Biological Factors

Biological Factors include microorganisms, insects and rodents and human beings etc. micro-organisms such as Fungi or moulds grow in paper, textiles and leather in the environment of high relative humidity,(above 65%) and high temperature(in the range of 27^0 –

35^{0}c). Besides fungi, bacteria also cause decomposition in cellulose of paper and-binding textiles.

Insects include silver Fish (lepisma Saccharina), Cockroach (Blatta-Orientalis), Book-Lice (Psocids), Termite (White Ant), Bookworm or Book Beetle (Coleoptera) etc. These insects are very harmful for paper-based materials. They make holes in the paper and start deteriorating it.

Rodents include Mice (Linnacus) and Rats (Rathus) etc. They find their way into buildings through dry drains and openings in doors and windows and start growing, eating and soiling anything made of paper, board, textiles, leather, glue, gelatin etc. man is also destroying the library materials through mishandling them.

Chemical Factors

Chemical Factors also cause degradation and deterioration of library materials. Paper is composed of cellulose fibers while cellulose in cotton rags is available in its pure form, in other materials it is admixed with lignin (group of carbohydrate), gum and resins. Presence of lignin with cellulose makes it prone to yellowing with light; while high content of resinous material also reduces mechanical strengthen. Cellulose fiber loses its tenacity and is damaged by acids. For good quality stable paper PH value (indicative of acidity or alkanity) not less than 5.5 is desirable.

Preservation Measures

There are various preservation measures to be adopted by the library authority for preservation and conservation of library materials.

Storage Environment

The selection of suitable storing place is vital for long-term preservation of library materials. The library stack area should have:

a) Protection against fire smoking, use of heaters and storage of inflammable materials in the storage area should be prohibited. Fire detection alarm system as also proper fire extinguishers should be provided there.

b) Sufficient ventilation for removal of stagnant air pocket, which comprised with high humidity, help grows of destructive microorganisms and pests etc.

c) Windows and doors in such a manner that these regulate sunlight and reduce the injurious effects of the outside climatic conditions.

d) Organized in the upper floors of the building because ground floor is not safe for preservation point of view, particularly in the rainy season.

e) Entry of the rodents like rats should be checked through proper arrangement in the building.

f) Protection from white-ant menace by digging a trench outside the foundation wall and filling it with chemicals like coal tar and creosote oil. In this regard for effective work, professional pest-control organization may be contacted.

g) Properly done-up floor and walls protecting from dust.

In this connection Indian Standard IS: 11460-1991 "Code of practice for fire safety of libraries and archives buildings" will be of great help.

De-Humidification

Humidity is a big problem for the safety of library materials. In the absence of air conditioning facility, suitable dehydrating agents like anhydrous calcium chloride and silica gel can be used to minimize the human condition and dampness, especially during the rainy season. Silica gel in requisite quantity (2-3 kgs for a room of 20-25 cu. Mts. Capacity) may be kept in small dishes and the dishes put in different areas in the room. After getting saturated with moisture the silica get should be replaced with fresh one commercial dehumidifiers can be used where the stack area is large.

Atmospheric Condition

Adverse environmental conditions such as frequent changes in temperature and relative humidity, damp and warm climate (a serious problem in tropical countries like India), atmospheric pollution (Oxides of Carbon, Sulphur and Nitrogen, Sulphurated hydrogen etc. Particularly serious in the urban areas), long exposure to strong light, especially sun light containing ultra-violet radiations, dust containing hard silicious and carbonaceous matter etc. should be avoided as far as possible for preservation of library materials.

The range of temperature between 22^0c to 25^0c and relative humidity between 45% - 55% are the most ideal condition for storage of library materials. This condition can be achieved by air conditioning.

Deacidification

Acidity is one of the main enemies of the library materials. The acidic content in paper at the manufacturing phase causes its degradation and deterioration at a fast pace. To neutralize this acid

content, different methods of deacidification should be utilized. Some of the common processes are vapour phase deacidification, Morpholine process (Barrow's), Wei T'O process, and Diethyl Zinc process. These processes are costly and hazardous in nature. Cheaper and less hazardous methods of deacidification involve the use of spray deacidification, ammonia gas deacidification and aqueous deacidification (solution of Calcium hydroxide and calcium bicarbonate) depending upon the nature of the writing ink used and the strength of the paper.

Pest Control Measures

The insect-repellent measure is to use naphthalene bricks at various locations in the stack area. A mixture of Para dichlorobenzene and creosote, put in dishes in the stack area also acts as a good insect repellent. 10% solution of thymol in methylated spirit sprayed in the stack area from time to time checks the growth of spores. If the collection is big it is better to contact the professional pest control organization for routine treatment for pest control measures.

Preservation of Special Types of Materials

Palm-Leaf and Birch-Bark

Manuscripts are traditionally stored through collecting several sheets together and tying them in between two thin wooden boards. The bundles are wrapped in pieces of cloth to prevent against dust and other surface feeders. But this method is not safe because there is possibility of uneven pressure on the sheets while trying each time. If the sheets have already turned brittle, there is the risk of cracking.

In modern days the best method is to keep the leaves loose in wooden or cardboard boxes with sufficient space and size (larger than that of leaves), so that the leaves can be taken out and replaced with ease.

(i) *Binding* of the paper and other materials should be done properly with great care. Indian standard IS:3050-1962: "Code of practice for reinforcing binding of library books and periodicals" is a good source of adequate guidance in this connection. A mixture of lanolin anhydrous, bees wax, cedar wood oil and benzene acts as a buffer solution for long-term preservation of leather bound books.

(ii) *Films:* The films should microfilms in cases and microfiches in separate envelope in dry,. Cool and pollution free environment. If the films are not used for long then they should be run at normal speed, at least once a year. Thus the possibility of layers of film sticking together is nullified.

Vigilance and Cleanliness

Vigilance and cleanliness is very important aspect for preservation of library materials. To keep regular vigilance in the collection area, particularly the dark corners, special attention should be given. This will reduce the possibility of the growth of harmful microorganisms and insect. A process of regular dusting should be maintained for utmost cleanliness and tidy conditions. A vacuum cleaner is the effective tool for this job.

Precautions have to be taken while handling the documents by staff as well as by users. The following "do nots" can really prolong the life of documents in order to preserve them.

Conservation

Conservation is mainly concerned with the remedial treatment of already damaged or affected materials. It is the direct method of treatment in which an object is physically or chemically changed for further use through cleaning, deacidifying, repairing, rebinding and reformatting etc.

Some of the basic principles behind the concept of conservation and preservation are as follows:[5]

(i) All heritage conservation work, whether it be of a building, monument or site should be based upon and preceded by sufficient historical research, site analysis and documentation to identify and safeguard fully the heritage values to be conserved.

(ii) The evolution of the structure(s) and the site should be respected. The contributions of all periods are important to the historical development and merit retention. Decisions about appropriate levels of intervention shall be based upon the heritage values of each contribution.

(iii) Long-term protection of the historic resource should be balanced with user requirements and future resource management goals should be identified prior to undertaking any work.

(iv) The approach to all heritage conservation projects should be one of minimal intervention to ensure the maximum preservation of the existing and authentic physical fabric and retention of the signs of age.

(v) Conjecture and the falsification of building elements should be avoided in all heritage conservative projects.

(vi) A well-defined maintenance plan should be clearly established in order to prepare for appropriate level of maintenance and care upon completion.

Conservation of the library materials include the ,following processes:

Treatment of Fragile Paper

If the paper based products have become fragile and its intrinsic value can be reinforced properly through following methods:

(a) Tissue repair: Full pasting of fine quality tissue(Japanese paper)

(b) Lamination: Cellulose acetate and tissue paper with solvent or heat method is used.

(c) Chiffon repair: Using fine transparent silk gauge.

Flattening of Creases and Wrinkles

Creases and wrinkles developed in the papers should be flattened, whenever found, before it is too late. The page to be flattened should be moistened with a wet sponge, and the damp page covered with blotting paper, or waxed paper on both sides (to avoid damp pages sticking together). After that it is pressed with a cold or if needed, a moderately heated iron.

Repair of Minor Tears

This can be done by pasting strips of their paper of high quality at the back of the torn portion. If there are writing on both sides, mending should be done by pasting strips of transparent, thin tissue paper on both sides of the tear. Use of high quality gum or glue should be used like freshly prepared binders' paste (wheat flour and 2-3% formalin) is good one. When transparent tissue paper is used, Dextrin paste or of sodium salt of Carboxyl-methyl cellulose (CMC) paste should be used to maintain legibility of the writings.

Removal of Stains

Stains can be removed through various methods as follows:[6]

Nature of Stain	Some of the Chemicals used
Stain caused by foxing, water and fingers	209 chlorine T per litre of distilled water for better result: Calcium hypochlorite
Grease, Tar and Fatty Substance	Carbon Tetrachloride
Oil and Wax	Hexane and Toluene
Insect Stain	Hydrogen peroxide mixed with an equal volume of alcohol

Tea & Coffee	2% solution of Potassium Perborate in water
Ink Stain	Citric acid in water

Before applying any of the above chemicals, it is necessary to try them on a very small portion of the affected area, if the experiment is suitable then go ahead.

Fumigation

The documents are infested by fungus, insects, bacteria and moulds etc. the infestation can be eliminated by fumigation process. The infested materials are separated from the collection and treated carefully and promptly. Before replacing the fumigated books on the shelves, the area where the infestation had occurred, should be disinfected thoroughly.

Fumigation with thymol removes milder or moulds while use of Para dichlorobenzene for fumigation kills silver fish, book worms and cockroaches etc. in place of Para dichlorobenzene, killoptera a mixture of ethylene dichloride and carbon tetrachroride (3.1) can also be used for fumigation. Other fumigation methods involve the use of vacuum fumigation process and a thermostatically controlled airtight vault, which can be used effectively and efficiently for sterilizing all types of biological infestation.

Digital Preservation/Conservation

Digital preservation means taking steps to ensure the longevity of the electronic document in terms of the following (mark et.al.: 1999)

- Data (this might be for text, image, video or audio stored in variety of formats and standards);
- Index to the data;
- Link to other data;
- Metadata;
- Software (relies upon hardware and operating system); and
- Storage medium, etc.

So in preservation of digital objects the measures taken into account includes: integrity of digital materials, the physical presence, the preservation format, the digital material's functionality, the location and reference of digital materials, the authenticity of that materials, the context of preserved material and the provenance.

Preservation of Information

The information content is more important than the material containing that information. If we preserve and conserve the

information that should be modern priority. For example if the ancient manuscripts are being destroyed then it is better to transform the information content of that manuscript in some other form say digital form. In the same line the information of the rare volumes of document can be conserved in other forms through transformation.

Conclusion

Modern age is the age of information. So the preservation and conservation of the information sources available in libraries is of prime importance. The library and information professionals should take the leading role in this regard as they are the real persons concerned with the library materials. It is their moral responsibility to take effective and active steps to preserve and conserve the library materials for future use by the coming generations.

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Preservation of Library Resources in Digital Era

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ABSTRACT

The paper attempts to highlight the various facets relating to preservation of library resources in the digital era such as digital collection and digital preservation, approaches and techniques of preservation and their requirements, process of preservation, key measures towards digital preservation in India and those prominent Indian institutes and libraries which are supports for implementation of the policy and digitization and preservation programmes. The paper also focuses on the challenges of digital preservation.

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Protecting Indian Libraries from Unethical Strategies of Journal Subscription Agents: Learning from Experiences

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ABSTRACT

Today a majority of the Indian libraries are subscribing to national and international journals costing from a few thousands to over eight crores using the services of one or a group of subscription agents. The main service provided by agents is to manage their clients' journal subscriptions from different publishers. These subscription agents manage all the stages of the subscription procedure from initial ordering right through to payment, claims and renewals of journals. Price should definitely not be the sole criterion for selecting a vendor. The vendor's past performance, credibility, experience and infrastructure and reputation in the market should be essential criteria, which cannot be overlooked at any cost. A tainted vendor with a bad reputation and poor service quality in one institution cannot be considered favorably at another without proper feedback from the affected institution and this should be a major criterion for selection. This article examines the pros and cons of the vendor selection procedure followed by a majority of DRDO libraries. The purpose and objectives of this study is to compile a check list of criteria to be followed to finalise the selection of a subscription agent for journals. The findings reveal that the quality of agents services get compromised/detoriotes as they offer high discount to win the tender. This article describes the procedure being followed by INMAS library for selection of journal subscription agents during last 10 years and highlights main experiences and lessons learnt thereof. This study recommends what could have done for improving the services of journal subscription agents in India.

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Resource Sharing in School Libraries

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ABSTRACT

The paper attempts to explain the concept of Resource Sharing, its growing importance in School Library and its changing role, the various initiatives taken for sharing the resources, various models at different levels and techniques used for resource sharing. It also lays stress on the new technology, which has changed the scenario of Resource Sharing. This paper aims at examining the use of information resource sharing in the area of school libraries in India. The work is based on two assumptions. First it is assumed that cooperative relationship improve library services and ultimately provide youth better access to information, knowledge and learning: Second, that cooperative relationships between the two separate institutional settings are essential ingredients in achieving educational reform leading to improved student learning. The paper will explore how school libraries are related to learning, including a brief look at the past, a more in depth examination of the present and recommendations for the future. The paper has been described into five sections: - First section discusses the concept and resource sharing in modern society. Second section identifies linkages between the information and communication. Technology, information resource sharing and the Networking Models. Third section explores the range of successful, cooperative relationships between school libraries. Fourth section deals with resource sharing in Govt school libraries, Fifth section examines the building up of Information sharing system in school libraries. It is our contention that this is an important component in the area of resource sharing. Sixth section presents the concluding observation.

Keywords: Resource sharing, Cooperation, School library

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Significance of Institutional Repositories in Scholarly Communication: Some Suggestions

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ABSTRACT

For universities/institutions, Institutional Repositories (IRs) are marketing tools, communicating capabilities and quality by showcasing faculty and research scholars, public service projects, and other activities and collections. Repositories in universities may include pre-prints and post-prints of journal articles, technical reports, research data, theses, dissertations, work in progress, important print and image collections, teaching and learning materials, and materials documenting the history of the institution. The article describing institutional repositories relate to universities, in which case any institution can adapt and adopt the concept.

Introduction

The institutional repositories (IRs) are a practical, cost-effective, and strategic means for institutions to build partnerships with their faculty to advance scholarly communication. Institutional repositories build on a growing grassroots faculty practice of posting research online, most often on personal web sites, but also on departmental sites or in disciplinary repositories. This demonstrates a desire for expanded exposure of, and access to, their work. In addition, digital publishing technologies, ever-expanding global networking, and enabling interoperability protocols and metadata standards are coalescing to provide practical technical solutions that can be implemented now. The convergence of these interrelated strands indicates that institutional repositories merit serious and immediate consideration from universities, academic institutions and their constituent faculty, librarians, and administrators.

Institutional Repositories (IR) provides services to faculty, researchers, and administrators who want to archive research, historic, and creative materials. The open access and open archives movement, the need for changes in scholarly communication to remove barriers to access, and the increasing awareness that universities and research institutions are losing valuable digital and print materials have begun driving the establishment of institutional repositories. Using open archive models (e.g., http://www.openarchives.org) established metadata standards, and digital rights management; important new information sources are seeing the light of day and becoming more generally available. Further, Institutions Repositories allow universities to offer secure digital hosting and archiving services combined with more effective web dissemination, while the universities can benefit from the enhanced visibility of their research outputs and the prestige that this confers. Funding bodies around the world have recognized the potential benefits of institutional repositories.

What Is An Institutional Repository?

"A university-based institutional repository is a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members. It is most essentially an organizational commitment to the stewardship of these digital materials, including long-term preservation where appropriate, as well as organization and access or distribution." [Clifford Lynch].

Institutional Repository: Some Definitions

Mark Ware (Ware, 2004) adds OAI-compliance in his IR definition:
"An institutional repository (IR) is defined to be a web-based database (repository) of scholarly material which is institutionally defined (as opposed to a subject based repository); cumulative and perpetual (a collection of record); open and interoperable (e.g. using OAI-compliant software); and thus collects, stores and disseminates (is part of the process of scholarly communication). In addition, most would include long-term preservation of digital materials as a key function of IRs."
Raym Crow's definition discusses the potential of IRs to change the scholarly communication system (Crow, 2002):

"Institutional repositories mean digital collections capturing and preserving the intellectual output of a single or multi-university community".
It provides a compelling response to two strategic issues facing academic institutions. Such repositories:

- Provide a critical component in reforming the system of scholarly communication. A component that expands access to

research, reasserts control over scholarship by the academy, increases competition and reduces the monopoly power of journals, and brings economic relief and heightened relevance to the institutions and libraries that support them; and

- Have the potential to serve as tangible indicators of a university's quality and to demonstrate the scientific, societal, and economic relevance of its research activities, thus increasing the institution's visibility, status, and public value.

Bailey (Bailey, 2005) focuses on the diversity of digital materials that IRs can contain:
"An institutional repository includes a variety of materials produced by scholars from many units, such as e-prints, technical reports, theses and dissertations, data sets, and teaching materials. Some institutional repositories are also being used as electronic presses, publishing e-books and e-journals."

Choosing an Institutional Repository Software Platform
Once librarian determined the need to create an institutional repository and begun planning library service offering, it is time to examine the available systems closely to choose which one matches library needs.

Librarian/Information scientists need to balance the need for innovation in managing digital archives with available resources and budget constraints. Each Institutional Repository platform has unique strengths. Main purpose here is not to choose single system to platform. The choice of an Institutional Repository system depends entirely on the unique needs of institution or organization

To choose a software platform for Institutional Repository, it is a good idea to assemble a team consisting of university library administration and staff along with information technology staff. Each member contributes expertise on how the system should operate and the features required – whether service features (metadata, submission workflow, content types, etc.) or underlying server issues (operating system, databases, search mechanisms, etc.).

When examining a software platform, look for the following features:

- File formats supported: text, images, datasets, video, audio, etc.
- Metadata standards (descriptive, technical, preservation, rights)
- Interoperability: OAI compliance, Z39.50, SRW, etc.
- Permanent item address or locator (e.g., persistent URL)
- Search/browse of metadata
- Full-text search

- Workflow, submission for content approval
- User authentication and authorization:
- Back-end: content contributor, editor, administrator, metadata editor
- Front-end: end-user access to content
- Customization: API (application programming interface) for customizing the software, extending features as needed

Institutional Repository software platforms are available in several different licensing and distribution models.

Proprietary Software

You typically pay for the software and, optionally, any additional subscription or consulting fees. You own the use of the software and, with a subscription, get software upgrades. With a programming interface, or API, you can customise the software, but the software vendor owns, creates, and maintains the source code.

Open Source Software

You download the software platform, in most cases for free, and your IT staff can examine, customise, and enhance the source code. A central governing body manages the source code, but it is open for changes and enhancements from the development community (for example, CDSware, DSpace, E-Prints, Fedora, and Greenstone).

Institutional Repository Software Providers

The following are some of the better-known software developers/vendors offering Institutional Repository software. This is not an exhaustive list but you might examine these when choosing the system that best suits your needs:

- Archimede URL:http://www1.bibl.ulaval.ca/archimede/index.en.html
- bepress URL: http://www.bepress.com/repositories.html
- CDSware URL: http://cdsware.cern.ch
- CONTENTdm URL: http://contentdm.com/
- DSpace URL: http://www.dspace.org
- EPrints URL: http://software.eprints.org
- Fedora URL: http://www.fedora.info/index.shtml
- Greenstone URL: http://www.greenstone.org/cgi-bin/library
- Open Repository URL: http://www.openrepository.com/default.asp

An excellent resource for researching institutional repository software is the Budapest Open Access Initiative's *Guide to Institutional Repository Software*, available at http://www.soros.org/openaccess/software/.

Workflow Involved in Building of Institutional Repository

Step – I Content

- Pre-prints and other works-in-progress;
- Peer-reviewed articles;
- Monographs, teaching materials, data sets and other ancillary research materials;
- Conference papers, electronic theses & dissertation and gray literature and
- Administrative records, heritage of the institution etc.,

Step – Ii Submission

- Once the collection scope has been carefully defined, the next step should be given to the submission workflow;
- The practical aspect of the submission interface is large dependent on the repository software chosen.
- IR software usually has a web-based submission interface
  E.g., Dspace submission interface
  OCLC's name authority Web service.

Step – Iii Access:

- IR should be accessible to end users both within and outside of the institution.
- Few barriers exists to access IR

Step – Iv Output:

- A repository may decide that it will only automatically support popular format like HTML, PDF, MS word, Postscript, TeX or TIFF etc.,

Step – V Intellectual Property Rights (Ipr):

- Research project called RoMEO (Rights Metadata for Open Archiving).
- This project compiled a list of journal published copyright policies on 'self-archiving',
  E.g., Nature Publishing House allowed authors to re-use or to post a PDF copy on their own (Not-for-profit) IR.

Step – Vi Sustainability:

1. The need for ongoing strategic & financial support from the host institution;
2. The need to ensure continued long-term access to the content of repositories.

Step – Vii Evaluation:

- IR : is it "Fashion Statement"?
- Periodic evaluation to ensure that it they are fulfilling its basic institutional requirements.
- Evaluation to ensure that users continue to full their needs;
- It will help identify new requirements.
- Results may changes in development of IR.

The Relationship of Institutional Repositories to Open Access

The open access movement is a significant force for change in the scholarly publishing industry. While different definitions of open access exist, perhaps the most influential is that of the Budapest Open Access Initiative (BOAI) (Budapest Open Access Initiative, 2002): The literature that should be freely accessible online is that which scholars give to the world without expectation of payment. Primarily, this category encompasses their peer-reviewed journal articles, but it also includes any unreviewed preprints that they might wish to put online for comment or to alert colleagues to important research findings. There are many degrees and kinds of wider and easier access to this literature. By "open access" to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly Institutional repositories provide a compelling response to two strategic issues facing academic institutions. Such repositories:

- Provide a critical component in reforming the system of scholarly communication--a component that expands access to research, reasserts control over scholarship by the academy, increases competition and reduces the monopoly power of journals, and brings acknowledged and cited economic relief and heightened relevance to the institutions and libraries that support them; and
- Have the potential to serve as tangible indicators of a university's quality and to demonstrate the scientific, societal, and economic relevance of its research activities, thus increasing the institution's visibility, status, and public value.

Institutional Repositories in India

Both Open Access Archiving (OAA) and Open Access Publishing (OAP) are central and crucial to a country like India as far as its scientific agenda for the coming years are concerned. Thanks to the selfless efforts of a few, the initiatives on training and workshops are good models for creating open access experts but somehow it is felt that they are not just good enough unless the policy makers' whole hearted support is ensured for the successful implementation of repositories in the respective institutes from where the professionals were rigorously trained. Similarly the country's major journal publishing organizations should come up with open access models of publishing. CSIR, ICAR, ICMR, DRDO are just few examples. Incidentally in India, public

funded institutions are publishing all scientific journals. What is more important is the involvement of the University system in the Open Access movement, which is unfortunately yet to be seen. UGC should take the lead and involve Institutions like the INFLIBNET in capturing the invaluable intellectual capital being unattended and untapped in our universities and put them together into Open Access Archives. Similarly the national level research councils, viz., CSIR, ICAR, ICMR, DRDO, ICSSR etc. could consider collecting and archiving their research papers into a central archive which could be accessed by all, while individual institutional repositories which are interoperable, could be attempted simultaneously. Ultimately it's not technology but lack of proactive policies which pulls us back from success in most cases. (M.G. SreeKumar)

Some Examples: Institutional Repositories In Action

Sometimes it's helpful to see how other universities and cultural institutions have organised or presented their repositories. The following sites link to a variety of online repositories and archives.

- ePrints list of UK repositories
  - http://www.rdn.ac.uk/projects/eprints-uk/repositories/
- The Open Archives Forum, List of Repositories
  - www.oaforum.org/oaf_db/list_db/list_repositories.php
- SPARC Europe, list of European institutional repositories
  - http://www.sparceurope.org/Repositories/index.html#Europe
- Indian Academy of Sciences, Bangalore - http://www.ias.ac.in/ and http://www.ias.ac.in/journals.html
- Indian National Science Academy (INSA) - http://www.insa.ac.in/html/journals.asp
- M.S. Swaminathan Research Foundation at Chennai http://www.utsc.utoronto.ca/~chan/oaindia/
- NCSI of IISc http://www.ncsi.iisc.ernet.in/indest-ncsi-ir
- http://eprints.iisc.ernet.in
- Documentation Research and Training Center (DRTC), Bangalore. drtc.isibang.ac.in/sd
- SALIS, Chennai
- UGC-INFLIBNET, Ahmedabad http://www.inflibnet.ac.in
- NIC - "http://openmed.nic.in/ and http://medind.nic.in/
- IIT Delhi - "http://eprint.iitd.ac.in/dspace/" (DSpace)
- IIM Kozhikode - "http://eprints.iimk.ac.in" (EPrints)

- NCL Pune - "http://dspace.ncl.res.in/dspace/index.jsp" (DSpace)
- Vidyanidhi - India's premier Digital Library of Doctoral Theses "http://dspace.vidyanidhi.org.in:8180/dspace/index.jsp" (DSpace)
- INFLIBNET (UGC) Repository of Indian Theses - "http://dspace.inflibnet.ac.in/"

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  http://www.ariadne.ac.uk/issue39/mackie/
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- Beaudoin, Patsy and Margret Branschofsky, "MIT's DSpace Experience: A Case Study." (2004) http://www.dspace.org/implement/case-study.pdf
- The Glasgow ePrints Service at the University of Glasgow describes its service in a pamphlet for faculty and staff: http://www.lib.gla.ac.uk/daedalus/docs/eprintsleaflet.pdf
- Hubbard, Bill. 'Building Repositories of eprints in UK Research Universities'. In "Capturing Edinburgh's Research" event, University of Edinburgh Library, Edinburgh, 23 October 2003. PowerPoint presentation available at http://www.thesesalive.ac.uk/archive/SherpaEdinburgh.ppt
- Sally Rogers of the Ohio State University DSpace team writes about the planning process for their institutional repository, called Knowledge Bank: https://dspace.lib.ohio-state.edu/retrieve/335/KBRogers.pdf
- Queensland University in Australia posts the service definition of its ePrint repository: http://www.qut.edu.au/admin/mopp/F/F_01_03.html
- Queens University in Canada publishes its IR service model and project plan: http://library.queensu.ca/webir/planning/q_space_planning_document.htm
- The University of Rochester publishes the service model for its DSpace institutional repository project: http://www.library.rochester.edu/index.cfm?PAGE=1362
- Vanderbilt University Library staff share their plans to include an institutional repository project into the university's strategic plans:

http://staffweb.library.vanderbilt.edu/strategicplan/diglib/recommendations.htm

- http://staffweb.library.vanderbilt.edu/strategicplan/diglib/report/reporttosteering committee.doc

Conclusion

Institutional Repositories (IRs) are digital collections that capture and preserve the intellectual output of a single or multi-university community. IRs expands access to research, reassert control over universities/institutions of national importance by the Indian academic community, and provide a sustainable management system for digital content. IRs also promotes the use of standards and best practices, guaranteeing the international interoperability of their content through OAI (Open Achieve Initiatives)-compliance and metadata standards.

The increased demand for scholarly information, especially in science and social sciences, will probably increase the pressure on scholarly societies and universities. Digital publishing, global networking, more research, and increased communication among communities of scholars are driving the demand for broader access. The idea of the invisible institutions nurtured by meetings and preprints of journal articles has been replaced by global, discipline - or project-based online communities.

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Strengthen Collections in 'Library One' First to Embrace Library 2.0

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ABSTRACT

The paper explores the term library 2.0 and suggests that the term 'library one' as an appropriate term be used for making and popularizing 'library' as a brand. Rather than ride on the waves of terms created by the technology, librarianship should focus on its basics and roots in the information society environment. It argues that libraries have not progressed quantitatively, but have focused on quality and qualitative information. It lays emphasis on surveying library collections to strengthen them in developing countries like India. In the end, it hopes on the profession of librarianship coming out of library 2.0 buzzword trap.

Library 2.0

Library 2.0 seems to be a neologism, which has been created to with a technological environment all around it. It use is increasingly been found in library and information science journals, discussion forums, and conferences, though the concept has been coined in a blog in 2005. (Maness, 2006). If we interpolate the term, there should be a concept of 'Library 1.0' as well and something(s) in between the transition from library 1.0 to library 2.0. Rather than ride on the waves of terms created by the technology, librarianship should focus on its basics and roots in the emerging information society environment. New environments do necessitate coining of new words and terms to describe things and concepts, but rather than first create a term based on technology and then assign one or the other context in the librarianship is not appropriate. This seems to be the case with the term library 2.0, although its creator Casey defines it very broadly arguing that it applies beyond technological innovation and service (Maness, 2006). Crawford (2006) has compiled a list of sixty-two views and seven definitions of library 2.0. All this has taken a little more than 2 years only. If the present state of enthusiasm amongst library and information professionals remains at its present state and does not increase (which is highly unlikely), what

would be the concept of library 2.0, or library 3.0 a few years from now, say in the year 2010.

If we consider Library2.0 (based on Web2.0) as a buzzword used to describe all sorts of activities that constitute a major transition by modern libraries in their outlook, services, resources, etc. to reach out to non-users and potential users; then a pertinent question in librarianship, particularly in the developing countries' context, would be 'has there been any major transition in the theory or practice of librarianship in the recent past or are we gearing up for the change ahead of the time.'

From Web 2.0 to Web 1.0

There is no denying the fact that in the recent past change has been there, but it is riding on the wave of technology, and has less to do with changes in the practice of librarianship. The activities that are sought to be undertaken under the broad umbrella heading library 2.0 are similar to the activities that libraries and information centres have been carrying out in the pre-library-2.0; but more complex, perhaps larger in terms of scale and connectivity, and high-end technology driven, centered around the library as a broad concept than the user. Adoption of library-centered approach by the proponents of library 2.0 has been criticized (Plutchak, 2005). Therefore, it is time for libraries (whether of 1.0 or 2.0 or any other category) to reach out to their users adopting optimal technical environment with a philosophy: user is the king. So the library of the future is to be user driven, irrespective of the fact that whether it is using web2.0 or web1.0 technologies, and systems that are designed for and marketed under library 2.0 brand or otherwise.

Even the Web2.0 world has not been free of criticism. Breeding (2006) argues that Web 1.0 technologies have not yet fully achieved and a lot of potential still remains untapped in the application of web 1.0 technologies, particularly in libraries. Thus, basic Web functionality needs to become ubiquitous towards building Web 2.0 concepts and technologies.

Librarianship and Quantification

Another feature of the terminology related to web2.0 and library 2.0 is the focus on quantitative change through whole numbers and parts. It clearly resembles the hangover from the numbering system for software versions. The essence of librarianship is not in quantification but in quality and qualitative information. Though, most things with practice of librarianship are generally carried out with a quantitative perspective. Therefore it would not be inappropriate that we use 'one' as a suffix to the word library to symbolize the unity and strength of the library as a social institution wherever the situation so demands. Library as the one

and primary social institution and as a concept representing preservation and access to knowledge and information.

Need To Strengthen 'Library One' and Library Collections in Developing Countries

It is high time that instead of using buzzwords like Library 2.0, we should concentrate on strengthening and making Library, or in the terminology of Web 2.0 and Library 2.0, 'Library One' a popular and brand amongst at least all literate people, by coining appropriate terms in various languages. OCLC's report (2006) on a survey of 3,348 Internet users from Australia, Canada, India, Singapore, the United Kingdom and the United States clearly indicate that library as a brand needs to be popularized, rather than focus on library 1.0 or library 2.0 or library 3.0. Similar surveys should also be carried out for library users and non-users across India, preferably in their mother tongue, so as to understand the value of library for the users and the drawbacks in the library system.

We must strengthen libraries and their collections, particularly in the developing countries, using the optimum technologies, and not necessarily most advanced ones, keeping the local and environmental factors in mind. And this task is not simple, as in many developing countries there are fewer number of libraries and fewer unique titles within them than in the developed world. This would require a thorough and meticulous planning for each and every kind of library in a complex system of libraries and institutions, even in India. As the National Knowledge Commission has recommended a census of all libraries, a survey of their collection and resources needs to be carried out, if possible simultaneously with the census. Developing a check list of the parameters for survey of library collections and resources for various types of libraries would be a major success for the Indian Library Association, if deliberated upon at this conference and finalized soon after.

The Perils of Library 2.0, 3.0 And Beyond

Extrapolating a little further into the world of books, documents, information, websites, blogs, social networking sites, and further would show even more advancements in with dominated by the technological tools and associated services and systems, but with central issues of quality of information and privacy of users dominated by technology. (Rozenweig, 2006). Similarly, it has been stressed by Fister (2006) that "libraries need to find an ethical way to let our patrons do the kinds of record keeping and sharing they find useful and even natural while making sure such activities either are protected or that users are fully informed about the privacy they are giving up and its potential consequences.". If we add an Orwellian-Ninteen-Eighty-Four

perspective to the world of library 2.0., 3.0, and beyond, the library as a place and a concept seems suddenly frightening.

Concluding Observations

"Don't move ahead without finishing the previous task or overlooking the past."

In Punjabi, a proverb can be roughly translated into what has been stated above in quotes. The brief discussion on librarianship and 'library one' points to the meaning of the proverb. We should rather develop libraries and their collections rather than moving only along technology buzzwords. Plutchak (2006) has advised librarians to use the tools optimally in the following words.

"By all means, use all of the available tools, just don't get hung up on thinking that the tools provide the magic. Librarians do." (Plutchak, 2006).

Technology and its developments are important, and these would get incorporated into wherever these can be applied best. Shaping libraries and their collections solely on quantitative changes in technology would be disastrous for the libraries and their collections. The author is optimistic about the resilience of the profession of librarianship to come out of the library 2.0 and other buzzword-traps in the near future.

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Use of Electronic Resources by NPL (India) Researchers: A Survey

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ABSTRACT

The present era is the age of electronic system. The advancement in information processing, storage and communication technologies have revolutionized the role of the libraries and information centers allover the world, new competitions, new demands and proving a variety of information services now a days as a result libraries are facing new challenges Evaluate the sue of library at the National Physical laboratory (NPL) in New Delhi India. A survey of 912 employees was conducted through a questionnaire. The analysis of the collected data covers the use of electronic resources and how the electronic resources are improving the research and also what are the problems that are faces in using the electronic resources. Concludes that the main intention of the use of electronic resources has been the research interest of the users.

Keywords: NPL, Electronic resources, Survey

Introduction

With advancement of technology the libraries are moving towards digital Resources, which are found to be less expensive and more helpful for easy access. These are helpful especially to distant learners who have limited time to access the libraries from out side by dial up access by the commonly available electronic resources mainly CD-ROMs, OPACs and Internet etc., which are replacing the print media.

About Npl

The National Physical Laboratory is the premier research laboratory in India in the field of physical sciences. It has developed core competencies in standards, apex level calibration, engineering materials, electronic materials, materials characterization, radio and space physics, global change and environmental studies, low temperature physics, and instrumentation. Established in 1947, it is one of the oldest laboratories of the Council of Scientific and Industrial Research (CSIR). Its main activities are Research and development, Consultancy, Sponsored and contract research, Calibration and testing

The main aim of the laboratory is to strengthen and advance physics–based research and ensure overall development of science and technology in the country. Over the long period, the Laboratory has come to develop several new technologies of strategic, societal and national importance.

Scientific research operates with information as input and produces information as output. Input information is in part already disclosed and in part it originates from the researchers themselves who conduct the respective research work. Output information is novel and or reorganized knowledge, which is disclosed in the form of publications. Over the years the laboratory has published number of papers in research journals. This study seeks to understand what kind of shift in research at National Physical Laboratory has taken place over time, if any, and to identify factors that have come to influence research. In addition, it seeks to understand to what extent results from the study could be generalized to understand parameters that have potential to advance and promote research. Such a study is of great significance since the laboratory is currently celebrating diamond jubilee of its inception.

Scope and Limitations

- To know the availability of different types of electronic resources in NPL
- To study the use of different types of electronic resources
- To study the purpose and utilization of the electronic resources
- To find out the hindrances faced while accessing and using electronic resources
- To observe the impact of electronic resources over the traditional one and
- To suggest suitable recommendations to improve the electronic resources and services for the benefit of organization

Methodology

A questionnaire was designed to elicit the opinion of the faculty members. These were distributed among the researchers and other library users and the required data was collected which was further supplemented by informal discussions with the faculty. The analysis and interpretation of the data is presented in the subsequent sections.

Analysis

Qualification –Wise Distribution Of Respondents

Table 1 indicates that, the majority (30.87%) of the respondents are postgraduates with Ph D. in Science & Technology and 1.98% of the respondents are Bachelors degree holders in Engineering. At the same time 26.91% of the researchers are under graduates followed by 16.99% of the faculty members are others

TABLE-1: Qualification-wise distribution of respondents

Education	Total Responses	%tage
M Sc, Ph D	218	30.87
BE	14	1.98
B Sc	15.86	15.86
Graduate (Other discipline)	190	26.91
Under Graduate	120	16.99
Others	52	7.36
Total	706	99.97%

Sex Wise Distributions of Faculty Members

TABLE-2 reveals that 93.20% of male members are working NPL whereas, only 6.79% are female members in NPL. This is a glaring example of male-female imbalance in Research community at NPL.

TABLE-2: Sex wise distribution of faculty members

SEX	Total Responses	%tage
Male	658	93.20
Female	48	6.79
Total	706	99.99

Publication Experience of Researchers in Terns of Publication Productivity

Table-3 shows that only, 15.86% of the researchers have more than 25 research paper publication experiences and at the same time 13.31% of the researchers have 5-15 publication experience followed by 51.27%

researchers having less than 5 publications, whereas 15.58% of respondents have 15-20 publications respectively.

Table-3: teaching experience of faculty members

Publications	Total Responses	%tage
0-5	362	51.27
5-15	94	13.31
15-20	110	15.58
20-25	28	3.96
Above 25	12	15.86
Total	706	99.98

Frequency of Using Electronic Resources by Researchers

Table 4 shows that, out of 706 respondents, 6(0.84%) uses electronic resources once a week followed by 522 (73.93%) who are using daily whereas 26(3.68)% of faculty members use occasionally and only 1.27% never use electronic resources in the library

TABLE-4: Frequency of using electronic resources by faculty members

Frequency	Total.Responses	%tage
Daily	522	73.93
2-3 times daily	141	19.97
Once in a week	6	0.84
Once in a Month	2	0.28
Occasionally	26	3.68
Never	9	1.27
Total	706	99.97

Purpose of Using Electronic Resources:

Table: 5

Reason for Use	Total Responses	%tage
For Research work	204	28.89
For Communication	116.	16.43
For finding relevant specialized information	32	4.53
To update subject knowledge & General knowledge	24	3.39
To gain current & general information	330	46.74
Total	706	99.98

Table-5 reveals that, majority 330(46.74%) of researchers are using electronic resources to gain current & general information followed by

204(28.89%) for research work and finding relevant information in their specialization. Whereas, 3.39% use to update subject knowledge & General knowledge and to gain current and general information and fewer percentage (4.53%) of researchers are using for specialized purpose.

Use of Electronic Resources by Researchers

Table-6

E-recourses used	Total Responses	%tage
CD-Roms	17	2.40
Internet	580	82.15
OPAC	0	0
Online Database	0	0
E-journals	94	13.31
E-Books	15	2.12
Total	706	99.98

Table 6 shows the frequency of use electronic resources by the researchers Majority 580(82.15%) of the researchers are using internet followed by 94(13.31 ejournals using CDROms 17(2.40%). However OPAC and Online databases no body is using

Learning To Use Electronic Resources Table-7

Table 7 shows the most popular methods of acquiring the necessary skill to use electronic resources. 27 (33.33%) respondents take guidance from library staff. 24 (29.63%) respondents learn through trial and error method, 13 (16.05%) respondents learn with the help of computer department staff and 10 (12.35%) respondents learn from external courses.

Adequacy of Information in Electronic Resources

Table-8

Opinion	Total Respondents	%tage
Always	575	81.44
Some time	122	17.28
Never	9	1.27
Total	706	99.99

Table-8 shows that 575(81.44%) of the respondents indicate that the information available in the electronic resources is always adequate followed by 122(17.28%) indicate some time adequate and 9(1.27%) of

respondents felt that the information available in the electronic resources is never adequate

Hindrances In Accessing Electronic Resources

Table-9 shows the opinion regarding hindrances in accessing the electronic resources. Majority 224 (31.72%)stated that lack of IT knowledge to effectively utilize as the barrier to use electronic resources followed by 56(7.9%) opined that time consuming 162(22.94%)felt that limited access to computers.

Hindrances.

Table-9

Hindrances	Total Responses	%tage
Too much information is retrieved	155	21.95
Time consuming	56	7.93
Lack of IT knowledge to effectively utilize the services	224	31.72
Using electronic resources often distracts from doing work	109	15.43
Limited access to computers	162	22.94
Total	706	99.97

Impact of Electronic Resources on Academic Career

Table-10: shows that, 280 (39.66%) respondents stated access to a current up-to-date information is the benefit of using electronic resources. Similarly, 116(16.43%) expressed faster access to information is the advantage, and 220 (31.16%) indicated easier access to information as the benefit to develop the scientific career of the researchers in terms research and development.

Impact of Electronic Resources on Research and General.

Table-10

Category	Total responses	%tage
Access to a current up to date information	280	39.66
Easier access to information	220	31.16
Faster access to information	116	16.43
Access to a wide range of Information	90	12.74
Total		99.99

Problems Faced While Using Electronic Resources

Table-11 shows that, 194(27.47%) of respondents have faced problem of lack of timing followed by 17 (10.90%) of faculty members indicating lack of training as the main problem while using electronic resources. 199(28.18%) and 16 (2.26%) of the researchers are troubled with lack of hardware and software problems respectively.

Problems Faced While Using Electronic Resources.

TABLE: 11

Problem	Total responses	%tage
Lack of hardware	199	28.18
Lack of software	16	2.26
Lack of training	77	10.90
Lack of information on Electronic resources	122	17.28
Lack of operating funds	98	13.88
Lack of timings	194	27.47
Total	706	99.97

Success Rate of Finding Required Information in Electronic Resources

The respondents were requested to indicate the success rate in finding required information using electronic resources. Table 12 shows that, 180(25.49%) of respondents were succeeded in the range of 75-99, followed by 94 (13.31%) respondents who succeeded in the range of 50-74 and least percentage 44(6.23%) of the researchers were succeeded in the range of less than 25%

Success Rate.

Table-12

Success rate	Total responses	%tage
100%	324	44.89
75-99%	180	25.49
50-74%	94	13.31
25-49%	64	9.06
Less than 25%	44	6.23
Total	706	98.98

Researchers Opinion Regarding Features of Electronic Resources as A Source For Their Research Work:

Table-13

Features	Poor	Fair	Good	Very good	Excellent
accessibility	18	26	480	102	80
accuracy	22	39	520	104	21
availability	29	42	175	180	280
Consistency	23	32	380	160	111
Ease of use	28	24	520	114	20
flexibility	18	30	290	209	159
permanence	38	39	310	188	131
timeliness	28	32	295	190	171
Uniqueness	20	18	420	112	136
Usefulness	0	14	443	201	48

Findings of The Study

Only 57.27% of the researchers have more than 25 publications

- Majority of respondents (73.93%) are using electronic resources daily and 35.09% of researchers are using electronic resources for finding relevant information in their area of specialization and for research work
- Majority 330(46.74%) of the respondents use Internet and 17 persons (2.40%) uses CD-ROMs. While using 98 (13.88%) respondents are taking Guidance from Library Staff regarding the use electronic resources
- Majority of the respondents indicate that, the information available in the electronic resources is always adequate.
- Regarding the hindrances of accessing the electronic resources, majority of respondents 224(31.72%) stated that lack of IT knowledge to effectively utilize the services is the main barrier to use electronic resources.
- Majority of respondents 280(39.76%) stated access to a current up to date information as a benefit of using electronic resources
- Majority of respondents 194(13.88%) have faced problem of lack of timing and 77(10.91%) researchers indicate lack of training as the main problem while using electronic resources and
- Regarding the success rate of finding the required information in electronic resources, 324 (44.89%) of researchers have rated that they have succeeded in the range of 100
- Electronic resources helps to increase the Research & Developments in terms of patents and publication productivity

Suggestions

1. The Library/authority must conduct training programmes for the researchers regarding how to use the electronic resources effectively.
2. Awareness should be created to use e-journals and e-books to obtain current information
3. More computer/terminals should be installed in the library for the benefit of the researchers and library users
4. More funds should be given to acquire electronic resources.

Conclusion

The present study seeks to examine the usage of e-resources by the researchers in NPL (India). The survey reveals that, most of the researchers are aware of electronic resources. Information environment is very complex. In order to retrieve desired information of the users, the information intermediary has to adopt inter alia certain behaviourial strategies to make the system effective. Survey is one such approach that identifies the basic requirements that the researchers and users needs. The electronic resources have played a vital role in all fields of human life. These have rapidly changed the way of seeking and disseminating information. It is clear from the study that, the researchers of NPL (INDIA) have developed their research career. The speed of availability and the ease of accessibility of information make the faculty members to use electronic resources more frequently. This study helps the librarian to know the importance of electronic resources in academic environment.

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Use of Touch Screen Technologies in Libraries and Community Information Centers as Access Point of Knowledge and Information

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ABSTRACT

Touch Screen Technology is just a few years old and is in use in many areas. It has a touch screen server, a controller and a software driver. It works both as output and input device. It discards mouse and keyboard and instead uses screen in place of them. The cursor itself moves to the point where finger touches screen. Touch screen makes information more easily accessible by allowing users to navigate by simply touching display screen. The paper studies in brief historical development of TS, its various types and qualities. Paper also studies it's working. The paper provides information on various technologies used, display size, resolution, brightness, and viewing angles along with power consumption and radiation emission and price etc. The paper studies various prevailing adoptions in public places. Paper studies library applications such as OPAC, information about readers' registration, circulation, and reservations, etc. E-books and e-journals can also be made easily available on it. E-thesis is another area of its use in a library. Users can also navigate dictionaries and Encyclopedias on TS's easily. The paper also studies its use in libraries as Information Kiosk and e-governance projects. The paper also suggests for modifications required in library software for its use.

Introduction

Touch screens are devices that allow a user to provide input to a computer, or electronic system by making physical contact or near contact with the system's display. Touch screens provide input and output capabilities together. These are used like mice as pointing devices. Instead of moving a mouse to activate and relocate the cursor, the user touches the screen to position the cursor a device like a pencil that has a rubber or plastic point may also be used. The user modifies what is seen on the screen by touching it, rather than by using key board and mouse. This quality makes it more users friendly. A common man, without the knowledge of computer use it with joy.

Historically touch screen technology is just 3 decades old. The touch screens were derived from the digitizing tablet, developed by Dr. G. Sam Hurst in 1971 at the University of Kentucky, to allow scientists to record data from graphs by placing the graph on the tablet and pressing the paper against the tablet with a stylus. In 1977 Elographics (now EloTouch Systems), the first commercial producer of digitizing tablets, paired with Siemens Corporation to develop a transparent version of the tablet on curved glass so that it could fit over a CRT (cathode ray tube) screen, which was then the predominant display technology. The HP-150 was among one of the world's earliest commercialized touch screen computers. It actually does not have a touch screen in the strict sense, but a 9" Sony CRT surrounded by infrared transmitters and receivers, which detect the position of any non-transparent object on the screen. Royalties or legalities for touch screen technology were filed during the 1970's and 1980's. The marginal cost of touch screen technology is routinely absorbed into the products that incorporate it and is effectively eliminated. Touch screen hardware and software, has matured and been perfected over more than three decades. Now companies have integrated touch screen technology with dry-erase boards (wall-mounted surfaces that allow the user to write with markers and erase the markings with a cloth). With these devices, whatever a user writes on the board can be simultaneously recorded and saved in a computer file.

The touch screen displays are found now days in airplanes, automobiles, gaming consoles, machine control systems, appliances and handheld display devices of every kind. They have become familiar in retail settings, on point of sale systems, on ATMs and on PDAs. The popularity of Smart Phones, PDAs, portable game consoles and many types of information appliances is driving the demand for, and the acceptance of, touch screens.

Touch Screen Technologies

All of the touch screens basically work like a mouse. Once the software driver for the touch screen is installed, the touch screen emulates mouse functions. Touching the screen is basically the same as clicking the key board or mouse. When we touch the touch screen, the mouse cursor move to that point and make a mouse click. We can tap the screen twice to perform double-click, The touch screens will normally emulate left mouse clicks. Through software, we can also switch the touch screen to perform right mouse clicks also.

Touch screens consist of a display component, typically a **liquid crystal display (LCD)** or CRT covered or surrounded with a transparent sensor device that allows the screen to detect the contact or proximity of an object.. The amount of pressure or types of contact needed to detect a touch varies from device to device. Devices also vary widely in accuracy (determining exactly where the touch occurred), durability (reliability with repeated use or in inclement circumstances), expected lifetime (time before failure of the device or parts of it), and response time (how long it takes the screen to detect a touch.

Touch screens are typically pressure-sensitive (resistive), electrically sensitive (capacitive), acoustically sensitive (SAW - surface acoustic wave) or photo-sensitive (infra-red) over layed over display. The effect of such overlays allows display to be used as an input device, removing the keyboard and/or the mouse as the primary input device for interacting with the display's content. Such displays can be attached to computers or, as terminals to networks.

There are various technologies available for touch screens such as 4 Wire Resistive, Capacitive, Wave Interruption, etc. These are discussed in this section so as to enable information officers aware of technologies available and their merits and demerits. High end technical details are not part of this section.

Wire Resistive (Pressure Sensitive) Screens

It is made of two thin sheets separated by a grid of plastic dots. Each sheet, though clear, conducts electricity. A 4 wire resistive touch screen panel is coated with a thin metallic electrically conductive and resistive layer that causes a change in the electrical current which is registered as a touch event and sent to the controller for processing. When we touch the screen, the sheets contact each other only at the spot where we touched it. The screen measures the amount of electricity flowing between the two sheets to determine where the user touched. The term "4-wire" comes from the four wires used to provide and measure the currents on the screen.. A 5-wire resistive screen increases durability by

adding a sheet so that the surface touched by the user is not one carrying the currents. An 8-wire resistive screen is the same as 4-wire screens except that it uses an extra set of wires to measure the currents and has increased durability. Resistive touch screen panels are generally more affordable but offer only 75%/clarity and the layer can be damaged by sharp objects. Resistive touch screen panels are not affected by outside elements such as dust or water and are the most commonly used today.

Capacitive Touch Screens

Capacitive screens use a single thin sheet. A capacitive touch screen panel is coated with a material, typically indium tin oxide that conducts a continuous electrical current across the sensor. The sensor therefore exhibits a precisely controlled field of stored electrons in both the horizontal and vertical axes - it achieves capacitance. The screen is connected to electric oscillators.

A signal of a specific frequency is broadcasted through the sheet creating an oscillating electric field around it. The human body is also an electrical device, which has stored electrons and therefore also exhibits capacitance. When the sensor's 'normal' capacitance field (its reference state) is altered by another capacitance field, i.e., someone's finger, electronic circuits located at each corner of the panel measure the resultant 'distortion' send the information about the event to the controller for mathematical processing. Capacitive sensors must be touched with a conductive device being held by a bare hand or a finger, unlike resistive and surface wave panels that can use anything that can point, such as a finger or stylus. Capacitive touch screens are not affected by outside elements and have high clarity. Although these screens are much clearer and transparent than those covered with resistive sheets but they lose accuracy over time and do not detect the presence of non-conductive objects, such as gloved fingers.

When we come near the screen with a conductive object, such as a finger, the electric field is changed, which changes the signal in the sheet. The screen can determine the location of the conductive object by measuring the signal in the sheet.

Surface Acoustic Wave Touch screens

Surface Acoustic Wave touch screen technology is a very durable screen that is widely used in applications such as computer based training and information Kiosk displays. Surface Acoustic Wave Technology uses ultrasonic waves that pass over the touch screen panel. When the panel is touched, a portion of the wave is absorbed. The screen can detect where the interference occurred. With surface acoustic wave (SAW) screens, an inaudible sound wave is "played" over the surface of the screen. A finger

near the screen absorb some of the sound wave, even if it is gloved, and the screen can determine the location by the change in frequency and strength of the sound wave. The change in the ultrasonic waves registers the position of the touch event and sends this information to the controller for processing.

The SAW screen provides batter image clarity, but it may not perform well in extremely dirty or dusty environments. It responds to finger or soft rubber tipped stylus. Surface wave touch screen panels can be damaged by outside elements. Contaminants on the surface can also interfere with the functionality of the touch screen.

Infrared Touch Screen

An infrared touch screen panel employs one of two very different methodologies. One method used thermal induced changes of the surface resistance. This method was sometimes slow and required warm hands. Another method is an array of vertical and horizontal IR sensors that detected the interruption of a modulated light beam near the surface of the screen. Infrared touch screen technology is the only type of touch technology for large displays such as 42-inch Plasma screens. It is a durable technology that offers high image clarity.

Near Field Imaging Touch screens

Near Field Imaging touch screen technology is suited for use in industrial control systems and other harsh environments. The NFI type screen is not affected by most 'surface contaminants or scratches. It respondsjgyhi90u0` or gloved hand.

Depressive Signal Touch Screens

It uses sensors to detect the mechanical energy in the glass that occur due to a touch. Complex algorithms then interpret this information and provide the actual location of the touch. Mechanical vibrations are used to detect a touch event; any object can be used to generate these events, including fingers and styli. The technology is unaffected by dust and other outside elements, including scratches. It provides excellent optical clarity.

Optical Imaging Touch Screens

In this two or more image sensors are placed around the edges (usually the corners) of the screen. Infrared backlights are placed in the camera's field of view on the other sides of the screen. A touch shows up as a shadow and each pair of cameras can then be triangulated to locate the touch.

Strain Gauge Touch Screen Technology

In a strain guage configuration the screen is spring mounted on the four corners and strain gauges are used to determine deflection when the screen is touched. This technology can also measure the Z-axis. ticket machines from vandalism.

Monitors

Monitor is basic equipment where touch screens are overlayed. The two most common types of monitors that are being used today's are also used for Touch screens. They are CRT (Cathode Ray Tube) monitors and LCD (Liquid Crystal Display) monitors. CRT type monitors are the traditional monitors that we have been using for years. LCD type monitors are based on a newer technology and are becoming very popular, mainly because they have great space and energy saving advantages over CRT monitors. CRT and LCD monitors are based on completely different technologies, and thus have quite different display characteristics.

One of the biggest advantages of LCD monitors is that they are compact and lightweight. An LCD monitor is based upon a very thin screen as opposed to the. Tube of a CRT monitor. This means that not only do they take up less of your desktop space; they can also be used in many places where a larger CRT monitor cannot fit. Color flat panel LCD monitors are comparable in screen size to traditional CRT monitors. LCD monitors are also appearing that have 15", 17", and even larger screen sizes that are comparable to the largest CRT monitors.

Most CRT monitors are capable of displaying unlimited colors. Some LCD monitors are only capable of hundreds or thousands of colors, but many of the newer LCD's are capable of unlimited colors. CRT monitors are usually capable of displaying multiple video resolutions, each with the same quality. LCD monitors, however, usually has what is called a Native resolution, or the resolution that it displays best. The native resolution is generally the highest resolution that the LCD can display and this is the display resolution that will appear the crispest/sharpest

Typically, brightness is not a concern with CRT monitors. LCD monitors are backlit and have different levels of brightness. The brightness rating for an LCD monitor is commonly referred to as 'nits', and commonly ranges from 70 to 250 nits. The higher the nits, the brighter the display.

A CRT screen can be looked at from a very wide angle, practically from the side, but an LCD monitor typically has a smaller viewing angle, needing to be viewed more directly from the front. From the side, the image on an LCD screen can seem to disappear, or invert colors.

LCD monitors consume much less energy than CRT monitors. This makes the LCD great for laptop and portable computers. Also CRT monitors are known to emit harmful radiation, whereas LCD monitors do not.

LCD monitors are now days very affordable. One thing to consider is the up-front cost versus the long-term cost. A CRT monitor will cost less up front but will use more energy than a LCD panel monitor. An LCD monitor will cost more up front but will conserve energy in the long run. The energy savings may not be much for an individual user, but if you are looking at a corporate office where 50 displays are in use, the energy savings might be more of an issue.

Working of Touch Screen: -

A basic touch screen has three main components: a touch sensor, a controller, and a software driver.

Touch Sensor

A touch screen sensor is a clear glass panel with a touch responsive surface. The touch sensor/panel is placed over a display screen so that the responsive area of the panel covers the viewable area of the video screen. Various technologies used for sensors have already been discussed.

Controller

The controller is a small PC card that connects between the touch sensor and the PC. It takes information from the touch sensor and translates it into information that PC can understand. The controller is usually installed inside the monitor for integrated monitors or it is housed in a plastic case for external touch add-ons/overlays. The controller determines type of interface/connection needed on the PC. Integrated touch monitors have an extra cable connection on the back for the touch screen. Controllers are available that can connect to a Serial/COM port (PC) or to a USB port (PC or Macintosh). Specialized controllers are also available that work with DVD players and other devices.

Software Drive

The driver is a software update for the PC system that allows the touch screen and computer to work together. It tells the computer's operating system how to interpret the touch event information that is sent from the controller. Most touch screen drivers today are a mouse-emulation type driver. This makes touching the screen the same as clicking your mouse at the same location on the screen. This allows the touch screen to work with existing software and allows new applications to be developed without the need for touch screen specific programming. Some

equipment such as thin client terminals, DVD players, and specialized computer systems either do not use software drivers. Integrated touch screen monitors are computer displays that have the touch screen built-in. Touch screen add-ons are touch screen panels that hang over an existing computer monitor.

Application of Touch screens

Now days there are many application of this technology in various fields. The technology can be used for museums, corporate information, public transportation schedule / status, airport terminal passenger internet and mail systems, automated travel and entertainment ticket dispensers, custom greeting card machines, tourist guide, hotel lobby, shopping mall directory, trade show booths, pen computing, web phones, interactive computer games, auto navigation systems, video & audio database, multimedia kiosks, consumer credit application kiosks, gas stations, point of sales, restaurants, grocery stores, hospital and hotel directories (check-in, registration), banks and financial reporting, bank cash advance and teller machines, corporate presentation, employee relation information, assistive technology, computer aided instruction for children, edutainment, professional training and presentations, employee orientations, casinos, government voting facilities, military control system, scientific research lab, industrial equipment and instrument control, manufacturing or factory automation, automotive parts look-up centers.

It is very commonly used in ATMs & railway reservation enquiry. It is now days being applied for information kiosks of the government.

Library Application of Touch Screen

The touch screens, being costly so far, are not common in libraries but reduced cost of this will initiate its use by libraries and information center. It's simplicitly in use will be helpful to the users and staff. The technology will be popular very soon. Use of ATM is so easy that now a days every account holder wish to have debit/credit cards. The people are already aware of this technology. This technology may be used for various applications in the libraries such as

Circulation and Reservations

The readers can enquire themselves about circulation of books and make reservations. With the use of smart cards and passwords complete circulation work can be handled with this technology.

OPAC

Readers can easily use on-line public access catalogue with the use of this technology.

Information Kiosk: -
This technology will be helpful in establishing information kiosk in various parts of the library and institution. Use of WI-FI can make this task easy. These kiosks can be unmanned

Serial Section: -
Information regarding availability of serials and their location will be helpful to the readers with the use of this technology

Internet Facilities: -
Internet facilities with Touch screen will be very helpful to the read

Thesis Section: -
Libraries may make use of this technology in providing information about thesis and their text.
Besides libraries may also apply this technology for various administrative and other purposes.

Advantages of Library Application of Touch Screen: -
Easy to use;
Save manpower;
Save time of the reader;
Can be handled even by those who do not use computers frequently;
Networking will be easy to install and use; and
Can be made available even at remote places.
Requirements for Library Application of Touch Screen: -
The following are the requirements for its application in libraries: -
Cheap technology
Fully automated library
Digitized reading materials
Menu driven better library soft wares.

Conclusion and Suggestions: -
No doubt the Touch Screen Technology have many advantages, which soon may over power our libraries. INFLIBNET and other implementing agencies may take initiative to establish information kiosks. The e-governance may be linked with these kiosks and government may take initiative to make use of this technology by providing finance to the public libraries. Manufacturing companies should also initiate to reduce its cost and set up few centers in libraries.

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Brief biographical information:

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A Feasibility Study on Automation and Networking of College Libraries with Special Reference to Sri Venkateswara University and Sri Krishnadevaraya University (Andhra Pradesh) Affiliated Colleges

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ABSTRACT

This paper discusses the role of college libraries in electronic information environment and purpose of the feasible study. It discusses the objectives and scope of the study and hypothesis formulated attesting. It highlights the methodology used for data collection. It highlights in brief the benefits of college library automation and college library networking. It also suggests suitable hardware and software requirements for establishing a college library information system. Finally, this study proposes a feasible plan for college library network for S.V. University and S. K. University in Andhra Pradesh and implementation plan.

Introduction

It is the libraries that collect, store and transmit up-to-date information to the teachers, students and those engaged in research. Hence all expert bodies on higher education from all over the world have pointed out that higher education need to change its patterns, provision and the services it delivers, more rapidly than ever before. The existing system and methods cannot produce citizens suitably qualified for the future needs of the society.

The problems of our college libraries were listed as: **1.**lack of good library policy; **2.**high rate of unplanned growth; **3.**unrelevant collections; **4.**poor organization of materials; **5.**high cost of collection and storage; **6.**unqualified staff; **7.**inefficient retrieval systems; and **8.**diversion or unscientific use of funds, etc.

Whenever any new information technology is to be applied to the existing system in libraries, it is essential to do a systematic study of the

feasibility of the new system and its application; Feasibility study methods include the use of questionnaire, observation and interview with library staff, management and users of libraries. The feasibility study of automation and networking should cover survey of current trends in hardware, software, network technologies, which are considered suitable to the new system. It also should estimate the cost of the new system. The feasibility study has to spell out the ideal objectives of the new system or application and show how it proposes to overcome the limitations of the existing system. The present investigate study has chosen for its field all the colleges affiliated to Sri Venkateswara University and Sri Krishna Devaraya University in Andhra Pradesh.

Objectives of the study

The following are the objectives of the study:

- To over-view the existing situation of library automation in the selected college libraries;
- To estimate the infrastructure requirements for each college keeping in view the financial crunch;
- To assess the feasibility of library automation and networking plan for each college library under each university (i.e colleges affiliated to each university);
- To trace the available facilities in hardware , software and manpower for selection and implementation in college libraries within their budget provision;
- To derive solutions for hardware, software and communication network requirements for automation and networking at the college library level;
- To identify appropriate networking models and methodologies that suit the Indian environment keeping in view the constraints of funds, automation levels in college libraries, non-availability of networking software and inadequate library personnel (staff) trained in the use of computers;
- To formulate a plan of action for a college library network within each university in a cohesive fashion; and

1. requirements for the library staff.

Scope of the Study

The study covers the colleges affiliated to Sri Venkateswara University and Sri Krishnadevaraya University. The following table gives details of the number of colleges covered under both universities and also the number of colleges, which responded to the investigator's appeal for information.

Table: Number of colleges responded to the investigation.

S.No	Name of the district	Name of the University	Responded colleges	Total colleges covered
1	Chittoor	S.V.U	50	32
2	Cuddapah	S.V.U	53	24
3	Nellore	S.V.U	41	17
4	Anantapur	S.K.U	39	27
5	Kurnool	S.K.U	50	41
	Total		**233**	**141**

Presentation

The data collected through the questionnaire was analysed according to the objectives and hypotheses of the study, using statistical techniques such as mean, median, mode, chi-square and Z test are used for better presentation. MS-Word and MS-Excel software packages were used for diagrammatical presentation of the data.

To know the latest trends in hardware and software and software technology useful for library automation and networking, related information was collected from various sources such as books, journals, especially caliber proceedings from 1994 to 2000 etc. Subject experts working in the universities and computer centers were also consulted.

The concept of a degree college (affiliated to any university), its principles, policies and procedures are more or less similar in the whole India as all colleges have to follow the guidelines framed by the University Grants Commission. Conditions prevailing in their libraries and the problems faced, are apt to be similar all over the country. Therefore the findings of this study are likely to be of great value to all colleges in the country, even though the present inquiry limits itself to two universities only in Andhra Pradesh.

Methodology of the Study: The methodology used for data collection and presentation of analysis is given hereunder.

Data Collection

To know the existing conditions of college libraries with regard to collection, services, physical facilities, information technology infrastructure, etc., the questionnaire method was used. All the questions in the questionnaire are factual and intended to obtain correct information about conditions of which respondents are presumed to have knowledge. The questionnaire method has its usual limitations, such as the respondent's neglecting to answer questions and giving irrelevant answers, thus lowering the response rate to the questions. These

limitations have been minimized by supplementing the questionnaire method with interviews. Further, the questionnaire is so designed as to elicit relevant information pertaining to each college library in the study area. The questionnaire is divided into twelve (12) subsections: 1.General 2.Library Physical facilities 3. Staff 4.Collection size 5.Technical processing 6.Services7.Transactions 8.Budget 9.Equipment 10.Library automation status 11.Problems of the library management in automating the library 12.Suggestions with regard to library automation and networking.

There are 233 colleges in the study area. Among them 141 colleges are affiliated to Sri Venkateswara University and the remaining 92 colleges to Sri Krishnadevaraya University. Copies of the questionnaire were posted to the librarians of all these colleges. However, responses were received from 141 librarians only (i.e. 60.52 % of total colleges). The annual reports of these two universities have also been utilized for getting the required information.

Analysis an de inexpensive and reliable intercity and international communication facilities, cognizance has been taken of the available network techniques and topologies. The services of INFLIBNET, DELNET, CALIBNET, and NICNET as well as the use of library related technology for automation and networking have also been examined

College Library Automation

The college library automation includes as its main functions, the following;

a) Acquisition control, b) Serials control, c) Circulation control, d) Database creation, e) Maintenance of Bibliographic database and f) User services.

College Library Network

College library network includes the following:

a) pre-requites for college library network, b) selection criteria, c) hardware configuration, d) software requirements, e) networking design, f) cost analysis, g) levels of college library network implementation plan, h) phase wise implementation.

Hardware Requirement for College Library Network

The college libraries are categorized as three types, The small college libraries with limited courses, strength of students and staff are considered as type one. Whereas average size of book collection and student strength is considered as second type of colleges. The college libraries with good book collection, high strength of student and staff is considered as third type. Accordingly, the hardware requirements are

suggested for each type independently and Presented here under as Model I, Model II and Model III.

Model I (for small college libraries)

Peripherals	Model – I	Price (Approximate)
RAM	64 MB	900
Mother Board	810 Chipset	3400
Processor	Intel /Celeron 900 Mhz	4000
Hard Disk	20 GB	4200
Flexible disks	Floppy Drive, CD Drive	500, 1500
No of Terminals	1	---
Disk controls	IDE	---
Hubs	10 Mbps, 5 ports	1000
Backup Devices		
Printer	Dot matrix	7600
Cabinets	AT	750
Keyboard	Normal	600
Speakers	160 W (PS22)	400
Mouse	Serial	500
Network Interface card	10 Mbps	600
Modem	56 Kbps (Internal)	1000
Optional	Seanners, CD writers	12200, 3900
Monitors	15'' color monitor	5250

Model II (for Medium college libraries)

Peripherals	Model – II	Price (Approximate)
RAM	128 MB	1650
Mother Board	815 Chipset	4500
Processor	PIII 866 Mhz	5600
Hard Disk	30 GB	4800
Flexible disks	Floppy Drive, CD Drive, Zip Drive.	500, 1500, 4,800
No of Terminals	3	---
Disk controls	IDE	
Hubs	10/100 Mbps 8 ports	2,200
Backup Devices		
Printer	Dot matrix, inkjet	14,000, 5700
Cabinets	ATX	1500
Keyboard	Multimedia	750
Speakers	440 Wats	550
Mouse	Serial / PS2	500 / 650
Network Interface card	10 / 100 Mbps	850

Modem	56 Kbps (internal)	1000
Optional	Scanners, CD writers, Web camera, e-Pad.	12,200, 3900, 2200, 1600
Monitors	15'' color Monitor	5250

Model III (for big size college libraries)

Peripherals	**Model – III**	**Price (Approximate)**
RAM	1286 MB	3200
Mother Board	815 Chipset	4500
Processor	PIII I GHz	6200
Hard Disk	40 GB	5500
Flexible disks	Floppy Drive, CD Drive, Zip Drive.	500, 1500, 4,800
No of Terminals	5	---
Disk controls	IDE / SCSI	
Hubs	10/100 Mbps, 8 / 16 ports	2,200, 3500
Backup Devices		
Printer	Dot matrix, Laser jet	14,000, 15700
Cabinets	ATX	1500
Keyboard	Multimedia	750
Speakers	880 Wats	1000
Mouse	Serial / PS2	500 / 650
Network Interface card	10 / 100 Mbps	850
Modem	56 Kbps (External)	2500
Optional	Scanners, CD writers, Web camera, e-Pad.	12,200, 3900, 2200, 1600
Monitors	15'' color Monitor	5250

Note : The cost mentioned are only approximate based on market news in IT magazines (i.e.v.11(3),January 2002,v.11(5), March 2002,v.11(6), April2002), and the advertisements in newspapers such as The Hindu. But that costs are subject to changes from time to time. Assemble sets are also good for college level libraries to reduce the expenditure on hardware purchased.

Suitable Library software for college library:

The INFLIBNET has developed a suitable library software package with thorough modifications and made available to all academic libraries and the R&D libraries in the whole country. This library software package is called Software for University Libraries (SOUL).

In case a college library finds it difficult to acquire the SOUL package, it can develop its own software required for library functions by using

Visual Basic. Visual Basic is a programming language which is suitable for developing a library software package, especially functions like acquisition, circulation etc. This type of software is not only user-friendly but also compatible with the needs of small college libraries where book collection and user strength are very small. But while developing software by using the VB, the librarian should take care to follow the standards set by the INFLIBNET for maintaining uniformity.

Hypothesis Tested

1. Majority of the college libraries in the selected universities may not have computers. But they may be eager to implement library automation and networking to have online access to information provided at manageable / minimum cost. This hypothesis tested in the table "College libraries in automation networking responded" and found accepted.

2. The users of each college library may be eager to have internet accessibility through the WWW browsing. This is tested in the table "Readers interest in Internet accessibility" and accepted.

3. The college librarians may be willing to under go computer training provided there is no financial commitment on their part. It is analysed in the table "Librarians computer trained and willing to undergo computer training in the colleges : under study". This study shows hypothesis accepted.

4. Private colleges affiliated to the universities may have a more positive attitude to computerization of libraries than government degree colleges. This is tested in table "Positive attitude of the staff towards computerization – an opinion survey".

5. Majority of the private colleges may have computer centers unlike the government colleges. The study reveals the hypothesis is accepted. This is tested in the table "Availability of computer centers in government and private colleges : Comparative study".

Proposed College Library Network

It is proposed that in the study area three levels of college library network may be had the limits of each specified: 1. City college library network (limiting to each town), 2. District college library network (limiting to each district), 3. College library network of each university, that is, college library network of SVU and SKU.These three levels of network graphically represented in the following pages:

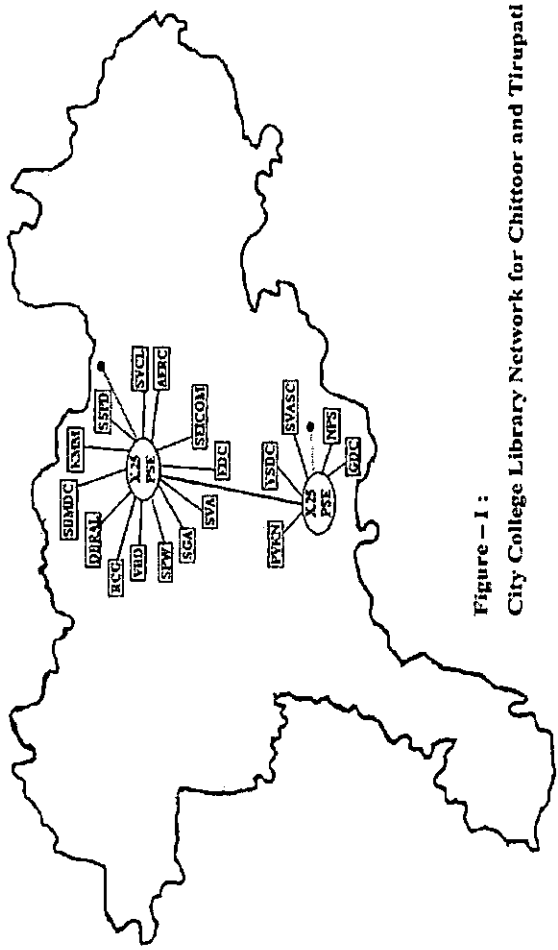


Figure – 1 :
City College Library Network for Chittoor and Tirupati towns

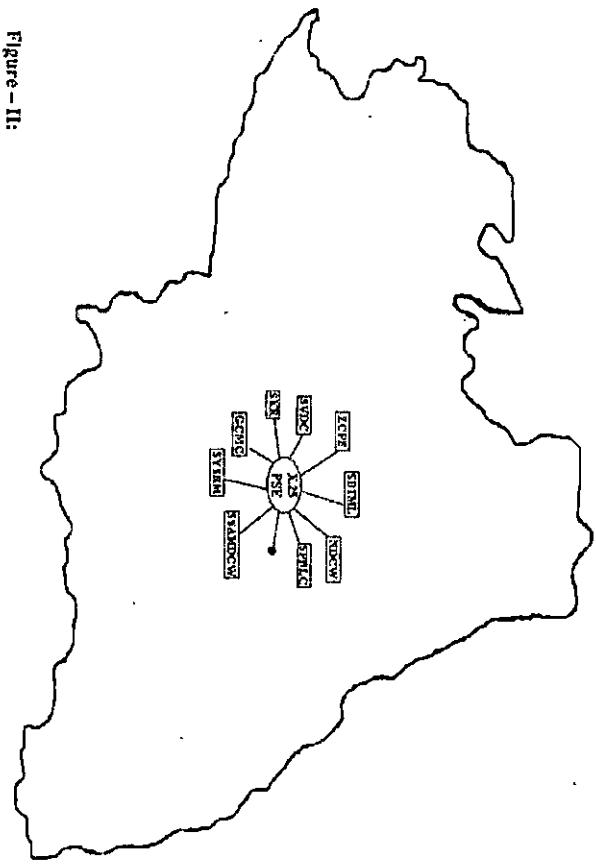


Figure – II:

City College Library Network for Cuddapha town

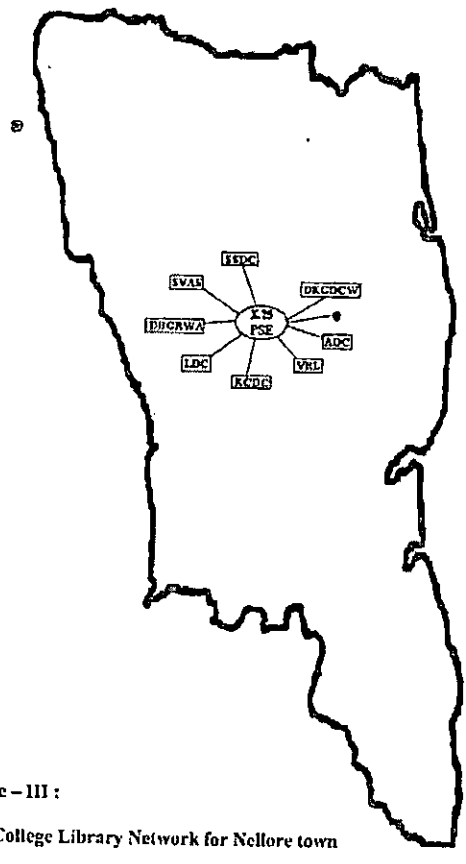
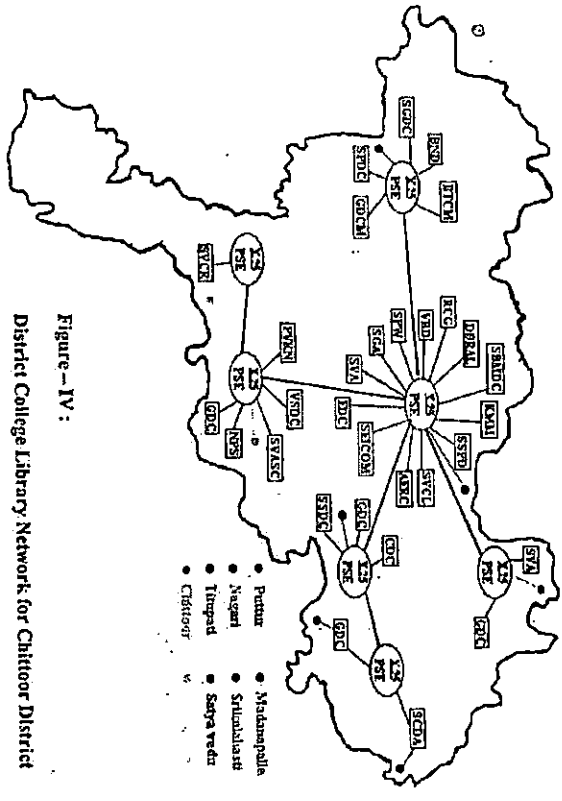


Figure – III :

City College Library Network for Nellore town



Figure–IV :

District College Library Network for Chittoor District

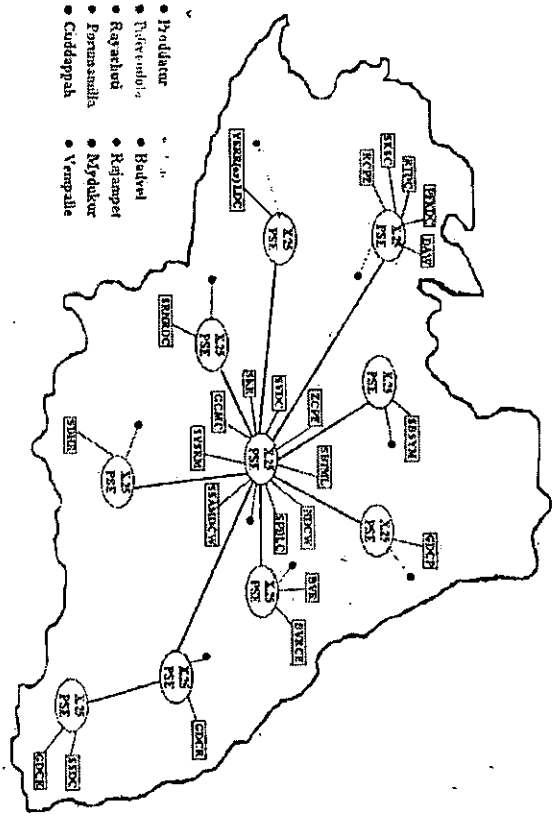


Figure – V :

District College Library Network for Cuddaph District

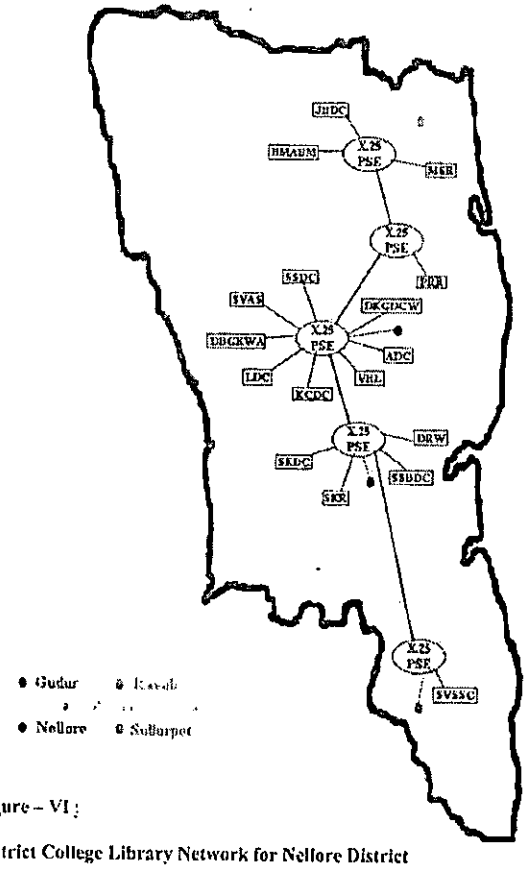


Figure – VI :

District College Library Network for Nellore District

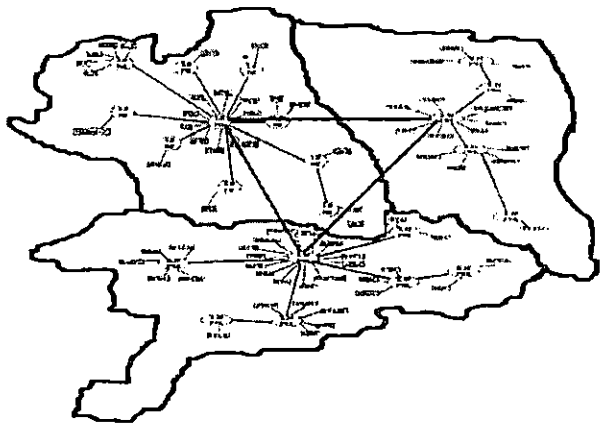


Figure – VII:

College Library Network for S.V. University Area

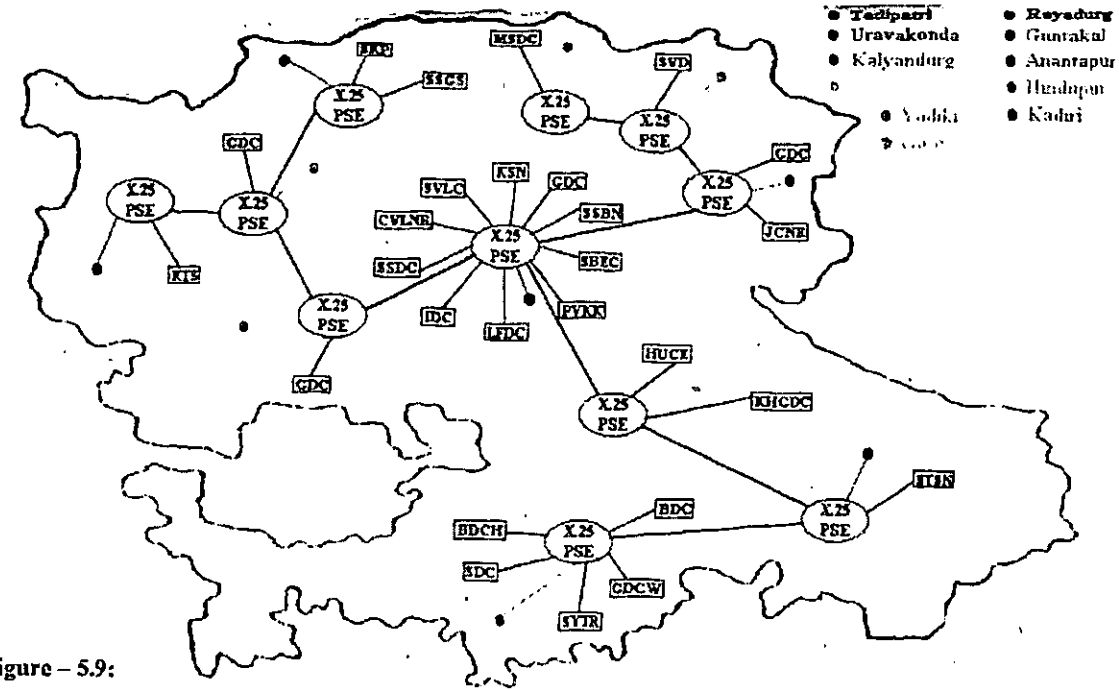


Figure – 5.9:

District College Library Network for Anantapur District

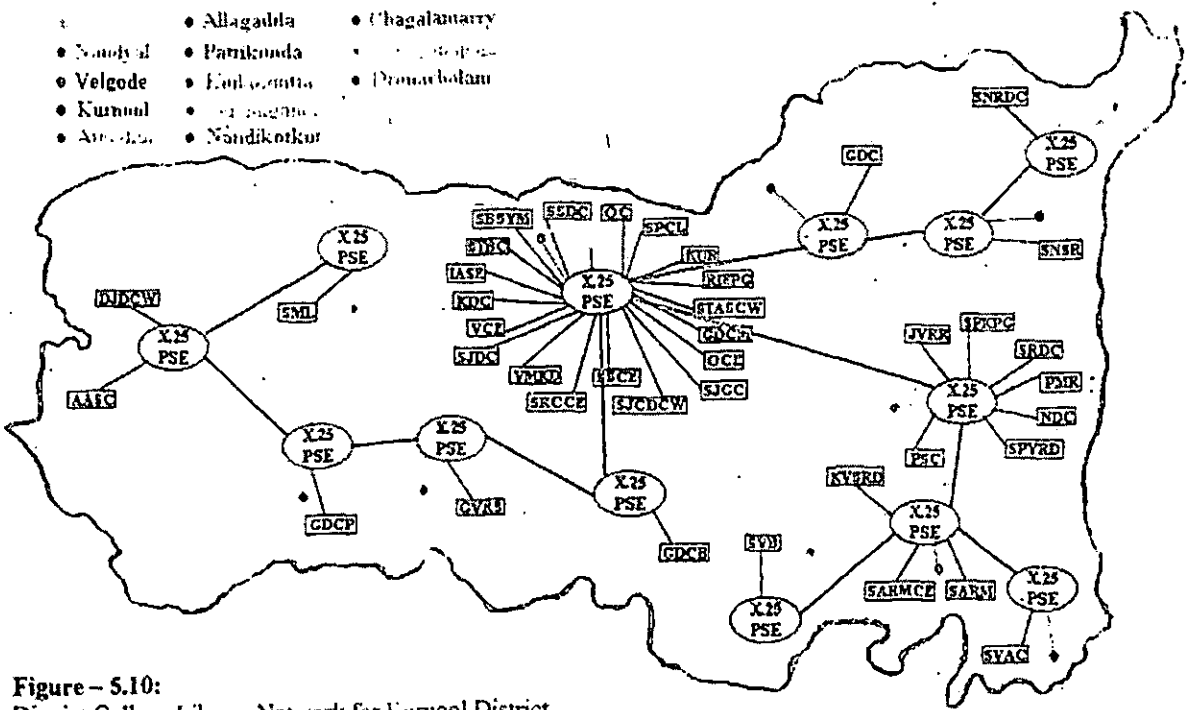


Figure – 5.10:
District College Library Network for Kurnool District

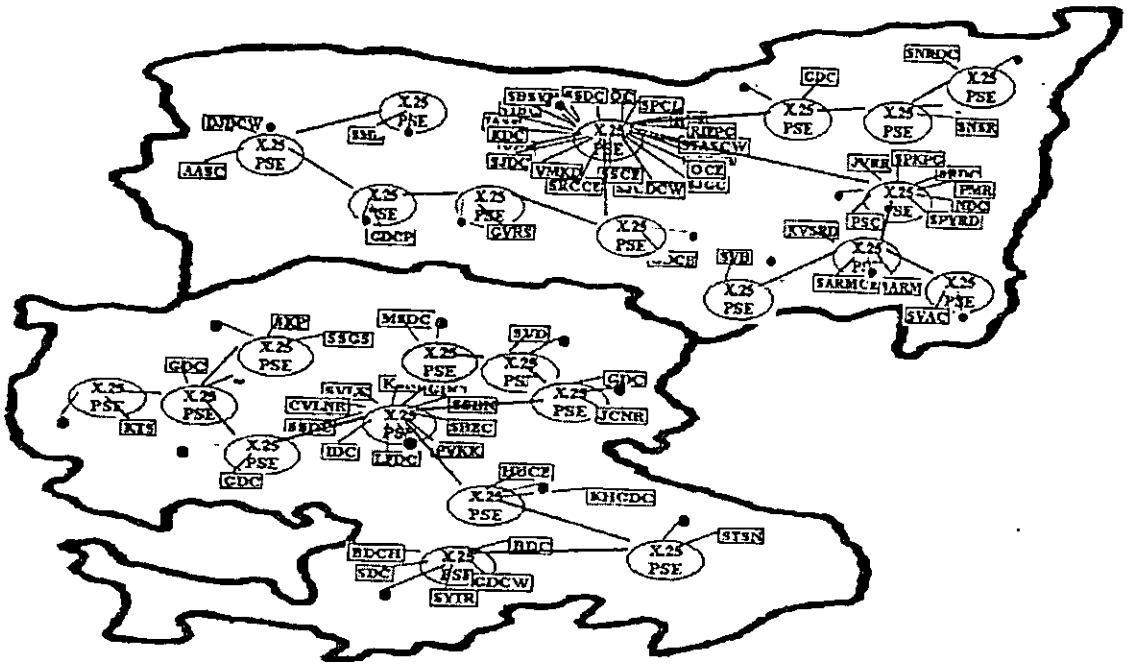


Figure – 5.12: College Library Network for S.K. University Area

Implementation plan

Successful implementation of the proposed plan for college library automation depends upon the following factors:

1. Having the minimum computer facility for each college libray,
2. Interest of the librarian and his/her skills to maintain and develop computer in the college library,
3. Collection context and methods of database creation,
4. Reliable telecommunication facilities such as phone and Internet connectivity, and
5. Minimum infrastructure such as accommodation, furniture and equipment.

Implementation of the proposed plan for college library automation is based on the following conditions:

1. Introduction and development of computer culture among readers i.e. students and staff of the college.
2. Creating awareness about the benefits of resource sharing among college libraries, the university library and information resource centers at the national and international level.
3. Keeping to minimum and within the reach of students and teachers the cost of information (or) the cost of service charges so as to encourage their use of library automation and networking to have information access.

The plan may be implemented in three phases, as shown below:

Phase I of Implementation:

1. Establishing computer in the college library,
2. Acquiring suitable library software,
3. Data conversion,
4. Establishing offline queries through CD's,
5. Developing computer culture among students, teachers and staff of the college library,
6. Obtaining Internet connectivity through the DOT,VSNL,etc.

Phase II of Implementation:

1. Setting up the central host to establish city college library network,
2. Procurement of hardware required for the network and site preparation for each individual college library,
3. Creation of level databases,
4. Establishing network connectivity to all college libraries situated with in the district.

Phase III of Implementation:

1. Connecting the district hub with the university library within the jurisdiction.
2. Conversion of offline query to online query for the users of libraries which have machines set up connected to the network,
3. The automation of the college libraries can be undertaken as one network affiliated to each university, and the necessary training facilities may be extended from time to time by the university concerned.

This will become a full – fledged college library network of a university.

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Bioinformatics Research in Kolkata: Development of A Prototype Model Knowledge Portal

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ABSTRACT

Bioinformatics is one of the most challenging interdisciplinary thrust areas of study and research today. As because this new area of research has opened a new paradigm of solving many crucial and complex problems ranging from of genetic engineering to cancer biology along with extremely critical mapping of human genome [1][4]. As this is an area of interdisciplinary nature the KM (Knowledge Management) on Bioinformatics is also a very complex task as one has to take care a lot of subject domains from computational algorithms to genome data. Here in this paper an effort has been made to gather and link information resources like institutional resources, database & software resources, human resources and academic programmes on bioinformatics with special reference to Kolkata. And the whole domain of resources can be maneuvered from a single interlinked window of several web pages.

Keywords: Knowledge Portals, Web Portals, Knowledge Management, HTML, Servers, Bioinformatics, Databases, Softwares, Algorithms, Genome, Computational Biology, Protein Structure, Informatics, File Management.

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Emergence of Clinical Librarians and Their Role in the Internet Era

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ABSTRACT

The paper deals with the evolution of Clinical Librarian in the Modern times. It also emphasis the need for Clinical Librarians in India when compared to developed countries. The qualities, knowledge, skills, required by the Clinical Librarian are described. The roles and functions of Clinical Librarian are dealt at length.

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Human and Technical Approaches to Knowledge Management in Library and Information Resource Centers: Problems and Prospects in Bangladesh

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ABSTRACT

Knowledge is the sum of information conserved by human being with a full capturing over managerial aspect for using with experience and action through humanized and technological manner. Knowledge management is organization of information as knowledge for using when and where needed for research and development. It has a universal character for the sake of common use and representing in an equal manner. Unified management system and application of humanware and technoware is the main concern of the paper for capturing, organizing, and retrieving information, evoking notions of data mining, text clustering, databases, and documents. That must be as simple as user-friendly for maximum use of information i.e. knowledge properties and maximum benefit of mankind and civilization. It is essentially urgent for designing knowledge management systems to consider the human and social factors at play in the production and use of knowledge. We are with the approaches to designing and problems towards socially informed knowledge management systems, social computing and knowledge socialization in the library and information centers in Bangladesh.

Bangladesh badly needs information processing for proper management of knowledge as it is on the roadmap of development. Limited resources with proper management in light of knowledge and techniques in development line can break through a positive change with prosperity in Bangladesh.

Knowledge

Knowledge is defined (OED) variously as (i) expertise, and skills acquired by a person through experience or education ; the theoretical or practical understanding of a subject, (ii) what is known in a particular field or in total; facts and information or (iii) awareness or familiarity gained by experience of a fact or situation. Philosophical debates in general start with Plato's formulation of knowledge as "justified true belief". There is however no single agreed definition of knowledge presently, nor any prospect of one, and there remain numerous competing theories. Knowledge acquisition involves complex cognitive processes: perception, learning, communication, association and reasoning. The term *knowledge* is also used to mean the confident understanding of a subject with the ability to use it for a specific purpose.

Reliable Knowledge

In *An Introduction to Logic and Scientific Method* (1934), Morris R. Cohen and Ernest Nagel reviewed the pursuit of truth as determined by logical considerations. They reviewed ways of eliminating doubt and arriving at stable beliefs or reliable knowledge, such as:

- The method of authority
- The method of intuition
- The methods of experimental inquiry:
    - Types of invariant relations
    - The experimental method in general
    - The method of agreement
    - The method of difference
    - The joint method of agreement and difference
    - The method of concomitant variation
    - The doctrine of the uniformity of nature

Knowledge Management

Knowledge management is a management theory which emerged in the 1990s. It seeks to understand the way in which knowledge is created, used and shared within organizations. A significant part of Knowledge Management theory and practice aligns two models: (i) the_DIKW model, which places data, information, knowledge and wisdom into an increasingly useful pyramid. (ii) Nonaka's reformulation of Polanyi's distinction between tacit and explicit knowledge. An objective of mainstream knowledge management is to ensure that the right information is delivered to the right person just in time, in order to take the most appropriate decision. In that sense, knowledge management is not only interested in managing knowledge but to relate knowledge and its usage also including organizational memory systems and mode of narrative forms of knowledge exchange and communication. Knowledge

management leads to management of information and communicate as required when and where purposively. Organizational learning, memory, and expertise for restructuring to manage information has received increasing attention over the last decades.

The conception of knowledge management is primarily as a problem of capturing, organizing, and retrieving information, documents, and data mining. Knowledge is composed of facts that can be stored, retrieved, and disseminated with the context of facts embedded and concern to the quite different contexts of usage. In this view of recent claimed, knowledge management is getting of right information to the right people at the right time in a comfortable means and expense of time, money and energy.

No denial of the importance of factual knowledge and the usefulness of information technologies, we believe that there are many issues that are of critical importance to bring forward a set of results—ranging from basic research findings to practical techniques very relevant to knowledge management, even as they are at risk of being left out of the Knowledge management. It closely involves at the human and social factors that are involved in the creation and communication of knowledge offering a unified knowledge management framework and techniques with approaches.

Notions of Social Research and Techniques In Knowledge Management

Knowledge is bound up with human cognition, and it is created, used, and disseminated in ways that are inextricably entwined with the social process. It is a vital part of any piece of knowledge management to acknowledge the doubts and missing pieces information or knowledge that sometimes creates puzzle in the service points. It may lead to create confusion even with valid piece of knowledge in hands.

The message of provision of the right information is concerns to presentation and communication of knowledge that is obtained and already captured within the reach. In the field of research and development specially social and scientific fields, information retrieval and referral service is essential in knowledge management. In the developing countries the necessity of right and access to right information is a burning question as the means and resources are very limited though research for development placed a high priority for well being of the nation and civilization. Resource sharing and savings in time, resources and energy, knowledge can take place in those nations by choosing a unified system of knowledge management tools. Online and union cataloging tools and free access to others treasury with a normative

and legal basis is a must. Clearly structured hub sharing for this purpose is an essential. Local and broadband network with backup or alternative facility should be introduced immediately. All branches and disciplines of knowledge and sub lines must be within the process for entrance of knowledge and intellectual properties. In an article "Suggestions for Teaching the Scientific Method" published in the March 1961 issue of *American Biology Teacher*, Dr. Kenneth B.M. Crooks suggested as:

1. Curiosity
2. Is there a problem
3. Get the evidence
4. Attributes needed
5. Weigh all evidence
6. Make the educated guess (hypothesis)
7. Challenge the hypothesis
8. Get a conclusion
9. Suspend judgment
10. Deductive reasoning

Communicating knowledge

Hence the transfer of the symbolic representation can be viewed as one ascription process whereby knowledge can be transferred. Other forms of communication include imitation, narrative exchange along with a range of other methods. There is no complete theory of knowledge transfer or communication.

While many would agree that one of the most universal and significant tools for the transfer of knowledge would be the different systems of writing argument over the usefulness of the written word exists however, with some scholars skeptical of its impact on societies. Andrew Robinson also highlights, in his work "The Origins of Writing", the possibility for writing to be used to spread false information and there for the ability of the written word to decrease social knowledge (Robinson, Andrew (2003) "*The Origins of Writing*" in Crowley and Heyer (eds) Communication in History: Technology, Culture, Society, Allyb and Bacon, Boston pp 34). Some methods of generating knowledge, such as trial and error or learning from experience, tend to create highly situational knowledge.. Knowledge generated through experience is called knowledge "a posteriori", meaning afterwards. The knowledge prior to any experience means that there are certain "assumptions" that one takes for granted.

Partial knowledge

In most realistic cases, it is not possible to have an exhaustive understanding of an information domain, so then we have to live with the

fact that our knowledge is always not complete, that is, partial knowledge that may be seen in following forms:

- Analytic proposition/synthetic proposition
- A priori/A posteriori
- Belief
- Berli declaration on open access to knowledge in the science and humanities
- DIKW
- Epistemic logic
- Epistemology
- Figurative system of human knowledge
- Institutional Knowledge
- Intelligence
- Institute as an unconscious form of knowledge
- Knowledge capture
- Knowledge creation
- Knowledge discovery
- Knowledge engineering
- Knowledge Management
- Knowledge relativity
- Knowledge representation
- Learning
- Metaknowledge
- Philosophical skepticism
- Procedural knowledge
- Propaedia e.i. outline of human knowledge
- Propositional knowledge
- Tacit knowledge
- Theoretical knowledge
- Thruth
- Knowledge is power
- Objectivist epistemology

Human intelligence and Knowledge

The prevailing view of science held that the world was, in principle, knowable and predictable; that the universe, including human beings, consisted of essentially complex that underlies the notion that an important part of knowledge management is getting access to the "right knowledge." Considerably the more complex picture of knowledge visible to the *Products* of mental operations: Units, Classes, Relations, Systems, Transformations, and Implications. There were different processes *Operations* that could be performed: cognition, memory, divergent thinking, convergent thinking, and evaluation. Finally, there

were different types of *Content*: Figural, Symbolic, Semantic, and Behavioral. The scientific community reacted by declaring that only objectively observable phenomena should be used in building a reliable understanding of mental processes; today, in the wake of the failure of the behaviorist project, there is greater openness toward subjective forms of knowledge. Although it is clear that some kind of "self-knowledge" is essential for people to behave intelligently individuals differ on how such knowledge is best viewed.

Communication and learning

Knowledge is not so simple as our ways of talking about it assume, neither is the process of communicating it to others. As Brown and Duguid (www.research.ibm.com/jl/404/) quoting from the note of Michael Reddy calls" People regularly describe most communication technologies in conduit terms, talking of information as "in" books, files, or databases as if it could just as easily be "out" of them. We ask or are asked to put ideas "down on paper," to "send them along," and so forth. However, there is quite a lot of research that suggests that it is not just a matter of getting the right knowledge *to* people—people need to engage with it and learn it.

Social context of knowledge management

It is difficult to argue that knowledge management should not be concerned with getting information to the "right people," The common definition of knowledge management provides little insight into which people are the right people. People turn to a body of work—drawn primarily from the social sciences and domain-oriented disciplines like Computer-Supported Cooperative Work (CSCW)—that provides some interesting views on the social contexts both with and without technology within the social factors that seem to be important in supporting knowledge work. It involves delivery of information to a person, or to a set of people, is missing quite a lot.

In the same way, than knowledge as isolated, context-free facts that could be "in" documents or databases, and straightforwardly transferred into people's heads that knowledge is bound up with human intelligence, shaped by social assumptions, and requires active engagement on the part of recipients if it is to be taken up the HCI (human-computer interface) and CSCW literatures, demonstrate the pervasiveness of human and social factors in the realm of knowledge management.

In an *Information Week* article, Jeff Angus and Jeetu Patel describe a four-process view of knowledge management that we have put into a table:

Major process	Involved activities
Gathering	Data entry OCR and scanning Voice input Pulling information from various sources Searching for information to include
Organizing	Cataloging Indexing Filtering Linking
Refining	Contextualizing Collaborating Compacting Projecting Mining
Disseminating	Flow Sharing Alert Push Profiling Bibliometrics Technical and professional writings

Knowledge management plan involves a survey of corporate goals and a close examination of the tools, both traditional and technical that is required for addressing the needs of the clients. The challenge is to select or build software that fits the context of the overall plan and encourage employees to share information.

A dramatic change in this field is visible in Bangladesh but it is hardly found the uniformity in line of processing and delivering of information/knowledge to use purposefully. Bangladesh faces the problems of mismanagement and wastage of time, money and energy and there occurs a great system loss.

Techniques in practicing for creating and communicating knowledge

Knowledge management tools can be designed to help with various processes in the creation of new knowledge that could be feasibly supported by technology including: dialog, (www.research.ibm.com/knowsoc/). Computer aided and manually operated tools are in use in Bangladesh. New generation of library, information and knowledge management is taking the opportunity for changing the managerial operations toward technological aspect.

Expressive communication

Communication is central to any expressive, complex, modern organization. Instrumental communication is that which is necessary for accomplishing tasks related to the immediate organizational goals. It is typically supported by specific forms and media, for example, job offers, requisitions, ratings, invoices, RFPs (requests for proposals), contracts, formal award certificates, and so on.

Bangladesh context: problems and prospects in Knowledge management

Problems	Causes behind	Prospects in line	Course of actions
Education and manpower development	Only university of Dhaka and Rajshahi and 16 institutes and 11 teachers' training colleges under the National university in public sector out of 29 universities and the university North South, Darul Ihsan and Royal in private sector out of 55 universities in Bangladesh are providing course of studies on information and knowledge management.	All universities and colleges in public and private sectors can take the matter for human development and produce suitable manpower in this field of information and knowledge management.	Ministry of education, directorate of secondary and higher education and university grants commission of Bangladesh must give proper instructions and guidance with policies to the concern authorities.
Training and career planning	Absent of the pre-service, on job, in-house, orientation, higher and foreign training for the library and knowledge management professionals in Bangladesh.	Introducing of training and career planning programs must be given top priority for proper management and output in the field.	Concern ministries and agencies must pass necessary office orders in making the training and career planning a compulsory for the professionals of library, information and knowledge management.
Job satisfaction	No promotion and development of position in the service though most of the employees have required qualification and training. Frustration is also among them for depravedness.	Library and information, knowledge management professionals should be given opportunity like other trades in Bangladesh for motivating and pushing them	Equal importance and treatment must be given and practiced by the higher authority equipping Library and information, knowledge management professionals with updated knowledge, training and skills.

		contributing to the well being of the countrymen through research and development.	
Barriers and threats	Socio-cultural, economic, bureaucratic, professional and other community threats	Establishment of tolerance, harmony for development policy and culture	Communication for building understanding trust and bridge among the groups and run together towards development.
Management	Managerial looks in this filed are almost generalities. Very often biased against understanding the importance and contribution of the library, information and knowledge management.	Recognition as the technical professional to the managers work in library, information and knowledge management field in Bangladesh	Declaration and Introducing and activating the library, information and knowledge management as the specialized management system by placing right man to the right position.
Policy	Absent of active policy for the library, information and knowledge management professionals for organizing information and knowledge in a unified system.	Unified library, information and knowledge management system and union cataloguing and resource sharing must be introduce and practice in Bangladesh.	Forming unified policy, commissioning forcedly, monitoring and updating active policy in a strict common manner for library, information and knowledge management.
Use of tools	Library, information and knowledge management centers in Bangladesh do no use same tools and procedures for processing, retrieval and providing services.	Use of unified tools for library, information and knowledge management can save money, energy and time for both managers and user clients	Declaration of unified library, information and knowledge management system and making available and proper training must be imparted by the legal and suitable authority
Resources	Constrains of financial and human resources are facts in managing library, information and knowledge in Bangladesh	Need for information and knowledge for research and development must be assessed and importance must be given accordingly.	National and institutional budget allocation and human capital development through education and training must be accounted.

Conclusion

Knowledge itself is a problem with both have and havenots. Management is another problem where human and technology are involved. These two phenomena must relate together through proper schemes/system that must be professional, proper timing through appropriate approach and effective means. The managers and clients of knowledge management must remember that only proper management of information/ knowledge and use of technologies in a uniform way can ensure the sustainable development through research and investigation with due attention and care.

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Information Technology and Research in Sciences in University of Hyderabad: A Survey

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ABSTRACT

This paper is about the Information Technology its use in IGM Library and the Doctoral Thesis and Dissertation submitted during the pre Information Technology period 1980-1981 to 1884-85 as compared to the Information Technology period during 2000-2001 to 2004-05. The impact of I.T is seen in the literature produced. In Chemistry 82.60%, in Life Sciences 53.33%, in MCIS 74.4 % and in Physics 85.55% as presented in the tables.

Introduction

To find a solution to the existing problem, research is undertaken by applying scientific methods. The term Research may be defined as a "Careful critical enquiry or examination in seeking facts or principles; diligent investigation in order to ascertain something" It helps in examining the validity of old conclusions and purports to give new direction and a new insight into the existing problem. The purpose of research is to unfold the truth by systematic methods.

In earlier days various tools used in research were developed by manual method such as bibliographies, Current Awareness Service and Selective Dissemination of information. Today, the entire scenario is changed from man to machine. The computers are being extensively used with the advent of Information Technology in libraries.

All aspects of human life is affected due to the explosion of Information technology and library is no excuse to it. The application of Information

technology in various media resulted in generation of huge amount of information through the research in higher educational institutions.. Web access has become essential in mediating a digital world. The internet offers unparalleled reaches to scientists and researchers to trace new discoveries. As there is change in seeking information from digital resources than the print resources, the means of acquiring information is also changing. Libraries adopt new technologies to provide access to information beyond the walls of traditional libraries. The information is no longer confined to traditional sources like books and documents, the modern computer based facilities like Compact Disks (CD), the Internet are available in libraries to make extensive research. Information technology provides a wide range of tools and services for development of libraries and educational institutions thereby contribute to the production of knowledge.

Profile of University of Hyderabad

University of Hyderabad is a institute of post-graduate teaching and research in the country. There are eight schools of study with several departments. In science faculty there are four Schools of study i.e. the School of Chemistry, The School of Life Sciences, School of Mathematics, Computer and Information Science and the School of Physics. The school of Life Sciences has three departments viz. The Department of Animal Sciences, The Department of Plant Sciences and The Department of Bio-Chemistry.

Indira Gandhi Memorial Library (IGM Library)

Indira Gandhi Memorial Library is a central facility catering to the needs of all the Schools of the University. The library has over 3.0 lakh volumes of books and back volumes and subscribing to above 600 journals and magazines. It is providing access to over 17,000 e-journals of popular publishers like OUP, Royal Society of Chemistry, Institute of Physics etc and under UGC INFONET consortium in addition e-books. The library users can access the e-resources through the campus wide Local Area Network.

Information Technology facilities in IGM Library:

The library automation work was commenced in 1989 and the process of updating various aspects of IT was in vogue. Necessary infrastructure enabled the library to provide advanced IT services to the users. It subscribed to several CD-ROM databases from deferent departments, which strengthened the resources for research scholars. A flat bed scanner is used for data conversion from print media to machine readable to generate Selective Dissemination of Information and Current Awareness Service to promote research activities. The initiation of digital library began in converting on priority the Thesis and Dissertation

material into the digital media, the network users can access the full text databases. The process of putting on the web is in progress. Multimedia PCs with sound blaster cards, speakers, head phones are also in usage for Audio-Visual, CD-ROM, full text databases. It is also useful for lecture demonstration for recording voice.

Internet browsing is through the library computer center. The library has access to the on-line journals and databases subscribed by it. The access of internet to the ocean knowledge available for the research scholars. Library web page is available for access over the Internet and Intranet.

Objectives and Scope:
The study is conducted with the following objectives:

- To know the total number of Thesis and dissertations submitted to University of Hyderabad in all science subjects during 1980-81 to 1984-85, the Pre-Information Technology period year.
- The total research output in sciences during 2000-01 to 2004-05, during the application of Information technology period.
- To know the subject wise production of new knowledge during the pre- Information Technology period and the output with advent of Information Technology period to note the trend in the output.
- To record the percentage increase in the research, by taking into account the production of Thesis and dissertations.

The study is restricted to the School of sciences i.e. School of Chemistry, School of Life Sciences, School of Mathematics, Computer and Information Science and School of Physics since research output is highly seen with the experiments using resources on the web.

Methodology
The data has been collected from the Accession Register of Thesis and Dissertation maintained in Indira Gandhi Memorial Library, University of Hyderabad, and the Annual reports of the University of Hyderabad pertaining to the years 2000-01 to 2004-05. The data so collected has been tabulated subject-wise Percentages were calculated to note the trend in output which has been ranked.

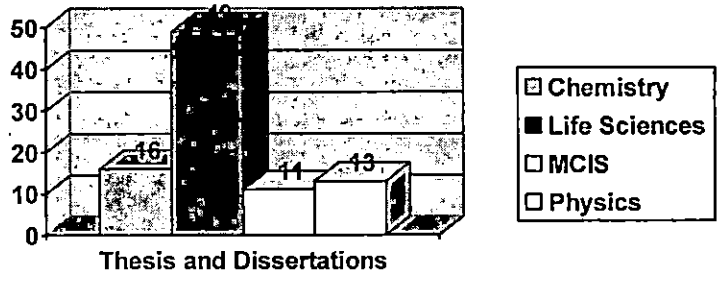
Analysis and findings

Table - 1

Research Output in Sciences during 1980-81 to 1984-85 subject-wise

S.No.	Subject	Thesis and Dissertations	Percentage	Cumulative Distribution	Cumulative percentage	Rank
1	Chemistry	16	17.97%	16	17.97%	II
2	Life Sciences	49	55.05%	65	73.02%	I
3	MCIS	11	12.35%	76	85.37%	IV
4	Physics	13	14.60%	89	99.97%	III

Research output in sciences during 1980-81 to 1984-85(period of 5 years)



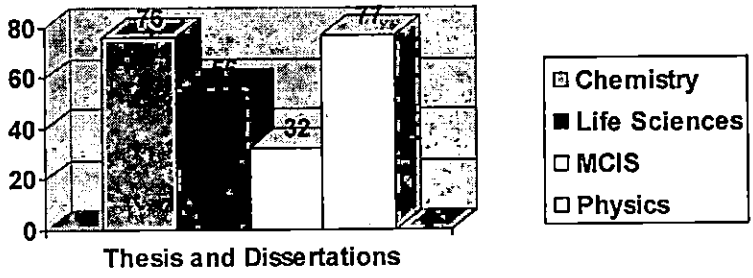
From the above table it is found that the output in sciences during 1980-81 to 1984-85 in Life Sciences is 55.05% with rank I, whereas the in MCIS, it is 12.35% with IV rank. Chemistry 17.97% with rank II and Physics with 14.60% with III rank.

Table - 2

Research Output in Sciences during 2000-01 to 2004-05 subject-wise

S.No.	Subject	Thesis and Dissertations	Percentage	Cumulative Distribution	Cumulative Percentage	Rank
1.	Chemistry	76	31.53%	77	31.53%	II
2	Life Sciences	56	23.14%	133	54.67%	III
3	MCIS	32	13.22%	165	67.89%	IV
4.	Physics	77	31.81%	241	99.70%	I

Research output in sciences during 2000-2001 to 2004-2005(period of 5 years)



The research out put in sciences for the period 2000-01 to 2004-05 is depicted in the above table and it is found that the Research output in Physics is being highest with 31.81% raked I, whereas MCIS with 13.22% rank IV. The remaining subject Life Sciences with 23.14% rank III and Chemistry with % rank II.

It is observed from the above tables 1and 2 that there is more research output during 2000-01 to 2004-05 (total 241) compared with the output of 1980-81 to 1984-85 (total 89) during which the improved and Information research facilities were not available like the various Information Technology applications.

Table – 3
Research Output in Chemistry subject

S. No	Period of research output	Total research output	Percentage
1.	1980-81 to 1984-85	16	17.39%
2	2000-01 to 2004-05	76	82.60%
3.	Total	92	99.99%

More research output is noticed during 2000-01 to 2004-05 with 82.60% compared with research output during 1980-81 to 1984-85 with 17.39% in Chemistry subject.

Table – 4
Research output in Life Sciences subject

S.No.	Period of research Output	Total research Output	Percentage
1.	1980-81 to 1984-85	49	46.66%
2.	2000-01 to 2004-05	56	53.33%
3.	Total	105	99.99%

Similarly, the output in Life Sciences subjects during 1980-81 to 1984-85 is 46.66%, whereas 53.33% during 2000-01 to 2004-05 which is comparatively more.

Table – 5
Research output in MCIS subject

S.No.	Period of research output	Total research output	Percentage
1.	1980-81 to 1984-85	11	25.58%
2.	2000-01 to 2004-05	32	74.41%
3	Total	43	99.99%

As far as MCIS is concerned, the research output is more i.e. 74.41% during 2000-01 to 2004-05 and 25.58% during 1980-81 to 1984-05.

Table – 6
Research output in Physics subject

S.No.	Period of research output	Total research output	Percentage
1.	1980-81 - 1984-85	13	14.44%
2.	2000-01- 2004-05	77	85.55%
3	Total	90	99.99%

And, in Physics subject, the research output is 14.44% during 1980-81 to 1984-85 and 85.55% during 2000-01 to 2004-05, which is comparatively more.

It is observed from all the tables that the research output of all the subjects is more during 2000-01 to 2004-05, the Information Technology period compared to 1980-81 to 1984-85, during which the manual method used in libraries by researchers.
Here it is important to mention that users make use of electronic & online resources extensively which is reflected in the output of research

presented in the above tables. There is a need to organize the theses and dissertations and put them on the web so that academic community is benefited. IGM Library has already initiated the digital library project in which all the theses and dissertations are digitized on priority and it is in the process of placing it on the web. Author, Title and Subject wise search is provided.

Conclusion

The proliferation of literature through WWW has made the information to be available on the desktop of the users through WAN and LAN. The Internet offers vast amount of information which is too much for the users. There is a need to organize them so that the unwanted information gets filtered and only the right information is received by the users. Every Library should also digitize important documents duly following the copyright and put them on the web for the use of academic community. New information about digital resources can be flashed in the front page of the library by pasting the URL of the site with the click of which new information can be viewed by the users. In the I.T information ever increasing, saving the time of the information seeker through the use internet and organized web resources. The improved facilities and the availability of various e-resources available on-line and the way researchers seek information resulted in good amount of research output.

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Knowledge Management and Collaborative Tools

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Knowledge Management and Collaborative Tool

"The only irreplaceable capital of an organisational process is the knowledge and the ability of its people. The productivity of that capital depends on how effectively people share their competence with those who can use it" –Andrew Carnegie "Knowledge is the only instrument of production that is not subject to diminishing returns"---J.M. Charles, 1927 Knowledge Management is a process, which converts the internal and external information of an organisation into actionable knowledge. Knowledge management has emerged as a key concern of an organization. Better management of knowledge within the organisation leads to improved innovation and competitive advantage. Knowledge management is the name given to the set of systematic and disciplined actions that an organisation can take to obtain the greatest value from the Knowledge available to it. 'Knowledge ' in this context includes both the experience and understanding of the people in the organisation and the information artifacts , such as documents and reports available within the organisation and in the world outside. It is the first and foremost a Management discipline that treats intellectual capital as a managed asset. In practices knowledge management often encompasses identifying and mapping intellectual assets within the organisation, generating new Knowledge for competitive advantage within the organisation making vast amounts of corporate information accessible, sharing of best practice and technology including Groupware and Intranets.

Figure 1.

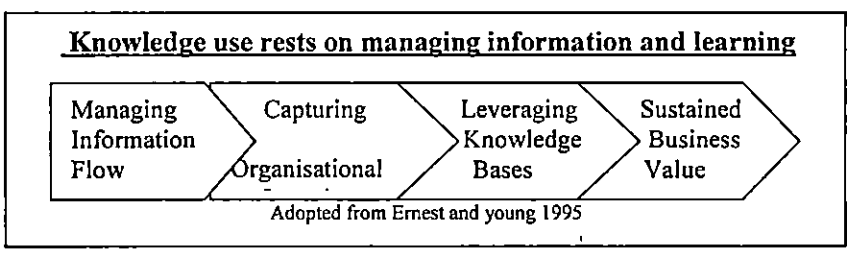


Fig.1 shows the relationship between these four components, indicating that Knowledge management is more than managing information flows. It rests on two foundations: exploiting the organisation's information and utilizing the application of peoples' competencies, skills, talents, thoughts, ideas, intuitions, commitments, motivations and imagination. To appreciate the challenges of knowledge management, we need to understand that knowledge is and how it gets transmitted. A useful way to think about Knowledge is an enriched information with insights into its context. The meaning of knowledge management is the purposeful management processes which capture often personal and contextual information that can be used for organisation's benefit. 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. Holm (2001) defines 'Knowledge management as, getting the right information to the right people at the right time , helping people, create Knowledge and sharing and acting on real information'.

David skyme adds, that 'Through there are numerous conceptual definitions of knowledge management, the following definition is based on a synthesis of a case material and interviews. "the explicit and systematic management of vital knowledge and its associates, processes of creating, gathering , organising, diffusion ,use and exploitation in pursuit of organisational objectives."

Explicit - organisation's benefits can be realized if it is explicitly managed.

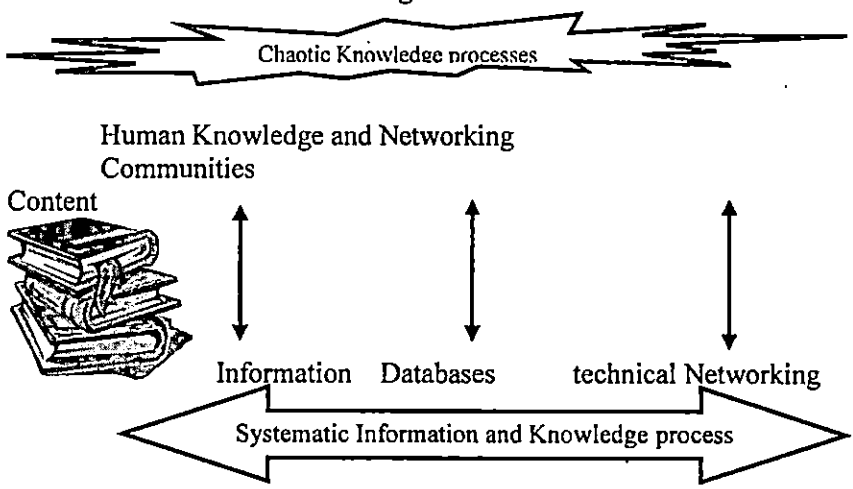
Systematic- this helps create consistency of methods and the diffusion of good practice. Systematization also lends itself to automation leading to additional efficiencies in handing explicit Knowledge.

Vital – Judgment must be applied on to which Knowledge is critical and therefore worth managing in a more formalized way.

Process -Knowledge Management is a set of activities with its own tools and techniques. Main processes are Knowledge sharing (of existing knowledge), Knowledge creation and knowledge conversion (innovation).

The essential elements of knowledge management is best viewed as two fold: (1) the management of explicit knowledge using techniques such as those used in the discipline of Information resources management. (2) creating the environment in which people can develop and share Knowledge ; a common approach for this is that of "communities of practice". The two core strands of knowledge management is depicted in the form of a diagram.

Figure-2



According to Nonaka and Takenchi (1995), much of the value of knowledge is created, as it is transformed between one type and other, from tacit to explicit and vice versa back and forth, in what they describe as an even evolving knowledge spiral that goes from individual tacit knowledge to organizational wide Knowledge.

In other words, to make some tacit knowledge explicit, and provide pointers to the knowledge worker/experts who will be able to put such knowledge into context and help those wanting to apply it.

David Skyme(2003) identified seven essential levers of knowledge management.

Customer Knowledge –the most vital Knowledge in most organisations.

Knowledge in processes –applying the best 'know how' while performing core tasks.

Knowledge is products and services – smarter solutions, customized to users' needs.

Knowledge in people – nurturing and harnessing brain power.

Organisational memory – drawing on lessons from the past or elsewhere in the organisation..

Knowledge in relationships- deep personal Knowledge that underpins successful collaboration.

Knowledge management assets- measuring and managing intellectual capital.

Knowledge management and the library

- KM puts technology into perspective and promotes innovation.
- KM abridges the loss of intellectual asset from retiring, downsizing, and leaving the organisation.
- KM reduces duplication of efforts of the knowledge workers.
- KM enhances users' and. organisational ability to think, to learn from innovations and experiences and to implement decisions.
- KM helps to take quick decisions in organisational meetings.
- KM assists individuals to access and managing knowledge repositories through computerized communication networks and documents.
- KM develops knowledge sharing culture in the organization and breaks communication barriers within the organization.
- KM assists to develop the framework of knowledge management system to share information quickly across the geographically dispersed units.
- KM increases productivity and establishes organization as leading one by providing knowledge more easily.

Freedom of information

Lack of information denies people the opportunity to develop their potential to the fullest and realize the full range of their human rights. Individual personality, political and social identity and economic capability are all shaped by the information that is available to each person and to society at large. The practice of holding information away from the public' creates 'subjects' rather than 'citizen' and is a violation of their rights. This was recognized by the United Nation in 1946, when the General Assembly resolved: "Freedom of information is a fundamental human right and touch stone for all freedoms to which the United Nations is consecrated in the Universal Declaration of Human Rights the right's status as a legally binding treaty obligation was affirmed in Article 19 of the "International covenant on civil and Political Rights which states: " Every one has the right to freedom -------- ---- to seek, receive and impart information and ideas through any media and regardless of frontiers". This has placed the right to access information firmly with in the body of universal human rights law.

The right to information underpins all other human rights. For example, freedom of expression and thought inherently rely on the availability of adequate information to inform opinion. The right to information is at the core of the human rights system because it enables citizen to more meaningfully exercise their rights. It is pertinent that access to information "is recognized as a **right because** it:

"The right to information holds within it the right to seek information as well as the duty to give information, to store , organize, and make it easily available and it is an aid to develop human personality". The duty to enable access to information rests with government and encompasses two key aspects:

(a) enabling citizens to access information upon request, and

(b) proactively disseminating important information.

Information and communication technologies allow people, anywhere in the world, to access information and knowledge almost instantaneously. Information is an important international instrument promoting public access to information. Library has encouraged to provide adequate access through various communication resources, notably the Internet to information. The access point to the extent possible provide assistance to users free and affordable access to open access journals and books. It encourages users in the libraries to use information and sharing of knowledge. To facilitate the ICT for all encourage research and promote awareness by offering different software models, and the means of their creation, including proprietary open source and free software in order to increase competition, freedom of choice and affordability and to enable all users, evaluate which solution is the best to meet their requirements. IFLA proclaims the fundamental right of human being both to access and to express information without restriction.. IFLA asserts that a commitment to intellectual freedom is a core responsibility of the Library and information science profession worldwide, expressed through codes of ethics and demonstrated through practice. Libraries serve as a gateway to knowledge, thought and culture. Libraries commit to offering their users relevant resources and services without restriction and opposing any form of censorship. Library and information services shall make materials, facilities and services equally accessible to all users. There shall be no discrimination for any reason including race national or ethnic origins, gender or age, disability, religious and political benefits.

Thus access to intellectual assets is vital. Simply mounting of information on-line is not enough, unless the knowledge management approach incorporate methods like sharing and collaboration which are vital to organizational performance.

Information access is an area of informatics and library science, which concerns enduring free and open access of information. Information access covers many issues such as copyright, open source, privacy and security. Open access can increase the impact of research and innovation through improved access to and rapid dissemination of research results. The Internet showed increase in the cost of journal price. This affects the access to information. The user pays for research, peer review (through reviews salaries) and journals (through library budget). Better search tools can help

researchers find information and progress in the new areas and collaborative tools can enhance the way in which researchers share information. Now-a-days electronic library service, a gateway to many services available over the Internet and the information stored on CD-ROM had increased significantly.

Free availability and unrestricted user" is the definition of information access. Budapest open access initiative puts it:" there are many degrees and kinds of wider and easier access to this literature. By information access to this literature means its free availability on the public for example, Internet, permitting any users to read, download, copy, distribute, print, search or link to the full texts of these articles, crawl them for indexing, pass them as data to software to use them for any other lawful purpose, without financial legal or technical barriers other than those inseparable from gaining access to the Internet itself. Open access is a property of individual works, not necessarily journals or publishers.

Knowledge Management Tools

Knowledge management is the deployment of a set of tools and techniques that are used to help organization, manage the two Knowledge cycles (Knowledge innovation cycle and Knowledge sharing cycle) more effectively. They can be conveniently grouped according to which part of the Knowledge cycle they augment (many tools can contribute to one or more phases). Though these are considered useful and interconnected knowledge cycles. Over time, the boundaries of individual tools blur (e.g. Groupware and internet, document management and information retrieval) and effective usage requires seamless interpretability and fluidity of information and knowledge flow.

Levels of an information technology infrastructure (non technical factor).

1. At the base level is the requirement that people should be able to connect into knowledge whenever & wherever they are.
2. At higher levels, there must be mechanism for threaded conversation and structured collaborative work.
3. As one move up through each layer, each of which depends on the below. More of the challenges are people and organisation rather than technology related.

The role of technology in knowledge management is to put the workers in touch with the knowledge they need to do their work effectively. In this regards technology plays a critical role. There is no single technology that takes care of all the knowledge management needs. The impact of each technology varies enormously from situation to situation. There are several technologies in many knowledge management programs, partly because they are generic and pervade many core

activities and processes .It is found that collaboration technologies have the most impact on developing and sharing organisational knowledge. They connect people to information and people to people on a global basis.. Continual advances in collaborative technology increase the opportunities available for competitive advantage through effective information management, for example Intranet, Internet, Groupware .In particular Intranet, Groupware and other collaborative technologies make it possible for more wide spread sharing and collaborative use of information technology convergence through open networking, using facilities such as the world wide web. It is not only external information, dissemination, but for sharing information internally. So sharing is a hallmark of resourceful organisation.

Successful implementation depends on giving appropriate focus to the non-technical factors such as human factors, organisation processes and culture, the multi-disciplinary skills of hybrid teams, library managers and the already existing knowledge repositories providing well-structured access to critical expertise. Understanding the difference in human interactions, is necessary to ensure the appropriate technologies to meet interaction needs.

There are three primary ways in which humans interact: conversations, transactions, and collaborations:-

Conversational interaction is an exchange of information between two or more participants where the primary purpose is 'the interaction'. There is no central entity around which the interaction revolves.

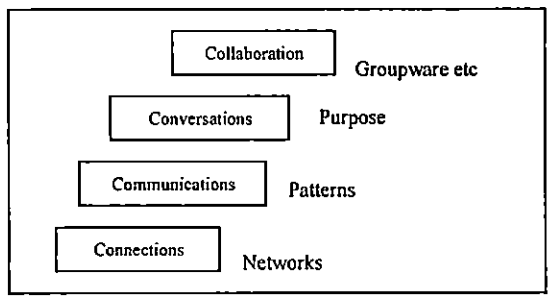
Transactional interaction are most effectively handled by transactional systems that manage state and commit records for persistent storage. .

Collaborative interactions means the participants' relationship which alters a collaboration entity (i.e., the converse of transactional). The collaboration entity is in a relatively unstable form. i.e. the development of an idea, the creation of a design, the achievement of a shared goal. Therefore, real collaborative technologies include the use of Intranet. (internal Internet) or Groupware for rapid information access.

The role of ICT in knowledge management is the role of collaborative technology infrastructure. Figure-3 shows, Connections, communications, conversations and collaboration are complex layered elements of collaborative technological infrastructure. Not only are these technology layers, but they are process layers as well. The human and organizational factors become more important the higher the layer. If knowledge support architecture is defined in terms of those levels (connections, communication, conversation and collaboration level), it clearly identifies the potential an organization has to effectively create and share knowledge.

Figure-3

Layered collaborative technological infrastructure



"We know that together our collective knowledge and experience is more powerful than anyone individual's knowledge and experience"—says Susan Hanley from knowledge centers at American Management systems.

Any technique and methods which sustain knowledge growth and distribution are key to the success of today's organization. Computer based tools are significantly boosting the effectiveness of knowledge management, though the tools of knowledge management consists of 70% services and 30% technology tools boosting the effectiveness of knowledge management. Record or document management threaded discussions, and other mechanisms designed to capture the efforts of many into a managed content environment are typical of collaboration technologies.

Knowledge sharing is " Knowing what we know " creating the environment in which people can develop and share knowledge; a common approach for this is that of "communities of practice." knowledge sharing cycle shows the process associated gathering and disseminating existing knowledge, having a knowledge repository as its focus point. Knowledge innovation cycle represents a progression idea creation (unstructured Knowledge) into more structured and reproducible Knowledge embedded within processes, products or services. (structured)

Figure-4
SHARING CYCLE

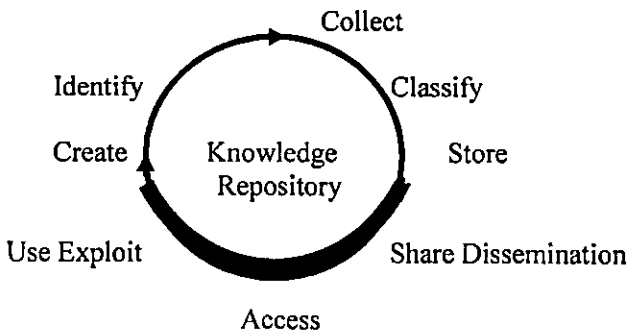


Figure-4 In the knowledge sharing cycle the knowledge management processes are existing knowledge, collected either on a routine basis or as needed then recorded in a knowledge inventory or knowledge map. Then the knowledge is classified and stored, (organised) using classification schema. Information may then be sent routinely to those people who are known to be interested in it. This is information 'push'. Meetings and events act as vehicles to share tacit knowledge .Information is made easily accessible from a database for example over an intranet; users, access it as they need it-this is information 'pull'. The knowledge is a used as a part of a work process. The above cycle shows the processes associated gathering and disseminating existing knowledge having repository as its focal point. A useful form of knowledge that can result from this cycle is meta knowledge 'Knowledge about Knowledge'. Thus some of the most useful Internet or Intranet pages are those that hold directories and indexes of what other information is available. A complementary approach is to draw people together in communities of practices, so that people can share their expertise. Frequent communication and collaboration increase the amount of information and knowledge shared, organizational leverages, individual talents into collaborative achievements through networks of people who collaborate.

Groupware Groupware is the name given in the mid 1990s to collaborate technologies (computer conferencing, bulletin boards, discussion groups, instant messaging etc.) that gives strategic benefits to those who implement it. Groupware is not new. It has existed in various guises since computers first enabled different users to share data files. What is new is, the way that Groupware is now available on networked PCs with window interface through products such as lotus notes. Groupware is therefore more accessible and easier to use by non-information technology professionals.

Groupware is sometimes seen as a contraction of **group** working Software. It is networked computer **software** that lets different people coordinate their work activities. Originality applied exclusively to computer conferencing (where users add their own 'conversational 'notes to topics of shared interest).

Groupware is software and hardware for interactive, shared, environments.

Interactive indicates Groupware application appear to support real-time interaction.

Shared indicates that two or more participants interact with one another in such a manner that each person influences and is influenced by each other person.

Environment includes software and hardware that sets the context for interaction.

Hardware can include specifically designed furnishings and architectural spaces that are considered integral to correct utilization of a given software application. It is a **software** with built in calendar, scheduling, e-mail, web navigational tools which support collaborative activities. A Groupware application requires more specific powerful application can adapt to or overcome limitation of their environments.

An objective of Groupware is to increase the number of persons that can" interact as a group". Robert Johansen defines Groupware as "specialized computer aids that are designed for the use of collaborative work groups".

Peter and Johnson Lenz coined the term Groupware in 1978 as "intentional group processes plus software to support them." Some definitions of Groupware include the notion of a common goal. A complete Groupware infrastructure has three dimensions: communication (pushing or pulling information out into an organization), collaboration (shared information) and coordination (delegation of task).

The critical issues of Groupware networking computers is easily compared to networking people. People is the most important part, one has to understand people and the dynamics of working in teams to understand how to implement Groupware.

1) People issues : Groupware projects fail when the organisation tries to use them after downsizing to replace people and to improve productivity. Groupware will only succeed if employees are willing to use it and if they feel that they have the organisation's support.
2) Sharing was the basis for introducing Groupware. It is premised on the concept of sharing. So the foremost is, retrain people.

People understand the concept of using together and collaborating.

Groupware organisation must be able to provide right information to the right persons at the right time in the right format, any where with in the extended organisation. In order to manage this process effectively, certain strategies and technologies are required to create an enabling environment. The technologies that support effective structures and methods for communication, co-operation, and collaboration with in the organization to deal with distributed environment must ensure reliability, security and practicability. One such collaboration knowledge management tool is **Groupware**. The goal of the collaboration groupware is to identify and integrate critical information such as user requirements and expectations, complaints as well as promoting 'communities of practices' and integrating uses and knowledge management into innovation process i.e. generate knowledge , represent knowledge , store knowledge , access knowledge , transfer knowledge . In other words building frameworks or structures to enable closely connected networks of people. Such networks of individuals are known to generate more knowledge of a high quality than any individual case. In the broadest sense, groupware refers to any computing technology that help groups work better collaboratively over digital media, facilitate the exchange and sharing of information. The same can support groups of people engaged in a common task and that provide an interface to a shared environment.

Groupware could and should be used to enhance collaboration with external partners-users and managers. Groupware is computer network technology designed to boost the productivity and facilitate communication of work groups. This technology is usually based on shared environment interface and used for computer supported cooperative work (CSCW). It supports groups of people engaged in a common activity or project and enables users to communicate, cooperate, coordinate, solve problems, etc. Groupware should consider possible roles of people play in cooperative work, how people behave in groups and how aspects of networking technology affect a user's experience. The very nature of groupware encourages free flow of thinking and ideas, and does not constrain inputs to structured data-bases. when organization become more diffuse (through regional, national or multi-national expansion) collaboration between dispersed groups of users can become problematic.For growing organization to best utilize the knowledge and skills held within a decentralized workforce, it is necessary to implement technologies and strategies that allow employees to communicate and collaborate across geographical boundaries.

The development of communication technologies such as e-mail, video conferencing and the Internet has led to the development of collaborative software that facilities the sharing of knowledge and information between these geographically dispersed groups of people, allowing them to work together towards the attainment of a single goal.

Groupware can be divided into three categories depending on the level of collaboration-communication tools, conferencing tools and collaborative management (Co-ordination) tools.
Communication can be though of as unstructured interchange of information.e.g. phone call. Conferencing (or collaboration level, as it is called in the academic papers that discuss these levels) refers to interactive work toward a shared goal.
Co-ordination refers to complex interdependent work toward a shared goal. The best metaphor for understanding this is to think about a symphony orchestra; everyone has
to do exactly the right thing at the right time-but everyone is doing something different in order for the whole work effort to get. That is co-ordinate work.

Collaboration Software Collaborative software, also known as Groupware, is the term used to describe a range of software applications designed to allow multiple users to collaborate on related tasks on either local or remote servers. Groupware is the basis for computer supported cooperative work. It integrates a number of planning, scheduling and tracking activities into a single software package that links collaboration with coordinated execution to reach the goal of seamless, transparent, hassle free collaboration between groups. It has been suggested that (Metcalfe's law)-the more people who use samething, the more valuable it becomes-applies to such software.:

- Provide access to all documents and tasks securely via internet to internal team members, based upon their roles or individual permissions.
- Maintain common and individual to do lists, projects and schedules to simplify the management of group activities.
- Make tasks assignments and status visible and transparent by automatically sending and receiving appropriate notifications.
- Build and work a visible action plan to achieve assigned goals and objectives, helping the organization be more strategic, less active in overall performance.
- Organization coordinate work effort, with reduced slip-ups, mistakes, errors due to miss-communication or verbal direction.

Collaboration Software Types
Collaboration software comes in a variety of types and forms, including:

- Web-based collaborative tools (requires Internet access)
- Desktop collaborative tools (requires Intranet access)
- Electronic group calendars (make easier to schedule events and meeting with multiple people, and automate reminders and alarms for group members)
- Workflow or project management systems (help manage tasks, projects and associated documents)

Groupware Types

Groupware is divided into two categories related **to time:**

"Synchronous" (or "Realtime") Groupware allows to work simultaneously.

"Asynchronous" Groupware allows to work at different times.

These categories are divided into two groups related **to place:**

"Collocated"("Face-to-Face" Groupware allows to work together in the same place .

"Non-collocated" ("Distance") Groupware allows to work in different places.

Groupware Workflow Groupware supposes highly structured communication between users. Though Communication structure may differ from organization to organization. Groupware helps to set a common workflow within the organization. A workflow system based on the collaborative management of the tasks and documents within the knowledge based organizational processes.

Groupware Privacy When setting up a Groupware, it's important to specify what information is private and what is shared. Simultaneous access by everyone to everything is a key feature of Groupware, but sometimes it can be vulnerable and lead to a mess. So groupware administrator should take care that besides common folders with organization's tasks, users have their personal folders that nobody else can see. This is also true for organization tasks that should remain secure against attempts of not authorized users to see them.

Groupware Applications:

While these tools are essential for decentralized enterprises, collaborative software can also be of great use in the creation of collaborative media knowledge bases. By allowing multiple users to access and modify a knowledge base (millions of users, in the case of public knowledge base such as Wikipedia), it becomes possible to organically collect the explicit knowledge held within its contributors.

- **VIP Task Manager** is synchronous Groupware for task management. This client/server software allows planning, scheduling, sharing, tracking and reporting tasks, simultaneously

access the common database though Local Networking (LAN) to see, add, edit and delete their team or personal tasks, if they are granted appropriate permissions. It allows authorized users to simultaneously access and share.

- **VIP Team to do list** is asynchronous Groupware for task management. It is single user system that allows team leader to create, manage, and send tasks to team members by e-mail or publish to-do lists on organization

One of the greatest advantages of collaborative software is its provision of identical data to all members, allowing enhanced problem solving capabilities to the group. With appropriate version management controls, users can gain access to only the most recent modifications to the shared data, allowing them to quickly make decisions on the best way to move forward.

Centralized Data Storage and groupware

Since Groupware rewires multiple users to work simultaneously on the same set of data it is important that there be a centralized data storage facility to allow for the management of a master copy. Users will typically be allowed access to the latest version of this data each time they connect to the application, and they will be required to check in (i.e. submit their latest modifications) each time they sign off.

Intranet

INTRANET is a private computer network that uses intranet protocols, network connectivity to securely share part of an organization's information or operation times with its employees. The term first appeared in print on April 19, 1995 in Digital News and review in an article authored by technical editor Stephen Lawton. An intranet is the first activity of knowledge programs. It makes it easy for users to access "any information, anywhere, at anytime .It provides a wealth of information to the users world wide. Intranet is not necessarily be any access from the organisation's internal network to the internet itself. When such access is provided usually through a gateway with a firewall, along with user authentication, encryption of meassages and often make use of virtual private networks. Through such devices and system off-site, staffs can access organisation's information, computing resources and internal communications. Intranet is an internal network based on the Internet and www technologies.

Increasingly Internets are being used to deliver tools and applications. It is used as culture change platform for example large number of employees discussing key issues in an online forum could lead to new ideas. It keeps out the unauthorized users out.

Advantages

Intranet can help users to locate and view information faster and user applications relevant to their roles and responsibilities. With the help of a web browser interface such as Internet Explorer users can access data held in any database the organisation wants to make available, anytime and subject to security provisions from any where with in the organizations. It increases employees ability to perform their job faster, more accurately, and with confidence that they have the right information .It also helps to improve services provided to the users. By using hypermedia and web technologies, web publishing allows 'cumbersome' organization's knowledge to be maintained and easily accessible throughout the organization. e.g. library policies, library standard, benefits documents can be accessed using common internet standards(Acrobat files, flash files). By doing this each online recent copy of a document is always available to users using Internet.

Time

With Intranets, organisation can make more information available to employees on a "pull" basis i.e. user can link to relevant information at a time which suits them rather than being deluged by e-mails.

3) **Communication**: Information can serve as powerful tools for communication with in an organisation, vertically and horizontally. From communication, it is useful standpoint to communicate strategic initiatives that have global reach throughout the organisation.

4) **Cost-effective**: users can view information and data via web- browser rather than maintaining physical documents such as procedure manuals, internal phone lists and requisition forms.

5) Promote common **organisational culture**: every user is viewing the same information within the Intranet.

6) **Enhance collaboration**: With information easily accessible by all authorized users, teamwork is enabled.

Planning and creating an intranet in the library system the actual implementation would include steps, such as :

a) User involvement to identify users' information needs
b) Setting up a web sever with the correct hardware and software
c) Setting up web server access using a TCP/IP network.
d) Installing the user programmes on all required computers
e) Creating a homepage for the content to be hosted.
f) User involvement in testing and promoting use of intranet.

Information and communication technologies are an important ingredients of every successful knowledge management program. Example a new generation of artificial intelligence solutions, new flavours of document management system and various collaborative technologies such as Internet. Successful implementation depends

always on giving appropriate focus to the non-technical factors such as human factors, organisation processes and culture, the multi-disciplinary skills of hybrid teams and library managers and the already existing knowledge repository of prior learning providing well-structured access to critical expertise.

Role of Intranets in knowledge sharing : The internet a global network applied within an organisation. Its low cost and ability to work on many machine types has allowed to connect their islands of information .Intranet is the preferred computer plat form for a wide range of applications. Intranet (an internal internet) are seen as user friendly and cost effective .However technology in merely the enabler. It is people, who turn its potential into bottom-line benefits.

Universal access to information: Information can be kept on any server on the network and can be accessed from any where within the Intranet.

Person to person interaction : Intranet simplify interaction between people in different locations, through electronic mail and computer conferencing.

Informal networking Publishing information and making contact is quick and informal on an intranet.

Scalable networks: As organisation restructure, it is easy to add or remove servers to the overall network.

An intranet is neither formalized electronic library at one extreme, nor totally informal publishing on the other. It can convey information in many forms, not just web pages, but documents, tables and images. It can host applications and databases. Above all, it provide connectivity, that allows knowledge workers to collaborate, wherever they are located. Intranets by themselves do not create shared knowledge. They need the application of specific knowledge management techniques and processes. These include:

1) Systematic scanning as well as gathering of external and internal sources.

2) Use of intelligent agents to ensure relevance.

3) Management of classification thesaurus.

4) Knowledge mapping and user navigation aids not just search engines.

5) A balance of 'Push' and 'Pull' processes for information dissemination

.6) Human knowledge editors, analysts, and navigators. A key component is often a knowledge web: experts who collectively help refresh and refine the organization reservoir of knowledge.

Best Practice of Intranet

A Knowledge leader –some one who actively drives the Knowledge agenda forward, creates enthusiasm and commitment, an effective user of technology.

An initial focus on widely used and valuable information.

A clarity of vision and architecture –including approaches to levels of a Knowledge networking infrastructure –connectivity, communication, conservation and collaboration.

Simple Knowledge maps that minimise the effort to find key information.

Nurturing of communities knowledge practice.

Systematic Knowledge processes, supported by specialists in information management but with close partnership between users and providers of information .Intranet evolve not in a controlled and planned way, as with major IT project investment , but along a dynamic and evolutionary path, determined by the users themselves, with some appropriate nudgeting and steering from an experienced Knowledge networks.

Challenges of Intranet

The biggest challenge reported by practioners is that of by changing a prevailing culture from 'Knowledge is power 'to 'Knowledge sharing is power' such a culture can be changed, overtime in a variety of ways for example

1. Workplace setting
2. Management style and objective setting approaches.
3. Education, personal and team development.
4. Measurement and reward systems.
5. Leadership –developing trust and mutual respect.

It is good human networking that makes Intranet effective not technology. Addressing the organisational and human factors are a key aspect of any successful Intranet process.

Knowledge manager\Content architect\Knowledge engineers\ knowledge analysists

Information professionals should set the framework and structure; develop the good practice guides, and provide the information management expertise, create knowledge base, codified into a database format, offers advantages of transmutability, ease of access and speed of dissemination. The best contribution that an Information professional can make is, to be the 'Knowledgeable interface' between the user and the repositories of information, whether internal or external, online or hard copy.

Developing Knowledge Centers through collecting, structuring and disseminating information is one of the important activities to be carried out by the knowledge manager. They will be concerned with 'active' not 'archive' knowledge. **Action planning** (sharing best practice seek out existing practices.) and **Knowledge sharing** must become an ingrained behaviour for all professionals

They have to take an **additional participative roles** in expert system, artificial intelligence. They need to broad base their expertise in the library to include communication, training, facilitation and management skills and strategic to handle emerging situation. Being information professional, the librarians have to recast their roles as an knowledge professional to move from the background to the center of the organisational stage, to jointly hold the reins of knowledge management with users and the technology experts, to help shape the knowledge policies structures, processes and system that will nuture organisational learning. Knowledge manager able to extract filter and disseminate vital external Knowledge. He should act as 'walking archive', by gaining and updating latest knowledge from internal as well as external resources. He should be more result oriented and custodian of knowledge repositories.

Role of Knowledge Manager

1. **Understand** the level of Knowledge innovation Management

It refers to the management of the production, diffusion and transfer of Knowledge as well as the network system constructed by related institutions and organisation. It includes three aspects namely theoretical, technical and organizational innovation management. **Theoretical information Management** is to enrich and enlarge the theoretical and practical field of library and information science pursuing the latest development trends in library science, the world over. **Technical innovation Management** is to manage the network system constructed by institution and organisation.. **Organisational innovation,** is to create a set of effective organisational management system adaptable to the requirement in the electronic library by operation procedure of libraries.

2.) **Disseminate** knowledge management: Libraries as a part pf Knowledge bank: use diverse media and channels to disseminate new Knowledge. In this present time, the Internet with its mass and extensive contents provide people with the main approach to searching and acquiring information. Finding existing Knowledge, understanding requirements, searching among multiple sources and disseminating it in an appropriate form to a user.

3. **Recognize** knowledge and information as important assets: -methods need to be developed to value and assess these assets and their exploitation. These methods tailored to their effective management and growth as valued assets. In other words identify current knowledge and information resources their usages, importance, cost and value classify information and knowledge by its key attributes. Develop knowledge map. As knowledge management gains prominence, this is sometimes called a Knowledge inventory "knowing what you know". Use appropriate. performance measures and evaluation methods. Through effective use of knowledge management strategy in innovation, intellectual assets can be turned into value added assets. An investment in knowledge pays the best interest says Benjamin Franklin.

4. **Apply** computer technology to augment knowledge processing: Develop appropriate technological system. Continual advances in technology increase the opportunities available for competitive advantage through effective information Management. In particular Intranet, groupware and others collaboration technologies make it possible for more widespread sharing and collaboration use of information. Advances in text retrieval document management and a host of other trends in knowledge management techniques have created new opportunities for librarians and users alike.

5. **Exploit** technology convergence: Traditional hierarchical structures and rules must be modified to allow innovation to flourish. Exploit technology convergence through open networking using facilities such as World Wide Web, not just for external information dissemination but for sharing information internally.

6. **Develop** collaborative sharing culture: Innovation needs sharing collaborative culture that reward experimentation and learning. Raw information needs interpretation, discussing and analyzing teams of experts, offering, different perspectives. This know how sharing a hall-mark of successful organisation

7. **Identify** customer as capital: Customer Knowledge is now being recognized as key Knowledge. It not only assists about anticipated needs but serves present requirements. Knowledge Management should have a high degree of interaction and intimacy with customers to harness the customer's Knowledge and insight to create new projects and services. For the continuous improvement and innovation, customers recognized as intellectual capital of the organisation.

8. **Ensure** networking –Network plays and important role in shaping and promoting knowledge among organisations. It also provides opportunities for shared learning, knowledge transfer, and information

exchange. It connects Knowledge seekers with knowledge providers. Network environment in the capability to develop network environment in the organisation to share expertise and ideas together through intranet to solve the complicates issues arising from time to time. He should ensure that highly relevant knowledge stored in network being linked and used to key decisions and objectives in the organisation.

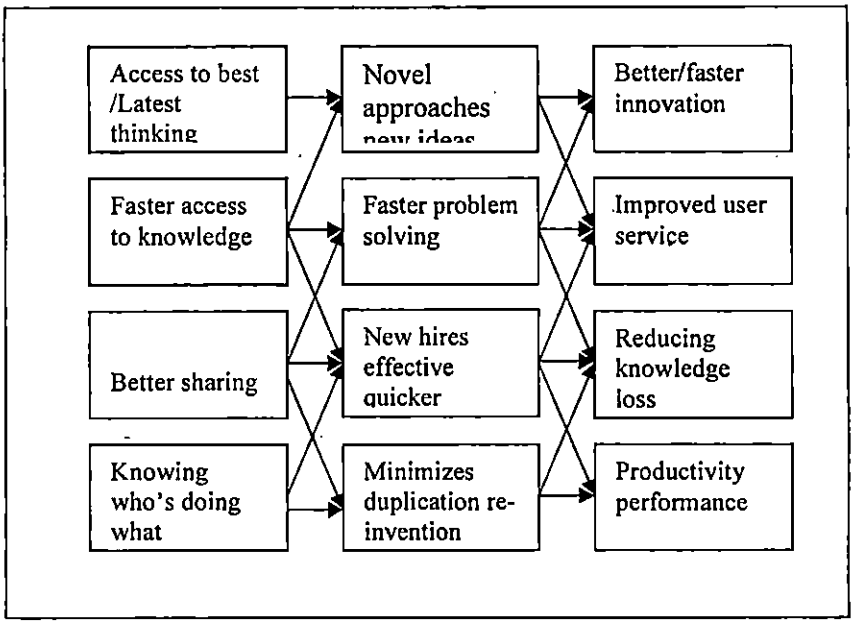
9. **Collaborate** knowledge management: Knowledge manager should learn more by joining Knowledge linking programmes through collaboration that assist to bring new knowledge into their Knowledge Management system. He helps to capture and obtain the knowledge of exodus employees, which results to save the organisation's Knowledge pool from great loss. Many successful organisations now have recognized that not only

Knowledge initiatives but also human behaviour and culture are factors, which make information accessible. Positive thinking and balanced attitude towards achieving goals would lead them as to be a successful leader of knowledge management team. Knowledge manager must attract and motivate talented persons of the team to enthuse the knowledge workers team to achieve the desired goals. Incentive schemes must be applied in organisation to motivate Knowledge workers towards mailing organizational success.

Inculcate the library culture: Knowledge Management will inject new blood into the library culture. The main contents include mutual trust, open exchange, studying, sharing and developing knowledge operation mechanism of librarians, enjoying knowledge management process. To make a full use of knowledge it is necessary to foster a new type of library culture suitable to its requirement. Library professional have enormous scope in using knowledge management as a tool for diffusion and innovation of knowledge management. **Figure-5** shows that how these leavers helps in linking between better knowledge management and the organisationl needs. This link is an indirect cause and effect relationship. The successful knowledge manager will work on one or more of these leavers and demonstrate how they contribute to the user needs.

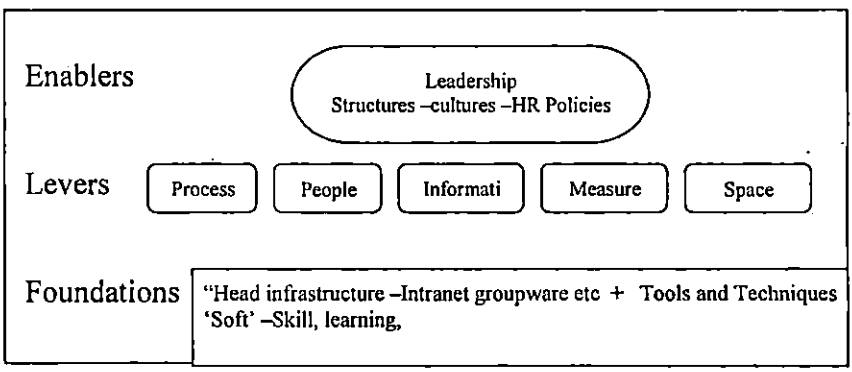
Contribution By The Knowledge Manager Is Not Exercising The Knowledge Management Assignments, But On Exploiting The Knowledge Dimension As A Service Differentiator In Existing Lines Of Organizational Practice. For Example User Relationship Management, Process Improvement, Better Innovation Are Some Of The Areas That Can Be Enhanced Through Applying Knowledge Dimension.

Success tree



Success factors

An elementary success factors of Knowledge Management is to have a common understanding of the terms "Knowledge Management" and Knowledge sharing and how they apply to one's own your situation and needs. Fig-6 indicates a framework for developing a knowledge management programme. At the top layer the framework are the enablers. The key factor here is organizational leader. The organization's structure, culture and environment encourages knowledge development and sharing.



The second layer comprises processes that facilitate knowledge flows, the effective handling of information, and measurement systems that explains the contribution of knowledge. The third layer provides the capacity and capability that embeds knowledge into organization's infrastructure. It comprises 'hard' information and communication infrastructure that supports knowledge collaboration and a 'soft' human and organization infrastructure that develops knowledge enhancing roles, skills and behaviour. Some inherent critical success factors are built into the definition. Knowledge management is a set of strategies and approaches which enable the flow of information to the right person at the right time, otherwise an organisation would be managing its Knowledge just for the sake of managing it and not to create value. It the knowledge shared within an organisation doesn't enable its recipient to create value, be it through increased revenue or time or cost savings.

The success of a Knowledge Management initiative depends on many factors, some within our control, some not. Typically, success factors can be categorised into five primary categories.

Leadership and clear vision

Nothing makes greater impact on an organisation than when leaders model the behaviour they are trying to promote among employees. Commitment to knowledge management led to the creation of an infrastructure that promoted and supported the growth of 'communities of practices' not only throughout the organisation, but also around the globe. e.g. world Bank. Its knowledge managers constantly search for new approaches to Knowledge sharing, knowledge to organisation success and how Information Technology can help.

Culture

Cultural issues concerning knowledge Management initiatives usually arises due to the following factors.

(i) Lack of time: the processes, technologies and roles designed during a knowledge management initiative save employee's time not burden them with more work. This can only be accomplished if the employees work patterns are accounted for during the initial design and planning phase of the initiative.

(ii) Unconnected reward system organisations have balance between intrinsic and explicit rewards in order to encourage employee behaviour. The most effective use of explicit rewards has been to encourage sharing at the onset of knowledge management initiative. People share because they want to, they like to see their expertise being used and they like being respected by their peers. Creation of sharing culture that support innovation, learning, appropriate reward mechanisms.

(iii) Lack of common perspectives: Sharing must be inspired by a common vision. The user affected by the new process or technology must enter into this vision and believe it will work.

(iv) No formal communication: when designing and implementing Knowledge Management initiatives communication should be pervasive and ingeminating. Make everyone knows what we are attempting to do and build anticipation for the launch. Breakdown some of the barriers to knowledge sharing and give people the tools and environment they need. By designing knowledge management initiatives around our culture we will be initiating cultural change.

(v) Structure, role and responsibilities: A steering committee, a central knowledge management support group (Librarian) facilitators, technologists work as a team model and teach employees the principles of knowledge sharing using a common vocabulary and prevent a silo mentality and incorporates resistant employees in the process. It is a combination of a centralized and decentralized approach.

III. **Information technology Infrastructure** - A Knowledge Management initiatives is not software application having a platform to share information and to communicate is only part of a knowledge management initiative. Some of the the success factors related to information technology are :

(a) Multidisciplinary approach: The implementors /librarians/facilitators /experts/technologists must take time to understand their user needs. Matching the knowledge management system with the objectives is essential.

(b) Content: Establish great content involves having processes in place to acquire, manage, validate and deliver relevant information when and where it is needed.

(c) Simple Technology: An important organisational part of knowledge management is about create simple technology environment and culture in which our knowledge 'star'/user will actively engage in developing solutions and sustain the Knowledge Management system.

(d) Adequate training and experimentation : there is no such thing as a finished requirement specification. Central knowledge management group should spend most of its time in teaching, guiding and coaching users how to use the system to interact, communicate and share information and knowledge with one another.

IV. **Knowledge Measurement**: Correlate Knowledge Management activities with outcome. Due to the inability to isolate Knowledge sharing results tracking the correlations over time is important. Using intellectual capital accounting to guide management actions, and hence value creation and organisational growth. Effective monitoring of the Knowledge Management process is one of the key parameters of measuring success factors.

V. **Human Resource Man**: The entire knowledge management's 'success factor concept' centers around the human resources, as knowledge is created and used by human mind. At the same time many people see only technology face of the Knowledge. In order to reap the harvest of Knowledge Management adequate developments of human resource is necessary. So the successful implementation of knowledge management depends on giving appropriate focus to non-technical factors such as human factors and cultural factors that are the ultimate determinants of success.

Definitional argument of knowledge management success

Different conceptual definition of knowledge management by different authors attempt end in failure. For example some are emphasizing the technical aspects at the expense of the people management aspects and it is indicative in itself that the vast majority of literature resides with in the information technology field. (Bank, 1996: cole –Gomolski , 1997: finarty 1997) Research literature shows a strong link between knowledge management and the creation of a sustainable competitive advantage, because of the tacit nature of an organisation's knowledge (Gupta and McDniel, 2002)

Milton et al(1999) says ,"Knowledge is an object can be codified and distributed, underpins the linked field of computer science and information system. As a result of this knowledge management has been closely tied to ICT. Mc Dermont points out 'using ICT rather than a solution to knowledge management may "represent the great trap in knowledge management ".

An analysis of current academic literature on 'obstacles to Knowledge Management' reveals three main groups of factors –flows in the organisational process, misconceptions of the role of technology in the process and lastly human factor. Differing definitions with different reference fogs entirely the picture of what factors can enhance or reduce the chances of successful knowledge management within an organisation. The dilemma can perhaps best be approached by managing the processes relating to the domain of knowledge management rather than presuming to manage the knowledge itself. Knowledge

Management is inextricably linked to the sharing of knowledge between individuals and to the collaborative processes involved. The factors and environments which enhance this all, relate to the role of human factor in the knowledge management process.

Knowledge Management in library operation: The user of a library and information center already has a mental scheme of the world, thinks in natural language.Since knowledge is gathered from different places and people, it is a pre-condition to develop a common vocabulary acquisition tool.(Thesaurus) which activate thinking when searching and guarantee indexing coherence and retrieval efficacy, help users understand a specific domain . It is not followed it leads to ambiguity and ineffective dissemination. i.e. for example user may be expecting information under "aging " knowledge may be stored under 'Gerontology '. In his mind, the contents to be located or identified are not represented by a narrow set of description but by concepts and relations. Therefore matching of the string (information needs) to a restricted set of concept-descriptors. A holistic approach to knowledge organisation could benefit exploration of knowledge base if the thesaurus (or nowledge organisation interface) has qualified links to other knowledge domain. Thus 'facilitating user interaction with in the "Knowledge base" is one of the very important success factors of knowledge process.

There is no established evidence as to the reasons behind failure or success of knowledge management initiatives in an organisation. Some argue that a failure to sustain investment is one factor, but it can equally be argued that if knowledge management delivered on its promises investment would continue. As with many management initiatives, particularily those with a heavy information technology base in knowledge management frequent questions about the level of consultation necessary before a programme is started. These questions are linked to cultural change and willingness to share and collaborate with colleagues.

Conclusion: Collaborative technologies and Information management both have significant contributions to make, but many organizations have yet to adapt them both systematically and strategically. KM as it is practiced to-day, 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. Technology is a required foundation for managing knowledge assets and bringing people together in wide spread organization. But the focus of KM is not just on the effective use of available technology but on creating a synergy between the human capital and Information technology tools.

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Knowledge Management and the Role of Librarian / Information Professionals

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ABSTRACT

The paper begins with what is knowledge and finds the answer with some definition. The discussion is with knowledge management. 'Knowledge' is not a 'thing' that can not be 'managed'. It is a capacity of people and communitic, continuously generated and renewed in their conversation, to meet new challenges and opportunities. People responsible for knowledge value creations can be insperied and supported, but they can not be managed. We can not manage knowledge directly – we can only manage information about the knowledge possessed by people in the organisation. Even then the information to be managed in necessarily incomplete because the boundaries of personal knowledge are fuzzy and continually changing as individuals get out of tuch or extend their knowledge. The new information technologies of the 1990s – Web and groupware – are having a profound impact on KM at the global level web technology has significantly increased the case of use as well as the use of knowledge resources deployed at the desktops of all the organisational managers, especially of the information management professional. While successful KM requires the creation of knowledge repositions and mechanism for bipping into them, these steps are not sufficient. In addition, there must be a climae within the organisation which support knowledge sharing and use.

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Knowledge Management for Academic Libraries: Challenges

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ABSTRACT

The development of knowledge management in recent years has become the key concern for librarians and libraries. Powerful new technologies for capturing, storing, retrieving and sharing information are fast becoming the building blocks of a new knowledge infrastructure. The emerging field of knowledge management offers libraries the opportunity to create knowledge to improve organizational effectiveness, for both themselves and their institutions. This article is intended to summarize the dynamic field of knowledge management and to describe how it can be used to make libraries more effective both inside the library and throughout the institution. It will also examine the role of librarians/libraries in knowledge management and suggests that librarians/libraries in the digital and knowledge age should be in charge of knowledge management in their respective organizations in order to leverage the intellectual assets and to facilitate knowledge creation.

Keywords: Organizational knowledge, Organizational Effectiveness, Knowledge Management, Tacit knowledge, Explicit knowledge, Knowledge Repositories, Knowledge Environment, Knowledge Asset, Data Warehouse

Introduction

In this information and knowledge age, 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 for an organization. All too often one part of an organization repeats work of another part simply because it is impossible to keep track of, and make use of knowledge in other parts. Libraries as major functions of an organization need to know what the organization's corporate knowledge

assets are and how to manage and make use of these assets to get maximum return. For the past few years, academic libraries have generated increasing amounts of information about their operations. Yet, libraries rarely use this operational information to create or apply organizational knowledge. Instead, they excuse themselves by saying 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. They do not structure their organizations to use organizational knowledge. They do not apply organizational knowledge to improve services or the transmission of scholarly information. Nor do libraries lead their institutions in managing their knowledge. Universities also create vast arrays of information about their operations, yet frequently do not organize or interpret them.

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.

What is Knowledge Management?

Knowledge management may be defined as the set of processes that create and share knowledge across an organization to optimize the use of judgment in the realization of its mission, vision and goals. It is a discipline that seeks to improve the performance of individuals and organizations by maintaining and leveraging the present and future value of knowledge assets. Knowledge management systems encompass both human and automated activities and their associated artifacts. It is an emerging discipline developing on the interstices of organizational psychology, library and information science, economics and computer science. It involves capturing an organization's goal related knowledge as well as knowledge of its products, customers, competition and processes and then sharing that knowledge with the appropriate people throughout the organization. Thus we can say that knowledge management is an art of creating values for an organization's knowledge assets (Beckman, 1999). It provides access to various aspects like experience; knowledge and expertise that create new capabilities that

enables superior performance, encourages innovation and enhances customer value.

Knowledge and 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. They are 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 -- that 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? (March 1994). 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. Those 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 it uses to create and integrate all its intellectual resources in order to achieve high levels of performance.

The organization adopts a holistic approach to knowledge management that successfully combines tacit and explicit knowledge at all levels of the organization. Tacit knowledge is cultivated in an organizational culture that motivates through shared vision and common purpose. Personal knowledge is leveraged with explicit knowledge for the design

and development of innovative products, services and processes. Strategic vision and operational expertise are fused in creative action.

Knowledge Management is a discipline that promotes an integrated approach to identifying, managing and sharing all of an organization's knowledge assets including unarticulated expertise and experience resident in individual workers. In other words, knowledge management is taking advantage of what you know. Knowledge Management involves the identification and analysis of available and required knowledge, and the subsequent planning and control of actions to develop knowledge assets so as to fulfill organizational objectives. Knowledge Management is not about managing or organizing books or journals or arranging for the circulation of materials. However, each of these activities can in some way be part of the knowledge management spectrum and processes. Knowledge Management is about enhancing the use of organizational knowledge through sound practices of knowledge management and organizational learning. Thus, Knowledge Management is a combination of information Management, Communications, and Human Resources.

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 manipulating it to obtain information. Davenport(1993) explains that knowledge management process is about acquisition, creation, packaging, and application or reuse of knowledge.

Librarians as Knowledge Managers

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).

Knowledge management is being used to improve library operations. Special libraries have taken the lead, but some applications now are taking place in other libraries. This section addresses how organizational knowledge can be created and used in internal library operations. From a theoretical point of view, knowing can be considered as a pyramid. All knowing begins at the bottom of the pyramid with data and unfiltered facts. When context is added, in the case of libraries through cataloging or metadata, data become information. When inference is added, often through public services such as reference, information becomes intelligence. Intelligence combined with certitude becomes knowledge. And at the top, knowledge combined with synthesis becomes wisdom. Libraries have excelled at creating scholarly information and intelligence from data, but they have tended not to create knowledge from intelligence. Moreover, they have not been as successful in generating organizational knowledge to achieve library goals. Knowledge management is one way to develop and apply the organizational knowledge needed to improve library operations and, ultimately, library effectiveness. It also enables libraries to generate organizational knowledge for higher education institutions. (Michael, 1997)

Larger Role for Academic Libraries

In the corporate community, special libraries have been involved in knowledge management from its beginnings. Libraries, along with computer centers, research units, personnel, and business offices, provide the leadership for corporate efforts. In the same way, academic librarians can benefit their institutions, their libraries, and themselves by undertaking a campus wide role in managing organizational knowledge. They can use knowledge management as a way to expand the library's role to areas such as administration or support services, where libraries have had little impact in the past. Moreover, they can develop cross-functional teams with units such as computing, instructional technology, institutional planning, and personnel to create collaborative organizations that have major institutional missions and responsibilities. Higher education is in the midst of major change as accountability, technology, faculty aging, distance education, and many other pressures come to bear.

Knowledge management offers an opportunity to manage some of these issues and achieve institutional goals by using organizational knowledge. Libraries can bring specific skills in the selection and organization of knowledge, training, and user support to cross-functional teams. By doing so, they can create increased interest and support for their other missions.

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.

Librarians or Knowledge Managers

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.

Commitment to staff training is an important part of both knowledge management and library services. Library functions will be at the heart of a knowledge-based organization. And a knowledge-based organization such as an institution of higher education will insist on effective library and knowledge services.

Moreover, there are differences between knowledge management and the practices of most academic libraries. First, knowledge management is almost entirely goal oriented. If the academic goal changes, knowledge management will change rapidly to address the new goal. On the other hand, academic libraries tend to provide services as long as they are used. Second, knowledge management tends to be much more proactive in terms of users. It is more willing to initiate a dialog than libraries have been in the past. Third, libraries traditionally try to be everything to everybody, whereas knowledge management tends to be very focused and selective. Fourth, knowledge management is committed to the time value of knowledge, a concept unknown in academic libraries until recently.

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.

Challenges and Strategies

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.

Knowledge management organizations tend to be more individually based, reflecting the general trend toward organizational autonomy. To be successful collaborators, librarians will need to take a more independent and self-directed approach to their work within knowledge organizations.

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 Systems in the Academic Libraries: Recent Trends

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ABSTRACT

The Information Technology brought a tremendous change in the society in consequently the society becomes a knowledge society. The traditional employment also transformed into technical works. The librarians are not exempted from this transformation. This 21st Century demands various changes in public libraries, private libraries and personal libraries. One of the important component in the Information Technology revolution is Information Retrieval System. The proper understanding of this system makes the librarians job easy in managing large indexes. The Knowledge Management of the Retrieval System is only possible with the understanding of Retrieval Process. Therefore in this paper Knowledge Management of Retrieval Process is explained along with index techniques. The impact of Knowledge Management of Information Retrieval System on academic libraries its merits and demerits and recent trends in Information Technology and its utilities in libraries suggested.

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Knowledge Requirement for the Medical Librarian in the Internet Era

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ABSTRACT

With globalization way of life, Internet resources are now the information backbone for many medical librarians. Knowledge of Internet resources is a new revolution in information related areas to the medical librarians. The role of Internet knowledge in medical field will become more and more important along with the development of knowledge economy. Internet is an integral part of library services. Internet has emerged as a powerful educational and informational tool with increasing impact of information technology on higher education. Also Internet is to support medical professionals academic and research activity in library. In this 21st century era, the knowledge of Internet is an essential source for medical college librarians as well as medical professionals to gain their knowledge and to provide quick services.

Key words: Globalization, Internet resource, Information backbone.

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Communication Barrier in Public Libraries of Lucknow: A Study

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Introduction

Communication plays a vital role in the society. It acts a sensory organ, by which the entire social process is carried on. A public or 'popular' library is the nucleus of the community's intellectual attainments. Public library is a place where people of different age, sex, caste, profession meet and exchange information. Without such exchange of influence human society would simply collapse. Public libraries helps society in various ways: such as maintenance of culture, knowledge dissemination, information retrieval, social interaction etc. means public libraries are striving for the needs of the public. As we all are aware that now information dissemination is carried out by electronic means mainly. The print media has its own importance but because in earlier time the access to information was costly due to higher cost of ICT technologies, now scenario has been changed as now most of the public have direct access to the internet. But the question arises here:

1) Are they getting relevant information?
2) Which kind of information resources they are finding on web?
3) Are they able to use search strategies?
4) Do they know various information tools that are available for IR?

So the role of public libraries starts here that they can guide the public exist before public libraries in pursuance of information dissemination such as lack of information policies and organization of information. Active use of IT potentialities for improving quality of work life of citizens and welfare of society is needed.

The basic role of public library in modern society can be said:

1) It presents the platform for learning as debates, open discussions, dialogue; education takes place at public library. It acts as a market place of ideas for community.
2) Information services free of charge they are providing and inter library networks helps a lot in making information available to the users.
3) Public library needs to open up new partners for their development. Such as university libraries, research libraries etc.
4) It organizes stabilizes, modifies our social life and it enables us to pass on its forms, meaning from one generation to the next.

Communication is one of the basic instincts and fundamental characteristics of human society. Barriers to communication are obstacles that distort or block the flow of needed information. The study is based on many barriers such as social & psychological, financial, time lag, language, technical, personal, quality of publication, misleading titles & ambiguity. It order to get proper information flow, these barriers should be removed from roots to lay down the new foundation of any library. A careful study of the above mentioned barriers in information communication of public libraries in Lucknow have been done.

Objectives

The main objectives of this study may be stated as follows:

- To throw light on the major communication problems among users and library staff of the studying public libraries;
- To know the reasons of the problems of communication in the public libraries;

Scope

The proposed study is focused mainly on the barriers in the proper communication circle between users and library personnel in the public libraries of Lucknow.

The following criteria are adopted for selecting the libraries:

- The public libraries, which are visited by more than 100 users per day (approx.)
- The libraries (at least 50% of the selected) having collection more than one lack documents.

By adopting these criteria, the following libraries are included in the study: Acharya Narendra Dev Public Library (number of documents 1,10,000 (approx) and number of users 150 (approx) per day, Ameer-Ud-Daula Public Library (number of documents 2,50,000 (approx) and number of users 100 (approx.) per day and Lala Lajpat Rai Public

Library (number of documents 30,000 (approx.), and number of users 100 (approx.)

Methodology: The methodology chosen for conducting the study "Communication barriers of Public Libraries in Lucknow: A Study" consists of Questionnaire Method, Interview Method, Observation and literature survey as detailed.

Questionnaire: A questionnaire was designed to collect the necessary details for the study. Questionnaire was distributed to collect the data about communication barriers faced by user in public Libraries.

Interview Method: Public Libraries users were interviewed in order to obtain authentic and first hand information regarding the communication barrier faced by them.

Observation: In order to make the study more exhaustive and accurate, major public libraries were visited. Observation implies the use of eyes then of ears and voice. Constraints in communication were observed in the public libraries.

Literature Survey: Many documents including books, journals articles, unpublished material dealing with communication barrier were referred to get a clear picture of topic. An effort is made to locate various previous studies made in this field. Different web sites related to the topics has also been searched.

HYPOTHESIS:

- The users of the public libraries are facing various types of communication barriers.
- The users of the library are not satisfied with the library services completely.

Interpretation of Data: Interpretation of data was done by statistical method. The data collected through various methods such as survey, questionnaire, interview, observation and visit to libraries were tabulated, analyzed and conclusions drawn.

Profile of the Libraries:

The Profile of these libraries is discussed here:

Details	ANDL	APL	LRPV
Establishment year	1959	1882	1971
Total Budget of the library	Rs. 10 Lacks Annual (Approx)	Rs. 15 Lacks Annual (Approx)	Rs. 3.5 Lacks Annual (Approx)
Income Sources	Library fees, Bharat Seva	State Govt.,Library fees	Library fees, Bharat Seva

	Sansthan, Trust		Sansthan (Autonomous)
Collection of Books, Periodical, Reference material, Book bank	1 Lakhs +25000 +50000 +10000	2.5 Lakhs +30000	1 Lakh +30000
Library Staff	2 Deputy Librarian , 7 Library Asstt, 4 Peon, 1 gatekeeper, 2 seawper	1 Librarian, 1 Asstt. Librarian, 6 Sr. Lib Asstt., 5 Jr. Lib. Asstt. , 6 others	1 Librarian, 1 clerk
Library Timing	12.00-7.00 PM.	11.30 -6.00 PM.	3.00-6.00 PM.
Services	Inter Library Loan, Circulation	Internet facility, Circulation, Photo copy	Reference service, Circulation
Sections	Welcome counter, Circulation counter, Main collection, Newspaper reading room, Ph. D. Room, Socrates section, Victor hugo section, Divya jeevan Section, Book help section, office	Welcome counter cum reading room, Circulation counter, Reference section, main collection, newpaper section,General knowledge section, children section, office, catalogue deptt.	Reading room, Circulation counter, main collection, Hindi section, English section, periodical section, computer science section, Reference room, office, Junk room.
Classification & Cataloguing	DDC	DDC, ALA	DDC, Selective Cataloguing
Access	Open	Open	Closed
Circulation	Newark	Newark	Newark
Automation	No	No (They have 7 computers	No
Users Visiting per day	142	110	105

Analysis: The data collected through different methods were systematically analyzed and interpreted. The findings evolved out of the study were summed up here.

The findings of the study of communication barrier of public libraries in Lucknow are as below:

1. Distribution of Questionnaire:

Libraries	ANDL		APL		LRPV	
No. of Questi-onnaire	Distributed	Received	Distributed	Received	Distributed	Received
	30	27	30	25	30	24

The table 1 shows in ANDL 30 questionnaires were distributed and received 27 (81%), in APL 30 questionnaires were distributed and 25 (75%) users have responded , whereas in LRPV 30 questionnaire were distributed and 23 (69 %)users have responded.

Library Timings Problem:

ANDL				APL				LRPV			
Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
03	11.11	24	88.88	05	20	20	80	06	25	18	75

The Table 2 shows that the Library timings problem is faced by 14 (18.42 %) users out of 76 users in these 3 libraries, Most of users face problem in LRPV library about the timings of the library.

Financial Problems:

Rising cost of the Library Services:

ANDL				APL				LRPV			
Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
07	25.92	22	81.48	07	28	18	72	09	37.5	15	62.5

The table 3.1 shows that out of 76 users only 23 (30.56%) users face problem about rising cost of library services.

Transportation up to Library:

ANDL				APL				LRPV			
Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
06	22.22	21	77.78	05	20	20	80	04	16.66	20	83.33

This table 3.2 shows that 15 (19.73%) users out of 76 are facing the transportation problem. Mainly users are facing problem to reach to ANDL library.

Language Problem:

ANDL				APL				LRPV			
Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
04	14.81	23	85.18	02	8	23	92	06	25	18	75

The table 4 shows that 12 users (15.78 %) are facing the language problem out of 76 users.

Technical Problem:

Problem	ANDL		APL		LRPV	
	Yes	No	Yes	No	Yes	No
Poor Presentation of documents	12	15	16	09	09	15
Less no. of copies available	10	17	08	17	10	14
Lack of special equipment	20	07	10	15	12	12
Complicated Library system	03	24	05	20	02	22
Lack of awareness	05	22	07	18	05	19
Unqualified staff	09	18	08	17	11	13
Lack of proper structure	07	20	07	18	07	17
Total	66	123	61	114	56	112

This table 5 shows that most of the users are facing technical problems, lack of special equipments and under qualified staff and poor presentation of documents are major problem.

Institutional Impediments:

ANDL				APL				LRPV			
Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
04	14.81	23	85.18	05	20	20	80	05	20.83	19	79.16

The table 6 shows 14 (18.42 %) users are facing problem due to institutional impediments.

Factors of Institutional Impediments:

Problem	ANDL		APL		LRPV	
	Yes	No	Yes	No	Yes	No
Status	2	2	3	2	2	3
Structure	3	1	1	4	2	3
Secrecy	3	1	3	2	4	1

The factors of institutional impediments are mainly structure and secrecy.

Psychological and Social barrier:

ANDL				APL				LRPV			
Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
8	29.62	19	70.37	9	36	16	64	10	41.66	14	58.33

The table 7 shows that 27 (35.52 %) users are facing problem due to psychological and social barrier.

Factors of Psychological and social barrier:

Problem	ANDL		APL		LRPV	
	Yes	No	Yes	No	Yes	No
Weariness & Reluctance to cooperate with info. Specialist	04	04	06	03	05	05
Unwillingness to change	05	03	04	05	06	04
Unhappiness over discipline & procedure	02	06	02	07	04	06
Question of prestige	03	05	03	06	03	07
Shyness	04	04	03	06	05	05
Self consciousness & selfishness	00	08	02	07	02	08
Ignorance	01	07	01	08	04	06
Tradition boundness	03	05	05	04	04	06
Mistrust	05	03	04	05	03	07
Total	27	45	30	51	36	54

This table shows factors such as weariness to cooperate with info. Specialists, unwillingness to change are major problems.

Administrative & Political Barrier:

ANDL				APL				LRPV			
Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
11	40.74	16	59.25	09	36	16	64	08	33.33	16	66.66

The table 8 shows that 28 (36.84 %) users think that administrative and political barrier affect the communication.

Noise Pollution:

ANDL				APL				LRPV			
Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
15	55.55	12	44.44	14	56	11	44	10	41.66	14	58.33

The table 9 shows that 39 users (51.31 %) are facing problem due to noise pollution, which occurs due to talking by users and staff in the reading room.

Cultural Barrier:

ANDL				APL				LRPV			
Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
05	18.51	22	81.48	06	24	19	76	02	8.33	22	91.66

The table 10 shows that 13 users (17.10 %) are facing problem due to cultural barrier.

Procedural Problems:

ANDL				APL				LRPV			
Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
11	40.74	16	59.25	14	56	11	44	09	37.5	15	62.5

The table 11 shows that 35 users (46.05 %) are facing problem due to procedural problem.

Jargon Problem:

ANDL				APL				LRPV			
Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
05	18.51	22	81.48	05	20	20	80	06	25	18	75

The table 12 shows that 17 users (22.36 %) are facing problem due to jargons.

Conclusion

The Users of these public libraries suggested that Internet facility and current awareness service, Xerox facility should be provided to the users. Most of users reported that books are misplaced from racks and they are still in the catalogue, so it gives lot of trouble to them. Most of libraries are centrally located, so users don't face much problem to reach library. Many users reported that most of the books are destroyed and very dusty, the proper verification of the books should be done. Noise pollution is sometime created by staff of the library or users it must be stopped in the reading rooms. The automation of the libraries should be done to provide better services to the users.

The study started with hypothesis is that the users of the public libraries are facing various types of communication barriers. The hypothesis was found to be true as users of public libraries have reported many barriers of communication.

The second hypothesis is that the users of the library are not satisfied with the library services completely. From this analysis, we have found that users want better services from public libraries.

Recommendations

The analysis reveals that users of public libraries are facing various types of communication barriers, which create lots of problems for the users of public libraries. Some suggestions have been made here to reduce these communication barriers:

- The Public Libraries are 'Heart' of the society. For improving the public library services government has to appoint qualified library professionals.
- Most of the Libraries are not providing even photocopy facility to the users, so this must be started soon.
- Most of the users think that Library system is complicated. The rules and regulations should be simple, so that users can have better utilization of the resources available in the library.
- The Library opening hours should facilitate more and more users access to the library.
- The Library staff must be provided the training of new technologies, as the awareness among staff about newer technologies is lacking.
- The Organizational structure of the library must be proper to strengthen the communication process.
- The collection variety such as CD-ROMs, DVDs, Audio visual aids etc. must be added to the collection to have variety of users in the public library of lucknow.
- The automation of activities of the public library must be initiated, so that users get better and quick services from the libraries.
- Modern system, retrieval techniques and open access should be provided in all the libraries to have better access of information.
- Internet facility and inter library loan facility should be made explicit to improve communication in the public libraries.
- The user's education programmes should be conducted at certain intervals, to make familiar the users about the newer technologies and rules of the library.
- The staff of the Public libraries should believe in "*May I Help You*" philosophy, so that users feel free to contact them in case of any query and ultimately it improves communication.

Suggested Readings:

http://www.nature.com/nature/debates/e-access/Articles/odlyzko.html
http://www.olaweb.org/org/CBarriersImplementation.pdf
http://www.olc.org/Ore/3barriers.htm
http://libres.curtin.edu.au/libres13n2/williamson.htm
http://www.uoguelph.ca/~lbruce/documents/info.html

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Impact of Internet on Community Information Services

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ABSTRACT

The main objectives of the study are to assess the trend and impact of Internet on community information services and how it is required to the public at large. Role of Internet and its need of the user community-how to find the information relating to common man needs through the Internet. Author emphasized the need of the CIC's and its objectives and how it facilitates to the local community by utilizing the benefits of global connectivity through Internet. Based on findings suggestions have been made.

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Integrated Community Information System (ICIS) in Public Libraries: Need and Components

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ABSTRACT

Integration is the best course of action to get good result in any work. Similarly if we introduce integration in Community information service we get enough benefit for different segments of communities in the society. Community information may be defined as information for the problems and crises encountered by individuals at different stages in their lives. It is the information for self reliance and self determination. Now it's a time to integrate all community information and put it in a single window. This paper focus on role of Integrated Community Information System in public libraries also deals with components of ICIS. Study also highlights the responsibilities of information officer in coordinating the Integrated Community Information System in public libraries.

Key words: Integrated Community Information System, Community information services, Public libraries.

Introduction

In the knowledge-based society of the 21st century, inteiligence based on human originality will determine the survival and prosperity of individuals, organizations and countries. Therefore, this country has been undertaking significant reforms in community based information services in order to cultivate creative human resources through open education and lifelong learning. The implementation of these educational reforms is based on Information and Communication Technology (ICT) used in community information services.

Effective use of the integrated information services for community is a key consideration. Adapting education and extension activities to the

community is a new and developing process that requires flexibility in strategies and priorities to effectively cope with the requirements of a fast-growing environment. Continuous monitoring and evaluation are necessary to ensure that the reform continues to be based on accurate results.

Integrating community information services includes health, social support, educational, employment, agriculture, recreational services etc. Integrated community information service is a new arena which deals with community based information services. The concentrated objective of Integrated Community Information System (ICIS) is to provide need based and pinpointed information to the community.

Need of ICIS

Honorable Prime Ministers who said on Independence Day i.e. on 15th august 2002 "The Government of India would implement a comprehensive program to accelerate e-governance at all levels of the government to improve efficiency, transparency and accountability at the government citizen interface"[1]. To achieve this goal and vision of Honorable Prime minister it is the need of the hour to establish integrated community information services in public library set up. Every state government departments should implement a plan to set up integrated information services in the strategic way, it represents a major overhaul and modernization of the provision of information on all social services and will deliver an integrated and seamless supply of high quality and independent information to the entire population, and in particular, those in society who are most vulnerable and in need of supports. The provision of independent, clear and accessible information has a central role in helping to break down barriers, eases anxieties, opens up opportunities and very often clears the way for citizens, particularly those who are most vulnerable in society, to improve their situations and build better lives. However, there are many other social issues, such as employment, health services, housing, education, family concerns and consumer rights, which people need access to information. We now have the blueprint for the start of a new and exciting era in the provision of an information service that is geared to meet the needs and demands of an expanding and increasingly diversing 21st century.

Why We Need

- To link up all community information services and built a strong base, of integrated information system. Also the harnessing of new and emerging technologies to further improve and expand the availability of information.

- To undertake nationwide, high profile information and awareness campaigns by government on specific social services and welfare issues.
- Increased and targeted emphasis on the provision of clear and accessible information for all citizens on their rights, entitlements and supports.
- To avoid duplication of effort made by VLW (Village Level Workers) in different departments
- To draw the attention of the policy maker towards the establishment of integrated information systems and realize them to know the role of information in establishing good democratic setup and healthy society.

Vision and Goals

The vision and goals of IIS is to made provision of providing comprehensive information on local services and support to communities that can be accessed easily, from a range of settings used by different communities and in different media and formats. Also providing communities with choices in how and when they access local information and enabling communities to exercise choice and to become informed consumers of services to support them and their society. Integrated information services facilitating the citizen - administration relationship and achieving a fully integrated service, (in person, by telephone or on the internet) completely focused on local people's needs.

More specific vision and goals

The vision and goals of Integrated Community Information System are;

- Create a system capable of providing accurate; timely and integrated information on community needs include health, social welfare, employment, and education, political and sociological issues.
- Develop the leadership and partnerships to ensure successful implementation of an integrated information service at national level
- Foster, and support, a research environment that focuses on impact mitigation and improved predictive capabilities;
- Provide interactive delivery systems, including an Internet portal, of easily comprehensible and standardized products (databases, forecasts, GIS-based products, maps, etc.); and
- To create awareness among community in usage of different community portal and at the same time offering of new pioneering services.
- Building the bridges between Government, Business and Education for up-liftment of rural community.

Basic Characteristics

According to Ana Zegarac [2] any Integrated information system should posses some of basic characteristics such as:

- ***Reliable and direct:*** Integrated Information System should be developed as a service that provides a unique and direct access to all the relevant data and that should be reliable and authenticated
- ***Integration:*** A concept unity of the information system is provided through the creation of a unique general design/project that defines basic tasks, as well as the functions realized within the information processes.
- ***Functional principle***: Information system is to be built according to the unique model of integrated information infrastructure. Give more emphasis to functional aspects rather than geographical bias or community bias. In this way, a permanent structure of the system will be built as the base for the successful realization of all the activities/objectives, regardless of all the internal and external variables,
- ***Distribution:*** Distribution of the database is especially significant in relation to the data updating, i.e. collecting, controlling and storing.

Components of ICIS

Basic components of Integrated Community Information Systems are ICT infrastructure includes physical facilities, hardware, software, environmentally suitable machine room space, and professional staff. Overall components of IIS have been discussed as under with diagram;

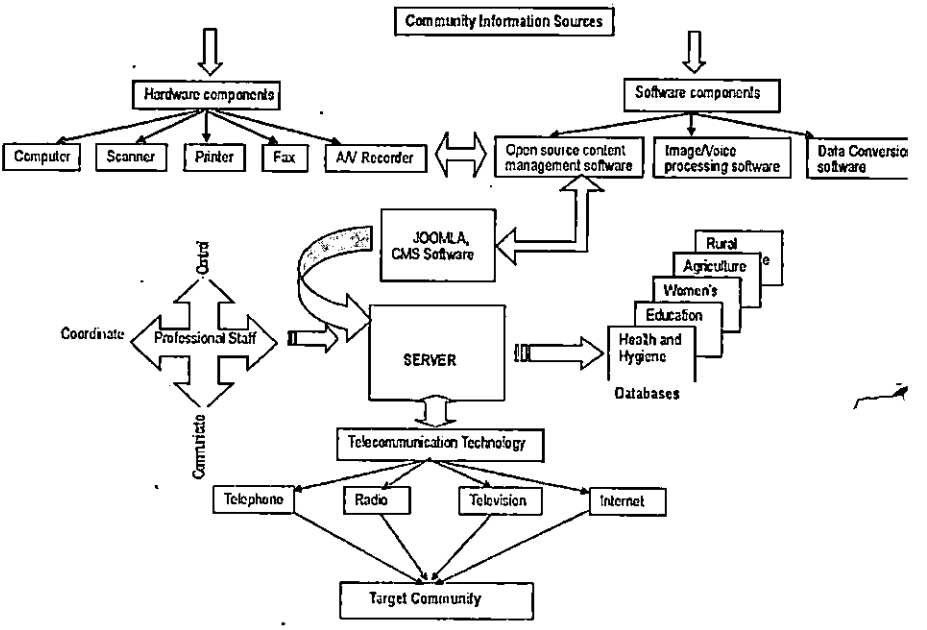
- ***Community Information Sources:*** Information sources are basic components of any integrated information system. It includes all basic information both published and unpublished by several government departments for the benefit of communities.
- ***Hardware components:*** To preserve and store the information in different format we need different hardware devices such as computer, scanner, A/V recorder. Along with these Xerox, fax and printers are very essential components.
- ***Software components:*** It is very essential component of IIS, it consists of open source content management software's. Among the different content management software we choose some compatible, customized, user friendly and high capacity data storage software's for this purpose. It also involves operating systems and network system platform. To convert huge amount of textual, image/graphics,

and voice data we use some image/voice processing software's and data conversions software's.

- ***Server:*** It is a machine used to store and handle large amount of data. It should have high storage capacity to handle large volume of information of different government departments in the form of databases. Server depends on number of clients/nodes and remote terminals connected to it and the different topologies adopted.

- ***Telecommunication Technology:*** It is a vein of integrated information system it consists of Telephone, Radio, Television and Internet. Nowadays revolutionary innovations have been taken up in telecommunication technology. We move towards co-axial cable to RFID and other communication technologies such as VSAT and Wi-Fi.

- ***Professional Staff:*** Library professional is a burning spirit behind the success of integrated information system. His duties and responsibilities are not limit to any single task. He must dedicate himself to collect, organize, process and store the data in different databases. Apart from this he should maintain the coordination between different government departments and make control over it. Another major part of his duty is to evaluate the system regularly by getting the feed back from user and experts.



Model of Integrated Community Information System

India is multi cultural, multi linguistics and geographically distributed country. The backbone of our country is our rural individuals though we are forefront in information technology still our rural farmers, workers, youth's and women's represent our nation in all the means. The wealth of nation is rest on wealth of rural community. Since from the beginning government and some interested non-governmental organizations and interested individuals serve the basic information needs of rural community. Basic information needs of rural community is related to health, education, agriculture, family welfare, employment, housing, industry, business, marketing etc. these thrust areas of information is provided by some government departments they are;[3]

- Agriculture/Horticulture
- Adult education
- Health department
- Social welfare
- Irrigation
- Smali-scale industry
- Nationalized and Gramina bank
- Co-operative societies
- Women's welfare
- Backward cast and minority
- Taluk Office
- District office
- Police
- Dept. of Survey
- Dept. of Sub-Registrar

Now the question is why can't we provide all these information in one single window? Is not possible to link all these community information systems to one hub? Let we think in this direction once again it is not an easy job and not possible in single hand it need cooperation and coordination. It is a job of both library professionals, village level workers (VLW) and computer professionals; if we do it in right way our dreams come true to establish single Integrated Community Information System. There is an urgent need to give shape to the community information services. In this regard M.S. Swaminathan Research Foundation [4] did a good effort to link all the community information services and provide it to rural community in the form of case studies his efforts are marvelous. Similarly Satpura Integrated Rural Development Institutions (SIRDI) [5] plays a vital role to promote the use of ICT's among selected tribal communities of Bhainsdehi tehsil of Betur district in Madhya Pradesh. Another Integrated citizen service center is LOK MITRA (Integrated Citizen Service Center/e-kiosks ICSC) (2002) [6] is the first of its own kind of electronic service in the state of Rajastan. It aims to deploy information technology for the benefit of the masses. It is an e-governance project in which the computer server is linked to different departmental servers through dedicated leased line and dial up network with multiple e-counters. Which can handle all services? It has facility of making payments through Internet using credit card. Further

JAN MITRA (2002)[7] is an integrated e-plot form through which rural population of Rajastan can get desired information and avail services related to various government department at kiosks near their doorsteps.

Role of Information Officer

No doubt librarian is a person who sits in the driver seat and act as an information officer always raise his hands towards service. He may also name as case manager (one who manage any particular community case), community agent etc. His efforts and dedication are more in attainment of desired goals of ICIS, the role of information officer is;

- Identifying, selecting, organizing and processing of community information from varied forms and sources.
- Integrate and interpret the data with easily accessible and understandable tools, which provide timely and useful information to decision-makers and the general public.
- Maintaining different community databases and efforts are made to link different databases and monitoring of integrated information services.
- Assist, support and give training to community groups
- Get acquaint with latest technological changes and be updated in handling of ICT tools.
- Thorough knowledge and understanding of community information needs and their demands
- To identify trust areas of community information needs
- Evaluating the existing information system by getting the feed back from community and expert
- Act as a role model and give justice to profession

By telling all these intricate details of ICIS it is very essential to have following qualities by professionals in order to successful establishment of ICIS:

- Commitment
- Co-operation
- Collaboration
- Creativity
- Communication

Because, as we learned early on, there is no mouse waving magic who clicks and creates a connected community. We need people with commitment, who can cooperate and collaborate. We need people with a vision, with creativity, who can network with others in the true spirit of communication

Conclusion

In summary, our Integrated Community Information System Plan is "community and content oriented" using current technology to serve community and individuals. It is designed to enhance the community information satisfaction level, strengthen individual in assimilating need based information and maintain the good relationship with information officer/extension officer/librarian, improve efficiency, overcome the digital divide, and extend personalized services to the all communities.

There is an urgent need of convert the community information services to the Integrated Information Services so that it better reflects and clearly identifies the core responsibility of nation. ICIS helps in promoting greater accessibility and public awareness of social services and the provision and dissemination of integrated information to community. Systematically integrated community information service is necessary so that citizens would not be confused when recognizing community information and determining their attitudes and high-quality decisions toward the problem. In this context, systematization of community information related issues and the investigation of how to disclose community information are needed. A high quality, customer-focused integrated information service on all aspects of social and civil services to assist people in securing their rights and entitlements is very much needed.

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Is Information for All a Myth or Reality: An Overview of Efforts

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ABSTRACT

The article stresses on the growing importance of information, and looks back at the community development programmes. The paper highlights the role of rural information centres in reaching the masses at the grassroot level. It gives an overview of the e-governance initiatives, and emphasizes the information support activities of public libraries in disseminating information to commoners. The paper gives an insight to the statewise position of the libraries, and initiatives of RRRLF for the upliftment of the public libraries. Further, the article gives an overview of the community information centres vis-à-vis libraries, and their community oriented activities at the local level. It spells out the recommendations of the National Knowledge Commission, and sums up with some future strategies, for the successful implementation of these policies, and modes for providing information for all.

Key Descriptors: Information, Community Information Centre, Rural Information Centre, Public Libraries, Local Efforts.

Prologue

The skills needed to access, evaluate, and use information to gain, and maintain employment, or make personal decisions, are constantly changing. Adult learners need to commit to lifelong learning to improve their information skill. Information age is having an enormous impact on our democratic way of life, and on our nation's ability to compete internationally. To reap such benefits, people as individuals and as a nation must be information literate.

Information literate people are those who have learned how to learn. They know how to learn, because they know how knowledge is organized, how to find information and how to use information in such a way that others can learn from them. They are people prepared for lifelong learning, because they can always find the information needed for any task or decision in hand. (Eisenberg, Michael B., et al., 2004).

McCreadie and Rice review concepts of information proposed over the last fifty years. A summary of their concepts are (a) Information as a representative of knowledge; (b) Information as data in the environment; (c) Information as a part of the communication process; (d) Information as a resource or commodity.

The idea, that information is embedded in socio-cultural contexts is not new, what has changed, for the information professional, however, is the extent to which the nature of the community has to be served. (McGinn, C., and Wittgenstein, 1984). Effective and efficient generation and dissipation of information is a proven key, determinant for competitive advantages. (Desouza Kevin C. and Hensgen, Tobin, 2005).

Community Information Centers (CIEs) vis-à-vis Community Technology Centres (CTCs), are playing an increasingly large role in the present, and the same trend would be visible in the future. The organizations making technology resources available to the members of the community who are disenfranchised, is continuing to have a major impact on narrowing the digital divide.

Community Development Programmes (CDPs): A Look Back: Dr. D. N. Mitra started a variety of community development programmes way back in 1915 by setting up of literacy classes, youth clubs, community libraries, and various other cultural programmes. Lala Lajpat Rai, Bal Gangadhar Tilak, Rabindranath Tagore started literacy activities in 1921 and 1922. Tagore established Rural Reconstruction Institute by bringing out literature exclusively for the neo-literates. The provincial Governments of Bengal, Bihar, Madras (Chennai), and Bombay Presidencies, headed by the Indian National Congress launched mass literacy campaign in 1937. Further, the Central Advisory Board of Education (CABE) proposed in 1944 that in 40 years (by 1984) the Board would provide universal education for children and liquidate adult literacy. India has made enormous efforts to improve the literacy rate from 5.35% (1901)-to 65.4% (2001), but it is expected, that this growth rate will slow down in the coming years. Though claimed by the Government, and NGO's, that absolute literacy would be achieved by 2020, this is a far reaching goal because of many factors. (Singh, Sahib, 2003).

Rural Information Centre: Reaching the Grassroots: The meaning of the term "Grass Root" as per Standard English language dictionaries are: (a) "Common or ordinary people"; (b) "Agricultural and rural areas of a country"; (c) "People inhabiting these areas"; (d) "Basic level." The library and information services at 'Grass Root Level' will amount to saying, that this be initiated at base level to all, whether they are farmers, agricultural workers, daily wage earners, carpenters, tailors, gardeners, laymen, women and so on.(Vashishth, C.P, 2007).

In India we have a stupendous task of rural development. This can best be done by taking technology to villages. Our villages need to be wired and connected to each other so as to let them enjoy the fruits of information technology. With as many as 16 official languages, 1,650 dialects and mother tongues, population of over 1,028 million plus, and over 5,93,643 villages, it seems rather a difficult task to provide equal opportunities to all, the urban and rural population to enjoy quality life.

Libraries had played a very significant role in Russian Revolution. It is the 'reading culture' of Russians which brought them at par with Americans and others in exploiting science to their benefit in defense and space research. We can say for sure, that Public Library can be a very potential instrument of social change, and for the all round development of rural India. These villages are those having the population range between less than 1,000 to over 10,000 in 35 states and union territory administrations. (Vashishth, C.P, 2007).

Ranganathan too had given thought to the establishment and maintenance of Rural Community Information Centres. Besides voicing his views on this topic in various articles, and lectures, he gave elaborate plans in his books mentioned below:

1. Postwar Reconstruction of Libraries in India.
2. National Library System : A plan for India (1946)
3. Library Development Plan : Thirty year programme for India with draft bills for Union and constituent states (1950)
4. Pubic Library Development Plan for Fourth Plan Period (1964)

Like Ranganathan, there have been other personalities who have associated themselves with Rural Library movement. "Gurudev Rabindranath Tagore as part of his rural reconstruction experiment and conviction felt the need for rural and mobile library called"Chalartika Granthagar." This service is being continued even today by Visva-Bharti University, (Shantinikan) with the financial and other material support from Raja Rammohan Roy Library Foundation.

Rural Community Information System: Their Role in Disseminating Information: The Rural Community Information System can be of extreme help in the following areas. (a) Issue information bulletins and packages; (b) Open their collection to NGOs to serve as outreach collection for them; (c) Maintain contacts with associations of tenants or residents, associations, trade unions, self help groups having contacts with disabled and disadvantaged, elderly, women,
Children, housing, employment, education, adult literacy and other bodies/societies/organizations/groups; (d) Compile Local Directories and develop mechanism for their continuous updating; (e) Collect non-book material/pamphlets/leaflets on neighborhood;(f) Maintain a classified holding of information material in whatever form available on issues such as : *Housing *I* Indira Awaas Yojna; *Employment; *Housing loan *I* finance; *Old age pension; *Welfare schemes; *Consumer affairs; *Education; *Welfare rights; *Civil rights; *Legal aid; *Rozgaar gurantee schemes; *Grameen Rozgaar Yogna; *Poultary/fishery/piggery/beekeeping *Health & hygiene; *Drinking Water; *Water borne diseases; *Roads; *Children's immunization programmes *Storage of produce; *Marketing of agriculture goods; *Rights of disadvantaged; *Minimum Wages; *Enabling people to help themselves; *Cooperate with village Panchayat/ Village Samiti; *Publicize Village contact schemes; *Cooperate with NGOs; *Provide secretarial assistance to illiterates; *Offer itself to take the role of village contact point; *Facilitate generation, exchange, organization and utilization of knowledge; *Assist the community with telephone, fax, SMS facilities.

The introduction to many e-government initiatives, and its successful launching is bringing a positive attitude towards the empowerment of knowledge society. Automating government departments is the key element in the e-governance initiatives. There are many similar successful projects launched by the governments of India with states such as Andhra Pradesh, Kerala, Karnataka, Madhya Pradesh, and West Bengal and MP being in the forefront According to recent Gartner report there are 2450 Indian Government Departments spread across 1,70,000 sites.(Web/Jalal, Samir Kumar,2007).

e-Governance and Community Information Centre Initiatives: A Glimpse:
E(e)-governance is the use of information and communication technology (ICT) to enhance information access and the delivery of government services for the benefit of citizens, business partners, organizations and government functionaries. "The goal of E(e)-governance is to benefit rural India and bridge the digital divide," (Web/Kant, Ravi, 2007).The Essential 'e' in E(e)-Governance is a

significant enabler of successful governance, and can go a long way in touching the lives of the common man. E(e)-governance initiatives are benefiting the masses. (Web/Das Gupta Soutiman, 2007). Many Indian states have IT policies that detail the roadmap to be used for better governance with the help of IT. Some of the projects mentioned in these policy documents have been implemented, while others are in various stages of deployment. Mission 2007, aims to connect 25,000 villages and create a Knowledge Centre in each in the first year by pooling resources from various states, government agencies and corporate. The goal is to connect 600,000 villages. Community-based organizations, Panchayati Raj (local self-government) institutions, self-help groups and the postal network to function as knowledge centres at the village level. The Department of Revenue (Karnataka), National Crime Records Bureau, National Highways Authority of India, Konkan Railways, IRCTC, and the governments of West Bengal, Haryana and Uttaranchal, to name just a few, have been using IT to empower their activities for some time now.

George Paul, Executive Vice-president, Marketing, HCL Infosystems, feels, that the growth curve of the e-governance segment has followed the pattern where the initial period sees slow growth, and this is followed by a period where there is a leap. "Thankfully, today it has reached a level where almost every state has an IT policy in place, and the target has moved from an IT-aware to an IT-enabled government," he says.

Sukhmani

The government of Punjab realized that e-governance could help in government functions such as information dissemination, approvals, transactions, and grievance redressal.It commissioned a project called Sukhmani as the citizen gateway for over 120 services provided by the government.(http://www.networkmagazineindia.com/200508/coverstory 01.shtml).

Bharti Airtel & Government of Gujarat Bridges the Digital Divide

"The project linking 13,716 Village Panchayats and Common Service Centers located in the remotest corners of the state is ensuring high quality and cost-effective video, voice and data services in the areas of agriculture, e-governance, health, education etc., at Village Panchayats. The connectivity also facilitates point to point, and point to multipoint video conferencing services, VOIP.

"Celebrating the creativity and innovation in e-Content contributes significantly to the bridging of Digital Divide among those who need information, and those who can provide information. However, an issue remains, there is a scope for strengthening the content that empowers the local communities, enriches local language content and enables

connecting people among themselves." http://southasia.oneworld.net/article/view/153806/1/5339.

DVAR Of Technology Opens For Gujarat Villagers: AHMEDABAD: What 'Windows' did to the world, DVAR (door) is trying to do for a small village in Patan district, Unjha : open the door communication and information technology. Direct Video Assisted Redressal (DVAR), a technology which can be installed on a wireless being pilot tested in Unjha, a village in north Gujarat. A small camcorder has been placed to help rural people communicate to experts, Government officials, for their problems related to health, agriculture and education, that too, sitting at the panchayat office."
(http://economictimes.indiatimes.com/News/News_By_Industry/Telecom/DVAR_of_technology_opens_for_Gujarat_villagers/articleshow/2289767.cms).

New Health Information Resource Now Available Across India
February 2007: All Indian residents now have complementary access to reliable, up-to-date health research evidence on health care interventions from The Cochrane Library. Thanks to sponsorship provided by the Indian Council of Medical Research (ICMR), the online database is now available to 60 million Internet users in India. The internationally renowned Cochrane Library is a collection of regularly updated evidence based healthcare databases, including gold-standard Cochrane Systematic Reviews, that can help clinicians and consumers make decisions about what treatments are best for them and their patients. This information is produced and assembled by The Cochrane Collaboration (www.cochrane.org), a UK registered international charity and are considered the leaders in their field. The Cochrane Library will help bring Evidence-Based Medicine to the forefront of medical practice in India. "The South East Asian Cochrane Centre is privileged to be actively involved in helping shape the future of medicine in India."(Web/Tharyan, Prathap, 2007). (www.cochrane.org)

e-ASHA: Lucknow: NIC UP State Unit, Lucknow has evolved an integrated I.T. solution eASHA (Automated Service & Help for All) as a G2G and G2C application. Using the services through eASHA, a citizen can get not only specific information of public utility from the Government departments, but can also pay different types of bills through eASHA kiosks/counters across the city. eASHA offers enquiries related to tax details, property valuation, vehicle registration, pension, public grievances, to begin with. It also offers collection of payments against bills related to Trade Tax, House Tax, Water Tax, and Road Tax etc.,all at a single counter.

e-Parichay: On the eve of Computer Literacy Day on 2nd December, "e-Parichay" was organized by CIC Irongmara under Barjalenga Development Block in Assam with the objective of spreading IT Education among the general masses of the Block. The "e-Parichay" program, in its first phase, provided for the opening of e-mail account for the rural masses, as well as the students of this block free of cost with the object to get them introduced to the Electronic Mailing System, and encouraging them to use the Internet in their day to day life in the sphere of information exchange. (http://informatics.nic.in/archive/inf2003Apr/happenings.htm).

A number of other states/local-self governments have set up information centres or kiosks to disseminate information required by rural people of the area. Some instances of such efforts are the Akshay Kendras (Kerala Governments), CLIC Project (West Bengal), CICs (North Eastern States of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Tripura), Jana Mitra Scheme (UNDP and GOI initiative in Alwar district of Rajasthan), Lokmitra Project (Himachal Pradesh Government), NATP Project, and NIRD Scheme (Andhra Pradesh), Raj Nidhi Scheme (Rajasthan), Wired Village Project (Maharashtra). Apart from the efforts initiated, by the government, a number of NGOs' are also working in this direction. A few important projects, areDrishtee, Gyandoot Scheme (Madhya Pradesh), Tejas Samadhan Kendra or General Resources and Information Dissemination Centre/GRID (Andhra Pradesh), Information Village (M.S. Swaminathan Foundation, Tamil Nadu), Sustainable Access in Rural India /SARI (Tamil Nadu), TARAhaat Project (Bundelkhand, Madhya Pradesh, Punjab)

The motive of increasing market base has prompted several corporate houses to take up projects aimed at setting up information kiosks in rural area. These are Amul's DISK Net (Anand, Gujrat), Hindustan Lever's iShakti (Andhra Pradesh), ITC's e-Chaoupal (Madhya Pradesh, Karnataka, Andhra Pradesh, Uttar Pradesh, Maharashtra). Ogilvy and Mather's Param (Uttar Pradesh), Parry's Indiaagriline.com (Tamil Nadu). In addition to the above mentioned initiatives, several new concepts are being developed which are very useful in the context of information dissemination in rural areas. Electronic Doorway Library (floated by DELNET), and Kiosk on Wheel/InfoThela (developed by IIT, Kanpur). (Chatterjee, Amitabh, 2004).

Role of Public Libraries in Information support: Public libraries are considered as an essential part of a modern society, and plays a very important role to support information for rural development. An effective public library system is a prime need of social, political, cultural, economic scientific and technological upliftment for any democratic set

up. (Devi, Tanuja and Devi, Madhuri, 2004). The public libraries, as the extended versions of knowledge centre have to undertake the work of collecting, organizing, disseminating both knowledge and information, in coordination with other institutions and experts, using computer and communication technologies, and guidance of the management and subject experts, collect information/knowledge under an interrelated system so that duplication is avoided, knowledge is pooled systematically, it is used, and also forwarded to National Knowledge Centre, for wider use in various contexts. It also takes into account knowledge available locally and makes it available in local languages. (Naidu, Giri, and Surendra Babu, 2007).

Position of Public Libraries Statewise: Tamil Nadu has 589 village Libraries, besides 649 part time libraries, and 12 mobile libraries. Andhra Pradesh has 355 village libraries, 1,238 Gram Panchayat libraries, 576 book deposit stations, and 3 mobile libraries. Karnataka has 10,510 Gram Panchayat Libraries, 295 book deposit stations, and 10 mobile libraries. The number of village libraries in West Bengal is 2,174, in Mizoram 341, in Goa 64, in Gujarat 6,908, and in Orissa 1,090. There is no mention of village libraries as such in Maharashtra, but the number of C-Category Libraries is 2189, and D-Category libraries are 3,690. Some of them, if not all, may be found in villages. (Vashishth, C.P, 2007).

Landmark Initiative For Public Libraries: Realizing the need for regular funding to public libraries and supporting related activities, the Government of India thought of establishing a body to exclusively nurture, and guard the interest of public libraries. Coinciding with the Birth Centenary Celebrations of great visionary, and social reformer Raja Rammohan Roy; the Government of India created a body on the pattern of UGC, ICAR, ICSSR and names it as Raja Rammohun Roy Library Foundation (RRRLF).RRRLF came to being in May 1972 with the basic objective to promoting the Library movement in small towns and villages in cooperation with state-governments, union territory administration and other organizations engaged in the promotion of library service and mass education. (Vashishth, C.P, 2007). The Public library is considered as the "Peoples' University." The RRLF has been established to vitalize the public libraries in the country. It has, therefore to assume the role similar to that of the University Grants Commission so far as the peoples' University is concerned. (Deshpande, K.S., and Hungund, B.B., 2001).

Survey based observation reveal, that there are a number of public, vis-à-vis other individual, academic and special libraries who have been acting as community information centres for long, but due to lack of public relation activities, the message of their good work is not being carried to the other parts of the country in the true sense. Though, a number of

libraries act as special libraries, and a several of them, are attached to some academic institution, the nature of services provided is at par with the public libraries and the services provided are absolutely free or extremely nominal, in times when every piece of information, irrespective of its nature comes with a price tag with it. It is enlightening to note, that the users of such libraries also range diversely taking into consideration their level of education l, age, cultural background, occupation, spatial contiguity etc.

Community Information Centres and Services : Efforts At Local Level: From 1985-86, the NIC has extended its informatics support services to State and District Administrations and signed memorandum of understanding with all the State Government/UTs of India. An Information and Facilitation Centre has been designed as a 'One-Stop Solution' to the problems faced by the common man. It provides a counter for filling the application forms of the applicants and affidavits. These services are provided at specified rates by the volunteers deputed by the two NGOs at the IFC. The counter also disseminates information about various Government Schemes and procedures.

Rashtriya Vachanalaya, Nagpur: It was in the year 1863 that Raje Raghoji Bhonsle laid the foundation of the first library, the Native General Library (now the Rashtriya Vachalanaya) in the olden part of Nagpur (East). Renowned families of Nagpur contributed to the growth and development of this library mainly with an intention to use it as a community information centre. The library has a rich collection of books exclusively on the cultural history of Nagpur. The library has a membership of more than 500 members and the library, after a span of more than 140 years acts as a cultural hub of Nagpur. The memoirs of the library indicate, that a number of artists of (national repute today) have performed in the library, which has hosted several artistic programmes, dramas, lectures, discussions etc. The tradition still continues. Citizens, who have been residing in this part of the city for long, have fond memories of its activities as the community resource and information centre.

Rajaram Sitaram Dikshit Library: Late Rajaram Pant Dikshit, a great visionary, social reformer, and philanthropist, who settled in Nagpur (as a Contractor) around 1860s, was instrumental in starting the Rajaram Sitaram Dikshit Library in 1869. Started as the 'Sitaburdi Native Club', it mainly functioned as a community information centre in the initial years. The later years, saw the club convert into a public library (rechristened as Rajaram Sitaram Dikshit Library) with an independent building of its own (centrally located in the city) purely from the donations of Shri. Dikshit in the year 1895.

The library soon turned into a Political, Social and Cultural centre of Nagpur. The memoirs of the library indicate that it has several first to its credit. The library was always considered pious, and had a magnificent share in the growth and development of Nagpur. It was always regarded as a place, for community centred activities and has been a witness to the confidential meetings of several budding politicians before the freedom struggle. The tradition of celebrating festivals (particularly Ganesh Utsav) in the library was started by noted thinkers like Bal Gangadhar Tilak and many which continues till date. This was the library, which introduced Marathi as the official language, for the first time to reach out to masses and the tradition still continues. The library started organizing book exhibitions on varied topics, for several age groups which has been kept alive even today. It introduced a special cell for children, and hosts numerable programmes for the benefit of little ones, including the Childrens' literary meet. (rural/urban) In 1944-45, the library opened membership to women for the first time, and since then, has the credit of organizing several health related programmes, competitions exclusively for the women. Dr. Tara Kelkar (first lady to be awarded a Ph.D from the Nagpur University) was fully supported by the library to satisfy her information needs. Collection of donations during disasters (Natural/wars etc.) was also imitated.

The Nagpur Municipal Corporation (NMC) awarded the library with the' Best Performance Award' for its exemplary social service, for the community.It was also awarded the 'Dr. Babasaheb Ambedkar Award' in 1989. The credit of organizing Lecture series on various current topics in the memory of renowned citizens of Nagpur, also goes to RSDV.The library has a rich collection of more than a lakh of books (a rare collection in Marathi),around 200 periodicals etc. During 1895-96 the numbers of members were just 48; today the membership has crossed 1800. Around 300 readers make use of the collection daily, and the library is still regarded as community centre for senior citizens who have been their beneficiaries sice long. More than 200 scholars have referred the library for their doctoral research. The membership includes people from varied fields from Madhya Pradesh, Rajasthan, Goa, Gujarat, and West Bengal. With the pressure of computerization, and in an effort to reach out to masses, the library is already on the verge of computerization, and with a dedicated team of professionals, RSDV, is sure to bring many more feathers in its cap.

The library also has a branch in the western part of the city (Gokulpeth) with a collection of 34809 books and 101 periodicals, with a membership of 1600 on roll. This branch is also a replica of its host, and organizes cultural events and other activities the whole year round.

Saraswat Sabha Library: September 21, 2007 will be written in golden words in the history of Saraswat Sabha Library. The library completed 90 years of glorious and dedicated service to the society. 'The library is the seat of knowledge'. With this motto in mind, three great visionaries of the community Late Surendra Krishna Ghosh, Late Nepal Chandra Majumdar and Late Nagendra Nath Sinha visualized the need of a Bengali library to propogate literary and cultural activities among different communities residing in the city. Under the able guidance of of Late Bipin Krishna Bose, the founder Vice-Chancellor of Nagpur University (now R.T.M.N.U.) they founded the library in a small room (Dinanath High School, Dhantoli) on September 21, 1917. The library was shifted to the present site in 1936. 1974, and 1992 proved to be the major landmarks, as the library further grew in dimension because of the financial support of the Government, and renowned Bengali families of the city. The library was elevated to 'A" class status by the Directorate of libraries, Government of Maharashtra in 1982.

The library has a rich collection of 28,000 Books (in four languages) and more than 500 members on the roll. The library organized the Nikhil Bharat Banga Sahitya Sammelan in 1966. The ladies wing is doing yeomen service to the cause of women in the city. The library offers varied services, counseling and guidance to its members who come from every strata of the society in various age groups. Guidance for competitive exams to students, organizing cultural events, providing referral services, dissemination of Bangla literature through support services etc. form a part of community services apart from the routine activities of the library. Moving towards modernization of services, the library is sure to reach out to masses in a big way. (Niyogi, K.K., 2007).

Manjiri Children's Library: One of the few libraries, exclusively for the children of all age groups, caste and creed, and beyond any spatial boundaries, the Manjiri children's library is situated in one of the best localities of the city, in a pleasing environment to look into the information needs of the children, and to meet the needs of this community. Started in 1992 by noted philanthropist Mrs. Sheela Dhanawate with a view to imbibe reading habits among the young ones, and provide computer facilities to the slum children, and job opportunities to lesser privileged women, the library also offers counseling services, and acts as a job placement centre. The library has a sizeable collection of books, CDs and other audio-visual aids. The children of the nearby slum areas have been fortunate to get space for reading and computer facilities free of charge (except for home lending, video games etc.). The library organizes several community oriented programmes throughout the year.

Vivekanad Vachanalaya: The efforts of Krushnarao Amin, H.G. Deshkar et al., bore fruits and Vivekanand Vachanalaya took shape in 1964-65, with the lenient donations of public. Arranging cultural programmes, festivals, special events and programmes, highlighting the importance of the libraries, act as a community information centre, has been the main motto of the library. The library started getting government grants since 1967. The library organizes discussions on socially relevant topics regularly for its members coming from different stratas of the society.. The library was elevated to 'B" class status by the Directorate of libraries, Government of Maharashtra and the vivekanand vachanalaya moved to an independent premise in 2002. The strive for excellence continues.

Ramkrishna Math Library, Nagpur: The Ramkrishna Math in Nagpur was envisioned by Srmat Swami Shivanadji Maharaj who laid the foundation for the ashrama in February 1927. Over the years, The Math has provided the space and circumstances for the spiritual awakening to thousands of residents and visitors to Nagpur. It has contributed further to the intellectual development in the sphere of religions and philosophical thought and community development programmes through a large Public Library with more than 44,650 books, 75 periodicals; a marathi monthly 'Jeevan Vikas'; a publication department with more than 351 titles in Hindi and Marathi. The library has around 1700 members on roll, and provides a free reading space with excellent computer facilities for its beneficiaries. The library is actively involved in all the activities of the Math and acts as a community information centre for all its members. The library stands testimony to the literary and spiritual growth of Nagpur.

South Central Zone Cultural Centre: The South Central Zone Cultural Centre was inaugurated on 2nd October, 1986 with the main objective to preserve, innovate, promote, develop, project and disseminate folk and tribal arts in particular, and sangeet, natak, lalitkala, sahitya and utility arts in general; revive the dying art forms; ensure creative development of communities engaged in preserving rare art forms forming a larger composite of national culture. The zone also has an information centre which takes care of the information needs of the artists coming from different regions. The Information centre has a collection of 2420 books, 2021 audio-visual aids. The centre also produces and directs its own programmes giving enough footage to the artists of this region by rendering all the needed support for marketing their skills, products etc., through exhibitions, regular display of their art forms. It maintains a strong base with the masses for the effective utilization of these skills. The media also helps a lot in giving due publicity to the events and artists,for the promotion and sustenance of their art forms. Natya

Samaroh, Vidarbha Kala Mahotsava, Bal Natya Prashikshan Shibir, Intensive theatre, Workshop for Handicapped, Street Theatre, Street Theatre Contest, Sangeet Natya Mahotsavaa, Natya Lekhan Spardha are some of the regular features of the centre, which are attended by a huge number of artists and commoners alike encouraging effective interaction between the groups.

Victoria Technical Institute: One of the oldest libraries of the city appreciated for its grandeur and antique furniture is attached to the Punjabrao Krishi Vidyapeeth, College of Agriculture, Nagpur. VTI stated functioning in 1902 from the funds collected from the Queen Victoria Memorial Fund (collected from the general public) to raise a fitting memorial to the Late Queen of England.VTI was registered under the Society's Registration Act XXI of 1860. The library has a very rich collection of rare documents exclusively on the local history of the region an primary. The information services provided free have been utilized by several citizens of repute. Information on Industries and Agriculture is passed on to the farmers and agriculturalists through the extension centre of the college. Discussions based on lectures (in regional language), on Agriculture and Environment awareness programmes, are regular features of the institute.

Apart from the above the Government Divisional Library and the Zilla Granthalaya play a major role in acting as the community information centre. Established in 1955, the Government divisional library has an independent building with a rich collection of more than 2 lakhs of books; 30 periodicals and 2883 members on roll. The library still continues the 'Char Ka' (4k) yojana (of M.P. Government1955) to reach out to the rural masses. This scheme still provides an opportunity for the rural folk to read standard literature, free of cost. The library has helped a large number of illiterates, neo-literates to keep themselves updated with the current literature. Looking to the benefits, the Zilla Granthalayas of the region have continued the scheme with a strong united efforts and networking of libraries. Despite the above facts, it is sad to note, that a number of Nagpur Municipal Corporation libraries, which are the true community centres, are in pathetic state today, lacking even the basic infrastructural facilities.

Recommendations of the National Knowledge Commission (NKM) In Support Of Libraries: The National Knowledge Commission, established on 13th June 2005, has set a time frame of three years (2nd October, 2008), to fulfill its objectives. Its main focal areas are Access to knowledge, Knowledge Concepts, Knowledge Creation, Knowledge applications, and Knowledge services.

The following issues are being addressed against the backdrop of Access to Knowledge i.e. Adult literacy, Delivery, and Public Information which includes rejuvenation of public libraries, establishing centres of excellence, information networks and a culture of information sharing in sectors like education, health, agriculture, business, research and development, food distribution, disaster management, security etc.; web portals as one-stop comprehensive sources of information on issues like water, sanitation, employment et al.; making right to information act more effective in its implementation.

Under the Knowledge Concepts, the NKM has given thought to literacy, levels, modes and language of education. Under knowledge creation, the following considerations like promotion of research, link research in public institutions with industry, diversification of funding of research institutions, augment research infrastructure, promote innovation, strengthening the IPR regime take precedence.

Knowledge application includes initiatives like e-learning, promoting agricultural research in line with the needs of the farmers; facilitate skill development for rural incomes, document, standardize, validate, disseminate and utilize traditional knowledge from throughout the country. Knowledge services include the promotion of e-governance, transparency and efficiency in government services etc.

Future Strategies And End Notes: An overview of the existing situation of efforts initiated by the public libraries as community information centres and the e-governance initiatives at various levels, throughout the country, is positively noteworthy, but due to several unanswered factors, the situation is still not too healthy. There is an urgent need to develop clear cut strategies, for effective implementation of these policies to reach out to the grassroots and benefit the community at large. Some of the strategies could be, Creation of information products on area specific databases (Healthcare, Social welfare, Education, Agriculture, Animal Husbandry, Industries, Finance and Investment) suiting the needs of rural development; Creation of sufficient dissemination centres; Networking of the rural information dissemination centres and cooperate with other Bodies; Working with Village Panchayats; Involvement in Village Contact Schemes; Refine Professional Skills; Develop Self Help Packages; Compile Local Directories of Experts; Create Database of Folk Knowledge; Remain in touch with RRRLF, RGF etc.

The information seeking patterns are diverse for every group in the society. These differences have to be understood from closer quarters in order to facilitate information support to the whole community.

Community Information Centres can be seen as indispensable agencies in improving the quality of the life of masses and communities in particular. Diffusing information to rural communities using the traditional media, and telecommunication system has great potential. Community information systems vis-à-vis centres should involve masses for the development of local content. The dream and vision of empowering the rural India, has to become a reality.

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Need for a State Policy and Legislation for Development of Public Library and Information System in India with Special Reference to Jharkhand State

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ABSTRACT

This article deals with the need for a state policy and legislation for development of Public Library & Information System in India in general and in Jharkhand in particular. Firstly the current status of Public Libraries and State Policy along with legislative aspects has been discussed in detail. Then the component of the state policy has been depicted which includes preamble, objective of services, areas of services, management and administration of the Public Library & Information System, collection development, Human Resource Development aspects, Financial issues, Libraries managed by NGOs etc. In the second phase aspects of library legislation have been described in a comprehensive manner. Some of the model acts for legislation have been depicted briefly. Authors opine that the legislation is the need of the hour for organized and systematic development of the Public Library & Information system in modern context. Building the fund for Libraries & Information Centres are essential for smooth running of the system. Currently only 15 states have passed the Library legislation Acts, that is, most of the States/UTs are not having this act including Jharkhand. Hence, there is great need of State policy and library legislation for development of Public Library & Information System in Jharkhand. Currently the development of public libraries in Jharkhand is very poor due to various reasons including the financial crisis. Through sound state policy and legislation for Public Library & Information System, there will be an efficient and organized Library & Information Services in the state. This paper intends to present views to strengthen the Public Library & Information Systems in Jharkhand State, which is the burning issue here.

Keywords State Policy, Legislation, Public Library, Information System, India Jharkhand State

Introduction

Today, the society is passing through the phase of information explosion. The element of information has became central in the society and the modern society is referred as the "Information Society". To face the new challenges of this information society, public libraries play vital role in providing the services to satisfy the informational needs of the society.

Public libraries are social institution offering information dissemination services based upon knowledge for vivid public groups on social, political, economic, cultural and other relevant matters. Under the patronage of aristocracy, the public library system in India has developed over the year at slow pace. But the new independent India, with the democratic set up, identified the need for public library and information system which will work for the common good and will build the strong foundation of democracy here. According to the constitution of India, public library and information system is a state responsibility. So, all states are vested with the power to establish public libraries at various levels in the state. "As per the Constitution of India, the subject of public libraries forms the part of the State List. While Education is the part of the Concurrent List (No.25)"[1]. Therefore it is the responsibility of states to think about public libraries. But it is disheartening to notice that only few states have come up with the public library Acts for the development of the public library system (Till now 15 states out of 28 states & 7 Union Territories). The States are also lacking for the state policy for the Public library and Information System in the state, that's why the organized and systematic development of the Public Library & Information System is a dream for many states and UTs in India. Jharkhand State is also needing a State Policy for Public Library and Information System as the development of Public Libraries in the State is very limited.

Definition

"Alvin Johnson rightly calls Public Library as 'people's University'[2]. The Public Libraries are established for the public and by the public of the society. As per UNESCO public Library Manifesto:[3]

- It is a Public Library which being the local gateway to knowledge, provides a basic condition for lifelong learning, independent decision making and cultural development of the individual and social groups;

- A living force for education, culture and information, an essential agent for the fostering of peace and spiritual welfare through the minds of men/women;
- The local center of information, making all kinds of knowledge and information readily and freely available to its users;
- Accessible for all, regardless of age, race, sex, relation, nationality, language or social status;
- And lastly, the Libraries, which have collections and services, all types of appropriate media and modern technologies, as well as traditional materials with high quality and have relevance to local needs and conditions. Material must reflect current trends and the evolution of society, as well as the memory of human endeavor and imagination.

Public Libraries in India

Since 1808 after the decision of the Bombay Government to register libraries to give copies of books published from the 'Funds for the Encouragement of Literature' for the public to the present, public library movement has been receiving supports from the state and Central Government. The penetration of the public libraries in India is reflected in the following table:

Penetration of Public Libraries in India

Demography of India	Number	Public Libraries##	Number	%age Coverage
State & UTs	35	State Central Libraries	28	80%
Districts	592	District Libraries	451	76%
Talukas#	3987	Taluka Libraries	501	12.5%
Villages##	5,87,226	Rural Libraries	28,820	4.9%

Sources:# Census of India,1991[4], ## Ghosh,2005[5]

From this table, it is clear that the growth of public libraries in India at different levels, is not satisfactory. Specially at Taluka and Village level, the development of public libraries is very low.

Public Libraries in Jhakhand State

From the point of view of the development of public libraries, Jharkhand State is lagging behind. At present, there are 18 public libraries established by the Government of Jharkhand. These are as follows:[6]

i. State(Public) Libraries(4) at:Ranchi, Chaibasa, Dhanbad, Dumka
ii. Divisional Library(1) at: Hazaribagh
iii. District Libraries(5) at:Gumla, Lohardaga, Daltonganj, Giridih, Godda
iv. Sub-Divisional Libraries(8) at: Garhwa, Latehar, Pakur, Simdega, Chatra, Sahibganj, Saraikela(Kharswan), Khunti

Apart from this Government run public libraries, there are few other public libraries which are managed by the private bodies such as Sri Ram Krishna Mission Library, Ranchi; Sri Yogada Ashram Library, Ranchi; International Library-cum-cultural Centre, Ranchi; Union Club & Library, Ranchi; Budhia Public Library, Ranchi; Urdu Public Library, Ranchi etc.

"As per census of India 2001, Jharkhand has the low literacy rate of 53.6% and the population is 2,69,45,829".[7] Here comes the crucial role of public libraries in the success of the literacy mission of India. The establishment of sufficient number of public libraries in the state can be proved as effective tool in the literacy drive for progress and development of the society. For organized and systematic development of public library system, the library legislation is an effective tool.

Why Library Legislation?

The Library Legislation is concerned with the development of the public library and Information Services. The UNESCO/IFLA Public Library Manifesto also states that it is the primary responsibility of the Govt. of the area to provide the facility of public library and information services to the public. It may be the national Govt. or a state Govt. or a local Govt. like a Panchayat, a Municipality or a Corporation etc.

UNESCO, IFLA, FID, ILA and several other high authority in the field of Library and Information Services have strongly recommended the need of library legislation for organized establishment and functioning of the public library and information system. The main reasons behind the public library legislation are as follows:

- It provides the guidelines for the structure of the Public Library and Information System that is appropriate for the area and concerned authorities.
- It saves the Public Library & Information System from any type of interference of bureaucracy and politics and thus the system functions effectively and smoothly.

- It ensures the perennial and adequate finance for development of the public library and Information System through introducing the concept of the library cess, Govt. grants, Library fund etc.
- Library legislation provide the opportunity to the representative of the public for participating in the functioning of the public Library and Information System at all levels.
- It defines the responsibility of the Government for the development of the Public Library & Information System.
- It presents the constitution and functions of the Library authorities at various levels like National, State, District, Panchayat levels etc.

Thus, library legislation is an effective tool for the growth of the public library movement through recognizing the state's responsibility to establish and maintain the public library and information system as its statutory obligation.

Public Library Legislation in India

As per the India Constitution, the state has the responsibility to establish and maintain the stable, uniform, effective and integrated public library and information system in the state. Library legislation becomes highly necessary and vital for organization and systematic functioning of the public library and information system.

"Legislation is as necessary for the constitution of proper supervisory, advisory and administrative machinery as it is for the provisions of steady and perennial sources of finance. The library authorities are so constituted that they become responsive to the public. The legislation, thus, saves libraries from becoming pawns in the hands of bureaucracy."[8] thus the library legislation/Act ensures the effective and efficient organization of public library and information system without any interference of bureaucracy and politics.

It is disheartening that till now only 15 states out of 28 states and 07 Union Territories, have passed the public libraries act. They are: Tamil Nadu(1948), Andhra Pradesh(1960), Karnataka(1965), Mahrashtra (1967), West Bengal(1979), Manipur(1988), Kerala and Haryana(1989), Mizoram(1993), Goa(1993), Gujarat and Orissa(2001), Uttarkhand (2005), Rajasthan(2006) & Uttar Pradesh(2006).

Thus the public libraries act is yet to be passed in 13 States and 07 Union territories of India.

Public Library Legislation In Jharkhand State

Jharkhand State was formed on November 15, 2000. The Public Library Legislation is yet to be passed in the state. In this regard "Jharkhand Information and Library Association"(JILA, formed on April 15, 2007) is playing the key role in association with the Government of Jharkhand. JILA is drafting the public libraries Act for Jharkhand state on the direction of the Government of Jharkhand. The status of public libraries in the state is not satisfactory, the main reason may be cited that the state is not having public library legislation till now. Hence for proper development of the public library and information system, the public library legislation is mandatory in the state.

Objectives of the Study

The current study has the following objectives:

- To present the general view on public library and the current state of public libraries in India in general and in Jharkhand in particular.
- To explain the concept and need of public library legislation/act in brief and its status in Indian States with special emphasis on Jharkhand state.
- To present a state policy for public library and information system considering various relevant factors with special emphasis on Jharkhand state.
- To study various public libraries acts of Indian States with special emphasis on Model Acts.

State Policy for Public Library & Information System Need

A State Policy is very much needed for organized and sound development of the public library and information system. This policy can be framed considering relevant aspects of public library and information services for specific area. The policy can act as the guideline and standard for library and information services and on that basis public library legislation process can be initiated and passed for the area concerned.

As per the constitution of India it is the state's responsibility to develop a public library and Information System for progress and prosperity of the society. The state Government has responsibility to inculcate the fundamental human values such as sense of freedom, prosperity, culture socialism, democracy etc in the society. This great challenge can be achieved through organized. Public Library and Information System, which provides the opportunity to citizens of being well informed on various relevant topics. The state policy is needed for public library and Information system so that the citizens of the state can participate in achieving the goal of the state i.e. democracy in India. Constructive

participation and the success of democracy mainly depend on effective education, access to knowledge/information. "The public Library and Information System being the local gateway to knowledge, provides a basic condition for lifelong learning, independent decision making and cultural development of the individual and social groups."[9]

In Jharkhand also the State Government is trying hard to bring prosperity and progress in the society. The literacy rate of Jharkhand is 53.6%(Census 2001). The low literacy rate is one of the major factors behind the backwardness of the state. Here an efficient Public Library and Information system can play the vital role in eradicating illiteracy in the state. Hence a proper state policy for public library and information system is the need of the hour in Jharkhand.

Objectives of Services

The objectives of the Public Library and Information Services include the over all progress and prosperity of the members of the society through catering to the needs of all section of the society.

- Irrespective of any kind of discrimination such as caste, creed, sex, religion or social status etc.
- To the disadvantaged member of the society, such as physically handicapped, patients in the hospitals, prisoners etc.
- To the people residing in remote areas, rural areas and backward areas etc.
- To the residents at various administrative levels as far as possible such as village, panchayats, block, District etc.

The main objective of the Public Library and Information Services is to disseminate knowledge as widely as possible so that the gap between the knowledge rich community and knowledge poor community in the society can be bridged nicely. Thus democracy in the real sense may be maintained in the society.

The State Government should believe that a Public Library and Information System can act as the living force for education, culture and democracy etc as we all know that a public library is a people's University. Ultimately the aim of the public library and Information Services is to produce an intelligent, knowledgeable and refined citizen for the state.

Scope of Services

In modern age, information has become vital element for overall progress and prosperity of the society. It is very valuable in all walks of life. The public Library and Information System has the main duty to acquire, process and disseminate information to the general public to satisfy their information needs for better life style.

Proposed Policy

In this regard, Public Library and Information System should play the key role in organizing the free access to information for common people. The Public Libraries should act as community Information Centre to:

- disseminate all kind of basic relevant information to various sections of people including disadvantaged members such as downtrodden people, physically challenged, prisoners, patients in the hospitals.etc.
- provide opportunity to people across the state at all levels such as Panchayat, Village, Block, District etc.
- provide all kinds of information
- develop local histories and other local studies
- utilize the services of National Informatics Centres and other Information Communication agencies etc.
- ensure free flow of information irrespective of sex, caste, creed, religion or any other discrimination.

The Public Library and Information System should adopt Information Technology to make the services speedy, accurate and more effective and efficient in order to satisfy the laws of library science.

Literacy & Education

India's literacy rate is depicted in the following table (from 1951 to 2001):[10]

YEARS	LITERACY %
1951	18.33
1961	28.30
1971	34.45
1981	43.57
1991	52.21
2001	65.38

From the table, it is clear that in 1951 the literacy rate was very poor i.e. 18.33% and in 2001 the figure has improved as 65.38% which is also not a good figure in modern days. The Government of India launched the National Literacy Mission on May 5, 1988. the National Adult Education Program(NAEP) in 1989 and the Total Literacy Campaign(TLC) in 1991. Education for All (EFA) program has been launched in recent years. The public Library and Information System can play a crucial role in combating illiteracy through supporting these literacy drives with its resources and services. It is the responsibility of the local library authorities to provide services to illiterates and neo-literates because they are also contributing to the library cess.

Jharkhand State also has low literacy rate i.e. 53.6% (census of India, 2001). So here also there is great need to support the literacy programs through public library and information services in combating illiteracy. These services can contribute to the general education process also.

Proposed Policy

The public Library and Information System should play great role in literacy and education through:

- Providing services to illiterates, neo-literates, semi-literates and participants of non-formal education programs
- Supplying various information sources like books, films, recording and other learning materials etc.
- Planning the educational activities
- Training the users and librarians in skills and techniques essential to adult education activities
- Doing all possible activities to extend the adult education
- Providing services to people pursuing self education
- Interested in self-employment schemes, semi-skilled
- Serving to children, youth, casual readers, housewives, senior citizens etc.
- Serving to students, teachers and researchers for higher education and research activities etc.
- Providing ideal environment for developing reading habits for all.

Art & Culture

Art and Culture is the identity of any country. It is the responsibility of public libraries to preserve and conserve the Arts and Cultural heritage of area concerned. A public library acts as a cultural center by acquiring resources on the excellence of mankind in vivid cultural fields. The public library & Information Services also promote awareness of cultural heritage, appraisal of the arts and literature, interest in scientific achievements and innovation through various cultural and social programs.

Proposed Policy

The public library and information system in a developing society like ours should:

- Preserve and conserve cultural heritage and Arts

- Support and coordinate cultural diversity
- Provide access to all forms of cultural and artistic expression
- Encourage inter cultural dialogue through cultural programs.
- Organize cultural activities under library extension service
- Support oral traditions

Socio-Economic Development

Benjamin Disraeli has said "As a general rule the most successful man in life is the man who has the best information". [11] Information is vital in decision making, production, export, economic administration etc. the public Library and Information System can be linked with networks of other type of libraries in order to provide required information to the needy so that it will give fill up to production in various spheres of economic activities. Thus public libraries help in economic development by increasing national wealth and thereby standard of living.

The public library and information system also plays social roles through various society based services. Thus public libraries contribute to the socio-economic development in the state.

Proposed Policy

The public library and information system should:

- Provide access to all informational resources on socio-economic activities
- Attract sociologists and economists for creation of socio-economic knowledge for the society.
- Have resource sharing with other network of libraries in order to foster socio-economic development
- Consider the concept of democracy
- Act as self-education center and community information center for the society.

Management of the Public Library & Information System

India being a large country with a population of 1,02,70,15,247(census of India, 2001) needs a good network of public library and information systems at various administrative levels such as village, panchayat, block, district and state. The state Central Library should be as an apex body, which will control the other public libraries of the State overall. The District Libraries can coordinate with other libraries in the particular

district. This two-tier public library and information in the state can be effective one.

India is having 28 states and 07 Union Territories (including 01 National Capital Territory of Delhi). So this fact should be kept in the administration of the public library and information system.

Proposed Policy

Considering the existing public administrative system in India states, the following state policy can be suggested:

- to control and supervise the administration of public libraries, the different library authorities should be established at various levels areawise. For example State Library Authority (SLA) at the State level, District Library Authority(DLA) at the District level, City Library Authority(CLA) at Municipality/Corporation levels and Panchayat Library Authority(PLA) at Panchayat level etc.
- The SLA should be headed by the Minister of Public Libraries with assistance of a group of public library and information service professionals and a group of members from other fields such as legislature, academics etc.
- A nominated/elected person shall chair the Local Library Authority (LLA) such as DLA/CLA. He will be assisted by a small group of public LIS professionals and members from other fields.
- The Department at the State level shall be the Directorate of Public Libraries through which all the affairs of public library and Information system are controlled, supervised and coordinated in the state.
- The top most executive official will be the Director of Public Libraries who will be a LIS professional.
- The terminology of the public libraries shall be changed in the future as follows:
    - State Public Library and Information Centre
    - Regional Public Library and Information Centre
    - District/City/Division Public Library and Information Centre
    - Mandal/Block Public Library and Information Centre
    - Rural/Mobile Public Library and Information Centre

- Panchayat/Village Public Library and Information Centre

The designation of the staff should be framed accordingly. There should be sufficient number of LIS professionals appointed for smooth and effective functioning of the public library and information system.

Collection

The collection development is very important aspect of a library. The public libraries should also develop their collection considering the changing trends and condition and the informational needs of the society.

Proposed Policy

The State Government should devise an exhaustive collection Development policy for public library and information system in the state. The public libraries should acquire all kinds of information sources – print and non-print media. The collection acquired should be:

- Useful for general public of the society
- Creative to create and strengthen the reading habits among children and youth.
- Understandable to the neo-literates, semi-literates etc.
- Value-based having orientation towards cultural and socio-economic development.
- Illustrated documents and charts for illiterates.
- Useful for unemployed youth.
- Rich in strengthening the democratic base of the society and relevant to the local needs.

Human Resources

It is strongly felt that sufficient human resources are essential for organizing effective and efficient library and information services. This can be achieved through creation of a distinct cadre of State Library and Information Services, which should be at par with other State Government Services

Proposed Policy

For developing proper human resources, the State Government should have following steps:

- Constituting a cadre of State Library and Information Services and Sub-ordinate Service for the purpose.
- The appointment for the mentioned services and condition of service should be as per the provision of article 309 of the constitution of India, which includes the civil services at state and national level.

- All members of this service should be regular Government servant.
- Adequate human resources should be recruited to the public library and information system.

Finance

The philosophy of the Public Library and Information Service is to render the services free without changing any fee from the people. However, a nominal fee may be charged for special services. So far effective public library and information services, the Government should manage a sound financial base for the system. This can be done through library legislation and having the provision of library cess, grants etc. for perennial source of income for the library authorities.

Proposed Policy

For managing sufficient finance for public libraries, the State Government should:

- Enact public library legislation/act.
- Impose library cess as per the local conditions.
- Give grants time to time as per requirements.
- Establish the state Library foundation on the line of Raja Rammohan Roy Library Foundation.
- Bear the establishment charges of the Public Libraries.

Libraries Managed By NGOs

There are many public libraries managed by NGOs. The Government may support these libraries as they are also contributing to the progress and prosperity of the society. The Government especially in those areas where Governmental public libraries don't exist encourages these libraries.

Proposed Policy

The State Government should support and encourage the libraries managed by NGOs such as trusts, mahila mandals, temples, religious organizations and other non-Governmental organizations.

- The local Library Authority (LLA) like DLA/CLA etc. should support and assist the libraries of NGOs.
- Special Grant-in-Aid policy should be framed for this kind of libraries.
- There should be a coordination of Government public libraries with libraries maintained by NGOs.
- If the condition is favorable the Government for better services may undertake these libraries.

Library Legislation be Mandatory

As per the Indian Constitution the public libraries forms the part of the State List while education comes under concurrent list. So the authors strongly express the need of an amendment to bring the issue of public libraries under the concurrent list. Thus the national government will also have the responsibility for development of the public libraries at national level. Thus the internal party politics of the state will not hamper the development of public libraries in the state. The library legislation is the integral part of the state policy for public library and information system, so the legislation should be made mandatory for all states in India.

- Strengthen the public library and information services in the state.
- Maintain guidelines and standards in library and information services.
- Maintain perennial growth of fund for public library and information system.
- Involve people's participation in the public library movement at all levels.
- Utilize the public library and information system for the socio-economic and cultural growth of the society including the growth of literacy and democracy etc.

Thus ultimately the legislation brings progress and prosperity in the society.

Jharkhand state is not having library legislation which is the main reason that here the development of public libraries is not satisfactory. So there is great need of library legislation in Jharkhand.

Model Acts

There are some effective model acts devised by Dr. S.R. Ranganathan, Indian Library Association and Dr. Velaga Venkatappaiah etc. the first public library Act was Madras Public Libraries Act devised by Dr. S. R. Ranganathan in 1948. Many of the State Public Library Acts are based on the model act of Dr. S. R. Ranganathan. The model Public Libraries Act of the ILA was drafted on the same pattern considering the latest developments in the administrative system and the scheme of the Government at State and Centre. This was later revised as "Model Public Library and Information Services Act".

Considering the latest needs and developments Dr. Velaga Venkatáppaiah drafted the Model Public Library and Information Services Act which was discussed in a National level seminar held at Chennai, 12 & 13th June, 2003. This act may be re-examined and considering the needs and requirement of the state, the remaining states can enact library legislation on the basis of these model public libraries

acts. Jharkhand state is also drafting the act incorporating all the good of these acts.

Conclusion

The issue of the State Policy for Public Library and Information System is very important. This enlightens the way for progress and prosperity in the society. It will be far better to have a national policy for public library and information system for all round development of public libraries at national level.

Jharkhand State does not have proper development of public libraries because of the absence of the library legislation. Hence a state policy for public library and information system is the need of the hour to bring peace, progress, prosperity and all-round development in the State.

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People's Knowledge and People's Society

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ABSTRACT

Society is shifted from the man power to brain power economy. Knowledge is recognized as a social need and economic value based commodity. People's Knowledge is an intangible and intellectual asset and it is a prerequisite for the development of people's society. Brain power significantly influences the organization ability to withstand chaotic competition and leveraging the customer base and it is crucial input incite information industries economy.Bee's **"HONEYCOMB"** is an ideal strategy for design and develops the brains management architecture and ICT is a powerful strategic tool for connecting the world minds with a single wire towards brains management at the work place and even at remote area of the customer.

No doubt, People's Society can be changed as a dynamic only through the people's Knowledge. Therefore, there is a need to redesign and reform the knowledge management architecture and its approaches.

Keywords: Brain Power, Brian Storming, Sharing, Face time, Honey Comb, Strategy.

Introduction:

In this knowledge Era, Society shifted from the man power to brain power economy. Knowledge is an intellectual asset and it is a prerequisite for the socio-economic and political development of the society. People's knowledge is a neural based commodity and it is a powerful enabler to transfer all the natural resources into the assets.

People's knowledge is only leading the world with the development of world class brain power.

Modern organizations are adopting the knowledge based management change for creating the value added products/services, because of its economic value. Knowledge organizations manage and preserve the people's knowledge for the present and future needs of the people's society. Knowledge organizations also used the knowledge resources for their self sustainable and make timely transfer to the people's society for creating better value.

Brains Management is complex and dynamic organizational function and encompassed with phased manner multilayer process. Therefore, there is a need to develop and design the people's knowledge process architecture; strongly and highly integrated ICT and Neural based distribution networks for transfer the people's knowledge to the People's society timely and effectively.

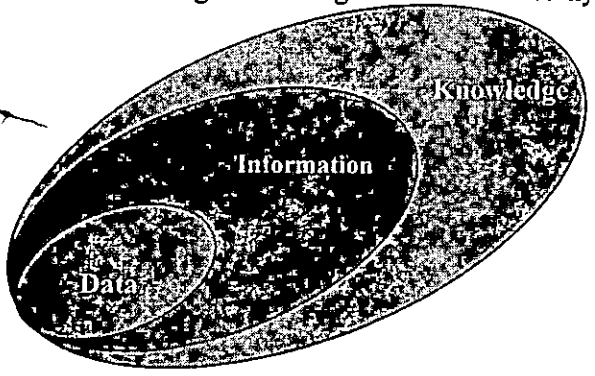
Bee's **"Honey Comb"** concept is an ideal strategy and best provoke for the architectural design of knowledge management process cycle. Success of the brains management is depends upon the ability of Knowledge process Manager; its timely applications and usage by the people's society.

Knowledge:

People's Knowledge is embedded with group of ideas. Human brains are the generators of knowledge.

According to Webster's Dictionary- "Knowledge is the fact or condition of knowing something with familiarity gained through experience or association".

Knowledge may be recorded in an individual brain or stored in organizational process, products, facilities systems and documents. Knowledge can be organized in to hierarchy:



Data-	Cotton
Information-	Yarn
Knowledge -	Cloth

Features of Knowledge

Knowledge is an intangible and intellectual asset. It is an evergreen, dynamic, shareable, renewable, storable and transferable one. Knowledge is generated and created through burning of human brains, Brain storming, sharing and reproducing more knowledge through recycling and blending of existing knowledge.

Types of Knowledge

Broadly speaking, knowledge may be categorized as Tacit knowledge (informal) and Explicit knowledge (formal). Tacit knowledge is an individual or personal; it is hidden in the human brains gained through the experience and observations. Explicit knowledge is codified and it may be recorded and stored for the future of people's society. Further the explicit knowledge may be identified as;

Sthula Sarira: sthula sarira means form or media of information, in terms of print or digital form and

Shukshma Sarira: Contents of the knowledge is sukshma sarira. Contents of the knowledge as follows:

- Bibliographic
- Textual
- Numerical
- Sound, music and picture.

In the growth of knowledge cycle, knowledge can be evolving through four stages.

Discovered Knowledge: Discovered knowledge is mostly required through creative process in which the person expects a unique idea from a reality which others had taken for granted.

Codified Knowledge: Explicit knowledge may be codified in objects, rules, systems and methods.

Migratory Knowledge:
Invisible Knowledge:

Knowledge Resources: Knowledge Resources may be recognized as:
Internal Knowledge Resources
External Knowledge Resources

Internal Knowledge Resources: Organization People's knowledge resources are recognized as internal knowledge resources. Organized Knowledge Resources is sharable and distributed. Internal people's knowledge resources are as:

- Organization Polices
- Meeting proceeding
- Intellectual Assets
- Administrative databases
- Work force knowledge
- Work force competency
- Recorded solutions for problems
- Organization Manual
- Organization process
- Network resources
- Best practices

External Knowledge Resources: External people's knowledge resources are spread through out the world.

- Online Resources
- Off line Resources (CD ROMs)
- Out sourcing Resources
- Originated Recorded Information
- Net Work Agencies
- Internet Resources

Significance of Knowledge:

Knowledge is a strategic resource for better thinking, better living, making right decisions, and teaching, learning, research and managing the resource in a most economic way. Knowledge application in the Industries and organizations is improve the value of assets. So, knowledge is recognized as a wealth of the nation.

Needs of Knowledge Management:

Knowledge Management is considered a key part of the corporate strategy to use expertise and knowledge assets to create sustainable competitive advantage in business environment. It is the collection of the processes that governance the creation, dissemination and utilization of knowledge. The basic goal of knowledge management is to transform the people's knowledge to the people's society for increasing the value of assets and social life.

Bee's "Honey Comb" is an ideal strategic concept and best provoke for design and development of people's knowledge management process

architecture. The Bees honey process cycle and its functions are as follows.

i).Bee's are design and develop the architectural structure of the honey combs. House hold bees keep the hives clean and ventilated with sacs; they also build the new combs to store the collected honey.

iii). Field Bees are older Bees that have advanced from household duties and their job is to search for nectar and collect the nectar from the opening flowers and store it in their Honey Sacs for the return journey to Hive.

iv). Full moon day Bees suck the honey completely for their self sustainable and produce the new honey.

v). Bees communicate their new discoveries of sources of nectar to other in the Hive by performing the dance.

Knowledge Management Process:

Knowledge Management is a set of process, which are encompassed in phased manner. Knowledge analysis and Knowledge planning are two important and necessary steps for the ability to manage the knowledge resources in the organization.

- Knowledge analysis is used to analysis knowledge usefulness
- Knowledge planning is developing multi layer knowledge process.

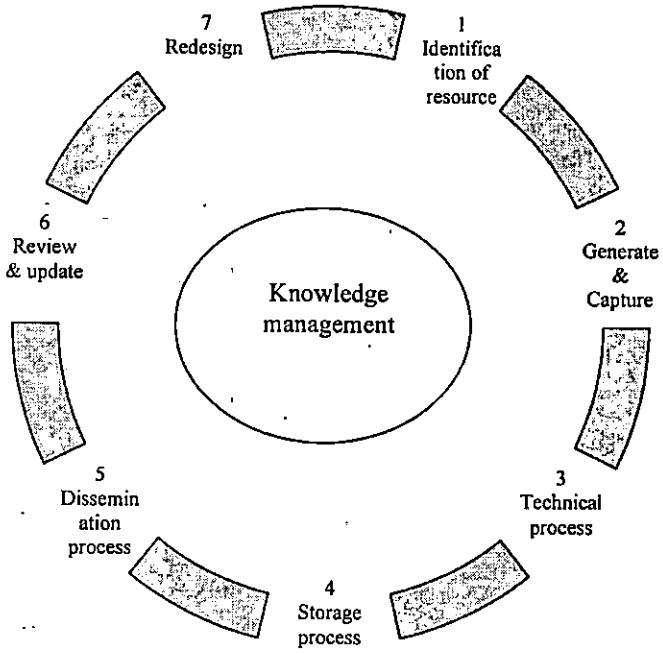
Knowledge Management Process applied various drivers such as standards, methods, systems and strategies; controls such as phased control or steering control for reducing the wastage expenses and timely output with productivity. Effective knowledge process system creates the price value of the knowledge products/services.

- **Input Process:** input process is involved in identification of customers and their needs, finding of knowledge resources, capturing the external knowledge resources; and facilitate for creating and generating of internal knowledge resources.
- **Technical Process:** technical process is an analysis and interpretation of knowledge resources with the help of drivers and controls for designing the product/services packages; and creating economic and customer value to the products/services timely.
- **Storage Process:** Storage process involves preservation and conservation of processed knowledge resources in a systematic way for the present and future needs of the people's society. Security measures are very important for safeguard the knowledge resources.

- **Output Process:** out process involves making easily and timely accessible of knowledge products/services to the end customers.
- **Distribution Process:** it is process of transfer the right knowledge products/services to the right customers in the real time.

8.1. Types of Knowledge Process:

- Individual knowledge process cycle
- Group knowledge process cycle
- Organizational knowledge process cycle:



Organization Knowledge Process Cycle

Knowledge Management Tools

Intranet and Internet: Internal network based on the Internet-Information can easily communicate, distribute and facilitate project collaboration.

GroupWare: E-mail, Web Navigation tools that support collaborative activities of work groups

Data Ware Housing: Reporting and query tools, that store current and historical data extracted from the various operational systems for report analysis

Work Flow Management: Document management, work flow network store management

Retrieval Tools: Enables text search, retrieval and document management.

Strategic Knowledge Management:
Modern knowledge centers are facing challenges and problems both form the internal external forces such as:

- Loss of knowledge: as job recruitment change rapidly and personnel move across departments. Knowledge moves such personnel.
- Lack of organizational culture for sharing of knowledge
- In adequate knowledge system
- In effective learning organizational culture
- In adequate communication system
- Lack of sharing best practices across various sections

Need of Strategic Knowledge Management:
The primary objective of the strategic management is to over coming the internal weakness and external threats and improve the internal strength through make use of external opportunities for better performance for not only the survival and development , but also improve the image of the organization. The following parameters should be considered for formulation of strategies.

- Accessibility
- Availability
- Adequacy
- Update ness
- Measurability
- Reliability
- Shareable
- Security
- Timely etc.,

The some of the strategies are as follows

- To formulated the result oriented objectives
- To design the need and value based services
- Knowledge based organization change

- Automation of process systems
- To use of suitable drivers and controls
- Reduce the process cycle cost and time
- To create the price value
- Information pollution control
- Update with current information
- To design Tailor made services
- To tie up with knowledge networks
- Follow the best practices
- Creating continuous learning opportunities for the people
- Focusing more on the flow circulation of information than its stocking
- Motivating to share of knowledge
- Securities measures such as electronic eye (ICCTV) and pass words for safe guard the network, database and other knowledge resources.
- Motivating and Training

Modern Knowledge Management:

Information and communication Technology (ICT) is a boon for the development of the modern knowledge management system and it is narrow down the world in to a Global Information Village.

Internet is a powerful and dynamic electronic device. It is connecting the world minds with a single for sharing and using of Borderless information at any time and at any where easily and timely accessible at the finger tips of the World's peoples. Intranet is also helpful for transferring and sharing of organizational people's knowledge and makes more knowledge and its value. Information and communication Technology (ICT) is also most helpful in the processing of Information and Network shearing; of information such as stored in structured database; reduce the distance, save the space and timely communication.

Share and Success: Sharing of Money and other resources is a decrease, but sharing of Knowledge is increases both quantity and quality. Sharing is powerful concept in the knowledge management. Individual or organization can benefited through adopted this concept in their day today activities. Brain storming and face time (breaking hours) is facilitating the organization peoples for sharing their knowledge. Therefore, sharing of knowledge is leads to increase the robust economic value.

Significance of Knowledge Processor:

Knowledge Manager is a back bone of the knowledge Process, so he is also known as knowledge processor. The concept of **"Nala Bhima Paka"** in Mahabharata is a suitable and ideal strategy for the process owner. In this direction, Knowledge Manager should be **"PAKA PRAVINYA"** for design and developing the need and value based knowledge products/services. Knowledge Processor should be empowered with knowledge and skills for achieving the task in a better way.

Conclusion:

No doubt, People's Knowledge is a strategic resource and power to manage all the remaining natural resources and transfer into the assets. People's society can be changed as a dynamic, only through the application and use of people's knowledge. Therefore, People's knowledge has major significance for the development of People's society in a better way. In this direction, modern knowledge management approaches are need for redesign the management process architecture for managing the knowledge resources effectively for the present and future needs of the people's society.

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Personnel Problems in Public Library Management: A Case Study of Zilla Grandhalaya Samstas in Andhra Pradesh, India

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ABSTRACT

This paper discusses the concepts of Human Resource Management (HRM) and Human Resource Development (HRD). It describes the impact of Liberalization, Privatization and Globalization (LPG) on Human Resource Management. It also discusses the importance of Human Resource Management in Public Libraries and highlights the personnel problems identified in Public Library System in Andhra Pradesh. It also describes the influence of Information Technology (IT) on Human Resource Management and its impact on Public Libraries. This paper presents the objectives of the study and Methodology followed for the study. It also highlights the methods adopted in analysis of data. It presents the hypothesis tested in the study. It also presents suggestions for Director of Public Libraries (DPL), Chairmen of Zilla Grandhalaya Samstas' (ZGZ's) and Professional Staff. Finally it concludes with suggestions for future research.

Introduction

The management of human resource is very complicated and challenging task for those who are entrusted with the successful running of an organisation and this implies considerable knowledge of various aspects of personnel management. No industry can be rendered efficient so as the basic fact remains unrecognised that it is principally human. It is not a mass of machines or technical processes, but a body of man. It is not a complex of matter, but a complex of humanity. It fruits its function not by virtue of some impersonal force, but by human energy. Its body is not an intricate maze of mechanical devices, but magnified devices. The task is therefore a challenging because of the dynamic nature of the people.

In the course of evolution in the personnel management and also recognition for the workforce in an organisation, the term 'Personnel management/staff management' changed its nomenclature into 'Human Resource Management (HRM)'. Further the growth and development of human resource management and advancement of new technologies emphasised the concept of 'Human Resource Development (HRD)'. Human Resource Development (HRD) is essentially an integral part of HRM. Its major focus is on extracting extra-ordinary performance from an ordinary employee by enhancing his/her physical, mental, social and spiritual well being, and enabling that individual to derive maximum level of life satisfaction. In this sense, the human resource function is beginning to play a role much broader in scope, much stronger in its impact, and much more permanent in its effect. Impact of Liberalization, Privatization and Globalization (LPG) on Human Resource Management.

All over the world, the management of human resources calls for a redefinition of human values and a reformation of socio-economic systems in a transformed environment characterised by speed in mobility and acquisitiveness in spirit. The management of social change and tensions there from calls for an open government, citizen administration and integrated coordinated management of human and natural resources. Homogenising human culture with technologically harnessed nature is the task before us in the management of human resources.

Globalization implies greater economic interaction with the world-benefits accruing in the form of specialization, expansion of the market and economies of scale.[19] Globalization though an inevitable process and an imperative for nations to participate in the process in order to draw its potential benefits, is by no means without its risk. Liberalization results in the entry of new enterprises with a more recent vintage of technology, which could compete with the new entrants using a different technological paradigm. Privatization leads to less political and bureaucratic interference in the economy and in industrial management; greater autonomy indecision-making by the managers; and improved motivation due to the altered incentive structure. Privatization of the bulk of improved motivation due to the altered incentive structure.

It is to be observed that globalisation in its turn reinforces the said new paradigm of HRD in the 21st century organisations. It may be seen that already certain vital facets of the new paradigm of HRD stated herein are imbibed by some progressive organisations in the world. As such, the new paradigm of HRD is not utopian or a matter of far distant vision of organisations vis-à-vis globalisation. The 21st century perspectives on HRD are mainly to promote globalisation in the entire world and in India in particular. Organisations in 21st century face unprecedented,

unpredictable and discrete but fast and turbulent changes in global environment which warrants their entirely new organisation design.
Human Resource Management in Public Libraries.

Public libraries should be well managed and administered. The administration of a public library should be directly towards improving the quality of service to the users and not as an end in itself. It should be efficient and accountable. To get best results the administrative and management staff of a large public library service should be multidisciplinary, involving staff with specialist skills.

In the present Information Technology era, the modern public libraries achieve their objectives through their human resources rather than through operational, mechanical or financial elements. The objectives of public library personnel administration are: 1. To secure, retain, utilise and develop an adequate staff by which to carry on efficiently the operations of the public library, and 2. To help in fulfilling the aspirations and capabilities of the individuals who compose the staff. Therefore, the best organisation is the one that gives the largest number of its members individual responsibility and opportunity for creative work and professional growth which is closely linked with the problem of better status. The constant search for a better status is just one sign of a vigorous spirit of this profession.

Personnel Problems in Public Library Management
Personnel management is an approach; a point of view; a new technique of thinking and a philosophy of management, which is concerned not only with managing people, but also with solving the human problems of an organisation intelligently and equitably, and in a manner which ensures that employees potential is properly developed, the maximum satisfaction is derived by them from their work, that the objectives of the organisation are achieved and that good human relations are maintained within the organisation.

When the problems of personnel are managed effectively, then only the task of 'Personnel management' operated successfully in any organisation. This principle holds good in case of public library management. Personnel problems in public library management identified from the study, are:

Recruitment policies in public libraries. Physical facilities provided in Zilla Grandhalaya samstas. Interpersonal relationship among the staff in all cadres working in Zilla Grandhalaya Samstas. Motivational factors which affecting the library profession in relation to professional staff and

non professional staff Job satisfaction of library staff, on the job and off the job.

Training and development facilities available in Zilla Grandhalaya samstas and their impact on staff. Impact of Information Technology on Library staff. Impact of Liberalization, Privatization and globalization (LPG) on Public library system and in particular library staff. Problems with users and their services.

Human Resource Management (HRM) And Information Technology (IT)

"The information technology revolution s underway which is made possible by the ever increasing developments in the information technology". The way we access and assimilate information, and the emergence of new methods of packaging information, has given birth to a revolution more complex and powerful than the liberation of the printed word that started in the Middle Europe around the 15^{th} century. That revolution was based on the use of printing presses and yielded powerful and long lasting transformation to our living conditions that far exceeded imagination in those days. The new revolution is about real-time access and sharing of digital information, consisting of visual images, should and virtual worlds, made possible by core information technologies like digital networks, information databanks, and computer graphics.

Impact of I.T. on Public Libraries

Information explosion and the fast development of information technology forced libraries to adopt the faster methods of information storage and retrieval devices. Public Libraries are no exception to this change. The public libraries have to adopt this change to meet the ever Changing needs of the public. Collection building, organization and retrieval of information are the basic functions of library. To provide accurate and faster service and information to the readers. There is a specified and retrieval of information has become a problem with the growth of collection. The manual methods are unable to show solutions to the ever growing information. Keeping in view of the information explosion and development of information seeking society, computerization is the only answer for the storage and retrieval problems of information. Computer aided systems are more convenient, flexible and economical in the long run.

Objectives of the Study

- To study and identify the Human Resource (HR) problems regarding physical facilities available in Zilla Grandhalaya Samstas in Andhra Pradesh.

- To examine the motivational factors both traditional and modern, which has direct impact on job satisfaction towards human resource development in Zilla Grandhalaya Samstas of Andhra Pradesh.
- To study the influence of Information Technology and its applications on workforce in Zilla Grandhalaya samstas of Andhra Pradesh.
- To study the importance of staff training and development in the present electronic environment and its availability in Zilla Grandhalaya Samsthas.
- To examine the interpersonal-relationship in the present Information Technology environment at all levels of human resource working in Zilla Grandhalaya samstas.
- To study the existing recruitment policy in Zilla Grandhalaya samstas and its influence on Human Resource Development in public library system in Andhra Pradesh.
- To detect the influence of globalization on Human Resource development in Public Library system in Andhra Pradesh.
- To examine the influence of 'Liberalization of economy' on Human Resource development in Public Library System in Andhra Pradesh.
- To examine the validity of 'Policy of Privatization' in public library system and also its impact on staff working in Zilla Grandhalaya Samstas.

Research Design

The state of Andhra Pradesh has three naturally distinct geographic zones – in. Coastal Andhra, Rayalaseema and Telangana. In the present study, a total of 9 ZGS, three each from the three geographical regions have been selected randomly. The following is the schematic representation of the sample selection procedure employed along with the ZGS selected for the study.

The three regions of the state have subtle differences in culture and development and the needs of the people are also likely to differ. As the present sample is covered from the three regions equally, it is surmised to be a representative one and is sufficient to make any interpretations based on the observations of the study.

Methodology

Despite the fact that there are various types of data collection procedures are employed in Social Science Research, the most popular and widely used 'Questionnaire method' is employed in the present study. In view of the objectives of the study, two types of questionnaires were prepared – one for eliciting information from the Secretaries of the selected XGS.

and the other for obtaining needed information from the Professional staff working in the selected libraries.

Methods adopted in Analysis of Data

Once the data collection process is completed, all the questionnaires were thoroughly scrutinized before entering the data into the personal computers. Analysis of the data has been done using the SPSS (12.0) software package. In the present study, the data have been analyzed and presented in the form of frequencies / percentage frequencies. Chi-square test is employed for testing the differences in the three regions with regard to the proportion of responses. Mostly the responses are recorded in five-grade scale. Hence, in some cases, scores were developed and mean total scores were used for inter-regional comparisons and in addition, the differences were tested by computing 'F' value through one-way ANOVA. The discussion is supplemented by graphical presentations at appropriate places. In view of the objectives of the study, information is elicited from two groups of respondents – (i) Secretaries of Zilla Grandhalaya Samstas (Z.G.S.), and (ii) Professional staff working in the Zilla Grandhalaya Samstas (Z.G.S.). As already mentioned, the study has been carried out in 9 Z.G.S., three each from the three major geographical regions of the state. The responses obtained and information recorded have been analysed and presented in two separate sections – A) Information from the Secretaries and (B) Information from the Library professionals. The observations were tabulated and presented systematically allowing scope for making regional comparisons and these presentations are supplemented with graphical presentation for clear understanding of the differences. This analysis presents a discussion on the observations made from the responses of 9 Secretaries of the Z.G.S. and 216 Library Professionals covered in the present study from the three geographical regions of the state viz., Coastal Andhra, Rayalaseema and Telangana.

Important Personnel Problems Identified through this Study (Problems Expressed by Respondents): Staff is not in accordance with collection development and number of branch libraries. Long gap of recruitment, keeping record assistants as branch librarians, Pending of promotions for in service candidates are the other problems.

Communication with branch libraries is not satisfactory. Payment of salaries at ZGS office is not satisfactory and found difficult by the staff. Most of the branch libraries don't have permanent Library buildings and facing space problems. Up-gradation of Libraries based on population growth and membership development, especially in all towns (municipal areas) is not conducted for the past few decades. Stagnation in Up-gradation of status of libraries is one of the major problems in Zilla

Grandhalaya Samstas. Pay anomalies and disparities are pending, uncleared. Lack of required furniture (reading room chairs and tables), lighting and toilet facilities. Latest technical training facility (Computer training) and deputation for higher studies are not satisfactory. Demand for provincialization of ZGS services.

Hypotheses Test

Based on the objectives of the study 7 points relating to hypothesis are formulated. All these ypothesis are tested through depth analysis and founded as follows:

The first hypothesis relating to physical facilities which is formulated as "The available physical facilities in Public Library System is stand still even after legislation and also advancement of new technologies". This is tested in tables and found hypothesis is accepted. The second hypothesis relating to service conditions which is formulated as "Service conditions relating to promotions pay structure, status recognition remain unchanged." This is tested in tables containing data on promotions and pay structure and found that this hypothesis is accepted,. Whereas relating to status recognition the hypothesis is rejected.

The third hypothesis relating to Information Technology which is formulated as "Influence of Information Technology on inter-Personal relationship is good". The data analysis relating to this reveled that hypothesis is accepted. The fourth hypothesis relating to training and development which is formulated as "Training and Development activities are not adequate to meet the needs of the staff". The study shows that this hypothesis is accepted. The fifth hypothesis relating to staff willing on automation which is formulated as "staff are willing to adopt automation and networking in Libraries". The data pertaining to this shows that this hypothesis is accepted. The sixth hypothesis relating to Globalization and Liberalization which are formulated as "Staff may accept Globalization and Liberalization with a belief that they improve competitive spirit, quality work life, new skills". The data analysis reveals that Globalization and Liberalization impact on competitive spirit and new skills the hypothesis is accepted, but relating to their impact on Quality Work life it is rejected. The last hypothesis relating to privatization which is formulated as "No staff will accept privatization of Public Library System'. This study reveals that the hypothesis is accepted.

Summary of Suggestions Offered by Respondents:

Increasing of annual budget to meet the increased demands of the public and also for the expansion of public Library system. Director of Public Libraries must be appointed from the Library profession so as to achieve better results and serve for the cause of library service. Steps to be taken

to provide own buildings for all branch Libraries at the cost of the government. Competitive examination cell should be provided in all branch Libraries Quality computer training from recognized institutions should be provided on deputation to the staff through phasewise programme. A prescribed policy may be evolved for staff transfers to avoid frequent transfers which causes dislocation of work. Time bound promotions or Career Advancement Scheme may be implemented to avoid frustration of the staff. Grade III Librarians have felt that their scale of pay must be revised on par with secondary grade teachers as they possess equal qualification. Award system for recognition of the work may be introduced by providing merit certificate with cash incentives as that of teachers each year.

Suggestions Recommended

Suggestions for Director of Public Libraries (DPL). Steps to be taken to examine the needs of the public based on growth of population and increase branch Libraries in the same proportion and also Upgrading the existing Branch Libraries as it is long pending. So also rules and regulations for establishing aided Libraries may be revised based on the needs of the rural public so as to increase number of aided Libraries in each Zilla Grandhalaya Samstha in proportion to the growth of population. Though the government of Andhra Pradesh has taken steps to provide own buildings for branch Libraries, it is not fully succeeded to the expectation. Hence a continuous steps are to be taken to provide own library buildings to all branch libraries, with suitable reading room furniture to attract more number of readers to the libraries Immediate action is to be taken to recruit Grade III Librarians required to manage the branch libraries in place of Record Assistants so as to provide quality library services. This process shall also include promotional opportunities to the existing qualified staff. The qualifications prescribed for different cadres of staff should be reviewed based on current technology and educational needs to meet the new challenges in the profession of Library and Information Science and the pay scales for each position also to be revised on par with other professional services prevailing in academic and research institutions so as to acquire quality staff for quality work. It is a known fact that membership of student community is increasing from time to time in public Library system. This is due to distance education system and development of competitive spirit among the students. Therefore the public Library system has to develop not only competitive examinations cell but also provide distance education material for easy access to the student community as well as to encourage adult education programmes. This section should be updated from time to time with special recurring grant. The Department of Public Libraries should examine and introduce suitable award system to recognize the services of Librarians working in Zilla Grandhalaya

Samstas by giving merit certificate with cash incentives as that of teachers with laid down norms as an annual feature. This should be for professional categories of staff working in different positions in Zilla Grandhalaya Samstas. In the age of I.T. Library automation and networking is inevitable to any type of Library. Hence the DPL should formulate a policy to provide training in new technologies under 'Training and Development' programme, and an attempt should be made to train and retrain the professional staff so as to prepare them to undertake new challenges to implement the need based Information Technology applications so as to provide library automation and networking for the benefit of library users. This programme should be made compulsory for the staff upto age group of 50 years exempting the old age professionals. The old age professionals may be entrusted to continue traditional/conventional library services. Thus providing in-service training on the job or deputation to improve staff qualifications is essential as pay of Human Resource Development. The 'Department of Public Libraries' would formulate a policy for staff transfers from branch to branch or ZGS to ZGS so as to prevent frequent transfers which dislocate the normal work in branch libraries. Normally each staff should work atleast for five years in each place so as to develop relationship with the public for encouraging Library culture among the citizens. The DPL shall frame norms for annual job evaluation of library professionals to develop quality work and also to maintain job standards. This job evaluation will also keep up job discipline and also ensure responsibility and accountability among the staff. This job evaluation should be linked with award system. Management has to improve the performance of employees to ensure higher and qualitative production by realignment of performance measures, rewards and recognition, Job re-design, new equipment, Information Technology and skill enhancement. Staff stagnation in a single position for decades causes frustration and dissatisfaction. To overcome this the DPL must plan to introduce career advancement scheme as that of UGC pay scales or periodical time bound promotions on par with Non-Gazetted Officers. This will motivate the staff to discharge their duties with full satisfaction. Budget deficiency is another set back depriving Human Resource Development in the Department of Public Libraries. Therefore the DPL should review from time to time the increasing cost of publications and also increasing establishment expenditure based on increasing cost of living, increasing costs to introduce new technologies etc which are inevitable growth causing financial crisis and also major hurdle for overall growth of the organization. Therefore financial experts must examine and fix the percentage of growth and proportionately increase the budget for each ZGS in the state. Provincialization of staff services is another long pending desire of the ZGS staff of Government of Andhra Pradesh. So also staff suffering for want of medical reimbursement since decades.

No doubt the Government also has taken up the issue considering the demand from all the ZGS employees associations. This issue is most important and solved majority problems of the ZGS staff. Through the provincialization all staff services can be equalized on par with government employees. It also automatically allowed medical reimbursement to the staff. Hence the government should consider this problem and issue necessary government order for provincilization of staff services in Zilla Grandhalaya Samstas. Suggestions for Chairman/Secretaries of ZGS: Each ZGS shall organize periodical counselling preferably once in three for the professional staff so as to create (a) confidence between superior and subordinate (b) to identify strengths and weaknesses of the staff (c) to identify the hidden staff problems from time to time and (d) to develop desirable behaviour among the staff. This counseling process would be organized preferably by secretary and also the chairman jointly or individually in a non-threatening manner. Each ZGS should create an environment suitable to motivate the staff to cultivate and develop their work culture along with changes in policies, procedures, organization-structures and systems as an initiative for change. The organization must be flexible, adaptable and motivated to change. A participative management culture has to be nurtured at all levels of organization so that employees can share their views freely, frankly and fearlessly and contribute more meaningfully. Employees participation in management should grow from the grass-root level and every body at every level should get involved in a spirit of co-operation. It is the responsibility of the Chairman and Secretary to create peaceful and congenial atmosphere to develop cordial Inter-personal relationship which is most important to achieve Human Resource Development in the organization. It prevents inferiority complex among the staff and it also helps to exchange the views and clearance of doubts on the job. At times it helps to learn new skills from co-staff members. This strengthens staff associations and unions also. The Chairman and Secretary shall maintain good communication channel for delegation of powers from top to bottom, This should be on un-biased basis. Clear communication channel will help the staff to discharge their duties as expected by the authorities. Good communication also prevents misunderstandings between head and subordinates. This also maintains proper line and staff relationship. Each ZGS shall also plan to provide short term training programmes with the co-operation of local organizations to meet immediate technical needs of the staff and also encourage the staff to improve their qualifications through the distance education programmes. Thus a multi-skill work culture has to be created to make employees more productive with superior quality. This is also a part of career planning which in turn helps the employees to handle higher and new responsibilities.

The Chairman and Secretary would also invite the philontrophists and donors to donate suitable land for branch Libraries at each mandal and also invite donors to construct Library buildings on their names as is being constructed by chowltries. For this purpose an attractive schemes must be planned by ZGS to attract donors so as to develop buildings for each branch library.

In this regard the branch librarian must be taken into confidence and mobilize to attract local donors and philanthropists to achieve the anticipated goals. Regarding this the ZGS Ananthapur has already initiated and succeeded to construct library own building for 'Gorantla' branch library with 'Rural Development Trust (RDT) financial assistance and also similar constructions are in at 'Thalupula' etc. This also encourages staff participation in decision making of the authority.

To develop public relations among the staff the ZGS should organize cultural programmes, annual events such as national library week, educational programmes and also book exhibitions. This enriches staff relationship with public and creates self confidence to serve better.

In view of economic reforms the existing traditional management systems switched over to Liberalization, Privatization and Globalization (LPG) to achieve better results both in profit and non profit organizations. This has no exception to the Public Library system. These changes will help Human Resource Development in all types of organizations.

Liberalization will help to minimize the expenditure by reducing wastage, It will increase finance for productive activities rather than non-productive activities. In other words it offers attractive remuneration for developing skills. It means it encourages competitive spirit of challenges towards new technologies.

Privatization helps proper utilization of human resources to prevent wastage and rational utilization of human and other resources and also prevents non-productive elements.

Globalization demands and initiates implementation of new technologies in every sphere of life.On the whole the LPG will improve spirit of competitiveness among the staff. It also improves participative management, quality of worklife, quality information service, staff empowerment and avoid rigid relationship such as bossoverism, dictatorship, etc,

It is observed that the present generation is attracted to these organizational changes which are witnessed in the field of software technology and also industrial development and business organizations. Hence Public Libraries should also plan to change towards the said directions.

In the light of the above it is necessary that each Zilla Grandhalaya Samsta should conduct awareness programmes towards implementation of LPG by removing wrong notions such as 'in security of jobs,' 'decreasing job opportunities' and 'increases cost of living', which are prevailing in the minds of the staff, so as to walk towards Human Resource Development. The authorities of ZGS should create confidence in the minds of staff that the 'LPG' is the weapon used for Human Resource Development in the organization in the years to come.

Suggestions for Professional Staff:

The professional staff shall cultivate the habit of joining in professional organisations such as, 'A.P. Library Association,' 'Indian Library Association' etc. so as to attend seminars and conferences to develop professional fellowship. The professional staff should show enthusiasm to learn new skills so ass to update their skills to meet the new challenges in the profession. Staff should maintain cordial relationship with superiors and subordinates as well as with users to avoiding personal prejudices and jealousy. This will develop friendly atmosphere at workplace and results smooth functioning of activities in a healthy manner. Staff should avoid absenteeism by applying longleaves, frequent casual leaves which dislocates normal work of each individual employee and also creates staff adjustment problems for emerging work in the libraries. Staff should develop work culture keeping in mind the slogan "work is God" so as to create healthy atmosphere at workplace. The staff should always remember "The Five Laws of Library Science" and implement these laws to achieve user satisfaction which is the ultimate goal of the library profession. This will enrich Human Resource Development in public library system.

Suggestions for Future Research

Studies in Personnel Management in libraries and in particular in public libraries have been conducted for the past four to five decades. But changes in personnel activities are influencing Human Resource Management from time to time. Further introduction of Information Technology in library management brought new changes as well as new challenges in the context of Human Resource Management in libraries in general and public libraries in particular. Recently new challenges in world economy such as liberalization, Privatization and Globalization (LPG) are influencing total management of any organisation in general

and Human Resource Management in particular. In future these may influence the whole Human Resource Development (HRD) in any type of organisation. Libraries have no exception in this regard. Therefore my attempt in this direction is only a beginning and not the end. Lot of changes may occur in Human Resource Management and Human Resource Development in libraries in general and public libraries in particular. Hence my request presume that many of the library and Information Science researchers may take up studies in this direction so as to draw suitable findings and offer useful suggestions for future growth and development of Human Resource Management in public library system.

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Qualities of Academic Librarians in the Internet Era

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ABSARACT

The advancement in the field of science and technology has affected all the fields of our life. Like in other fields we are also witnessing a sea change in the landscape of library and librarianship. The academic libraries were facing many challenges in this internet era. Managing the academic libraries is becoming more and more complex due to various reasons. The extensive use of modern technologies has changed fundamental roles, paradigm shift and organizational culture of libraries and librarians. This paper tries to highlight some of the qualities required for the academic librarians for the effective management of their libraries. The qualities needed are may look as those of earlier days. What is the need of the hour is their increased application in every field of our profession.

Introduction

The academic and other types of libraries throughout the world have been witnessing a sea change during the past few decades. In the early days the libraries were considered as storehouse. The librarians were supposed to collect books and preserve them and they were called as storekeepers. With the advance in science and technologies the role of librarians and libraries have changed. The growth in technologies has brought changes in the way information collected, processed and disseminated. The main functions of modern libraries are to acquire information in books and non-book materials, process them and to disseminate them to the right person in right form and at right time. These developments have posed great challenges to the library professionals. Today they need to be more dynamic than before. The librarians require some qualities for the effective management of the libraries.

Academic Libraries are the backbone of any institution. The functions of these libraries depend upon curriculum, research programmes, method of teaching and objectives of the institution. The students, staff and researchers form the core users of these libraries. The customers needs are not static and today they expect quality service.

Need for the Qualities: At present the library professionals were trying to provide effective customer service by handling both the traditional and modern methods. They are preparing to adjust to the new situation. The following are some of the reasons for the need of qualities among the librarians.

- Each organization in these days sets separate vision and goals. The library professionals must help to translate their organizations vision and goals.
- As the library grows day by day the duties and responsibilities also changes. The librarians have to identify the future requirements and planning.
- To provide quality service and there by achieve the users satisfaction.
- They have to handle different situations which will occur due to the many factors inside and outside the library

Qualities Needed

The important qualities required for the successful management of the libraries are as follows.

Education

The library professionals should have a good educational background. He should be aware of the world around him. The librarians must be ready to commit to a lifetime of continuing education and to search ways to improve the skills. He has to attend professional conferences, workshops and continuous touch with the latest developments in the filed. A good knowledge about the latest technologies is very essential for the librarians. A vast amount of information is available in open sources. Today there are many journals which are available on the internet free of cost which can be accessed and downloaded directly.

Enthusiasm: Good librarians are assets in an academic environment. Librarians should show enthusiasm to work with both the traditional and digital information resources. They have to face many challenges because the changes are taking place very rapidly. The librarians with an enthusiastic service orientation will find it easier to approach the customers to deliver quality service.

Flexibility: Librarians who embrace the every day change and adopt to new realities as they appear will be successful in these days of environment. Those who are flexible will easily adjust to the new situations quickly, understand the customers needs.

Courage: In these days of internet era the librarians have to take risks. They have to experiment with new approaches. Many librarians try to get feed back from the customers to improve their efficiency and to reduce undesired expenditures.

Humor: A sense of humor always helps the librarian to deal with the unexpected. It also helps the colleagues and customers to understand that we are human beings. The sense of humor also makes the jobs less burden.

Service Commitment: In this age of information technologies the librarians have to show sincere commitment to the profession. The librarian with his team has to respond positively to the customers needs. The readers expect quality service and the librarians has to identify the ways to provide it to them. He should posses good knowledge about the classification and cataloguing, which is very essential for providing the information quickly. They have to identify and utilize the information from the sea of information

Leadership Qualities: The leadership qualities are very important to guide their fellow colleagues to realize the goals. Treating the colleagues and others with respect and honesty will help in the good functioning of the libraries. They need tolerance in their duties that changes day by day. He has to motivate the colleagues to work with zeal, initiative, interest and enthusiasm with a sense of responsibility, loyalty and discipline.

Effective Communication: Each librarian should have good communication skills that will allow him/her to deal openly with readers, decision makers, public and people concerned to the library. An effective communication with his colleagues is very important for the good day today functioning of the library and to encourage ideas, suggestions from subordinates for improvement. The art of effective writing and effective listening is an added advantage for the academic librarians to discharge their duties effectively.

Suggestions: A good working environment, support from the management will definitely help the librarians to develop their qualities that are needed for managing the libraries. It is the duty of the management to provide good physical facilities, sufficient qualified staff. The management has to provide good financial support for the libraries.

The librarian has to develop curiosity to know something about every thing. There are large amount of information in the open sources. The librarians have to use the modern technologies to take the benefit of these. They have to balance between the traditional and modern methods. To be successful in these days the librarians has to take risks, be assertive and experiment with new approaches.

Conclusion: Though the above qualities are not new what is the need of the hour is their increased application in every filed of our profession. These qualities will definitely help them for the maintenance of the libraries effectively. The core profession remains same but the methods and tools for information collection, process and delivery change dramatically. Good qualities will lead to quality service to the users. The librarians have to equip themselves to manage the new changes and challenges. A good support and motivation from colleagues and management will definitely help the librarians to increase their qualities. Today libraries require forward-looking librarians who can embrace the changes and challenges. The dynamic librarians with the qualities discussed above will definitely succeed in the profession and libraries will definitely move forward.

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Strengthening the Communities through Community Information Centres

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ABSTRACT

A Public library has a very important role to disseminate knowledge in all the fields of learning because it is basically linked up with the social welfare of its people. Thus a public library becomes a inseparable link with the social development. Ensuring access to citizens to all sorts of community information services and facilitating the development of information and computer literacy skill have been included in the mission of the Unesco Public Library manifesto. This paper discusses the importance of public libraries as community information centers and describes the efforts made by the government in this regard for improving the lives of common people in India. It also focuses on issues that are crucial for the success of such welfare and developmental programmes

Introduction

The emergence of e-world, the increasing rate of change in the development of, not only, new products but whole new technologies, and the rise of the knowledge workers as the new privileged class in society are unmistakable signs of the way the third millennium is shaping our lives around technology and the management of it. Every one not only needs but also has a right to information. Public Libraries as Community information systems are one way to provide online access to a community.

A Public library has a very important role to disseminate knowledge in all the fields of learning because it is basically linked up with the social welfare of its people. Thus a public library becomes a inseparable link with the social development. UNESCO states that ' A public library is a living force of peoples instruction.'

Public Libraries, which are entrusted with the basic task of preserving the recorded knowledge of past and present for future use, are also responsible for providing required information to the surrounding communities. Besides, in changing situation of society, public libraries are facing new challenges. On one hand, there is tremendous pressure due to information explosion, development of new information technologies etc, for acquiring latest information on all fields of knowledge: on the other hand, there is an increasing demand for pinpointed exhaustive and accurate information in quickest possible time. Thus in the changing library movement, public libraries have no way other than shift towards information based community oriented libraries rather than repository centres of books and other documents, otherwise the existence of these libraries will be reduced to the status of a store house.

Community Information and Social Context

The UNESCO Public Library Manifesto (1994) declares that constructive participation and development of democracy depends on free and unlimited access to knowledge, thought, culture and information. Ensuring access to citizens to all sorts of community information services and facilitating the development of information and computer literacy skill have been included in the mission of the manifesto.

The expression, community information is the outcome of the Second World War. Community Information System is used broadly to designate any of technologies (print, phone, computer – based etc.,), and content whose purpose is to supply information primarily of a local nature, to members of a given community.

Community Information centres can play a remarkable role especially in the rural areas in helping members of rural community to:

- Find information on subjects of interest to them and to take part in learning activities
- Discuss and share knowledge, information and concerns with extension and other community workers, planners and administrators.
- Find materials to help them retain their literacy and numeric skills
- Meet to organize and work together on community projects
- Use equipment to produce their own information materials.

Community Information Service has been defined as "Services which assist individuals and groups with daily problem-solving and with the participation in the democratic process. The service concentrates on the needs of those who not have ready access to other sources of assistance,

and on the most important problems that people have to do with their homes, their jobs and their rights."

The aim of most community information systems is to strengthen community life for local residents by fostering social equality and conviviality, economic development, educational opportunities, health and well being, and democratic participation in government. Community networks are computer-based community information systems that are become increasingly important and common.

CIS may have its origin in the west, but in India also dissemination of community information has been taking place since time immemorial. In ancient India, the CIS could be traced back to inception of dandora, clay tablets, palm leaves and edicts of Ashoka. With the advent and advances of communication and information technologies, the mass media and print media have undertake the responsibility of providing CIS in their own way, but with a wider range. Community Information centers (CIC) are bestowed with the responsibility of community information services.

Functions and objectives of CIC

Some of the functions and objectives of CIC can be outlined broadly as follows:

- To infuse awareness among rural people and to encourage them to make extensive and comprehensive use of information stored in the centre/library
- To take care of economic, educational, social and cultural information needs of the local people.
- To convert uneducated/illiterate and neo-literate into potential library users.
- To provide agriculture productivity information like availability of goods, seeds, use of fertilizers and use of modern technology to produce more improved verities of agriculture crops.
- To provide information on financial aid and institutions which support their needs.
- To provide employment opportunities in various fields.
- To be an informal education centre.
- Guiding, Counseling , directing on all matters relating to public such as health, hygiene, family planning, legal matters etc.,
- To adopt modern techniques in the mode of transfer of information.
- To identify the discrepancy between the services provided and rural needs of the users.

With these objectives and functions, CIC can play a leading role in the development of rural areas.

Information Services of CIC

The pivotal role of community information centers is intended to provide timely, pertinent accurate and reliable information to the rural masses, which includes provision of information on aspects such as:

- Local history
- Local commerce and industry
- Local agricultural products
- Local industrial products
- Local tourist attraction and facilities
- Local general employment opportunities
- Addresses of important persons, institutions and organizations.
- Census information, which includes population, literacy percentage, male female ratio etc.,
- Counseling on all matters such as agriculture, public health and hygiene, family welfare, legal matters etc.,

Rural Libraries as CIC

The committee on National policy on Library and Information Systems (CONPOLIS)

In its report submitted to the government of India was very categorical in its recommendation on rural libraries. It stated that "the main thrust should go to rural public library. A village or village cluster with an adequate population should have a community information centre" a number of ministries /departments and programmes such as agriculture, health and family planning, adult education, National Literacy Mission (NLM), Education For All (EFA) etc having common welfare programmes can jointly sponsor these community information centres and pool their resources for running and maintaining them.

Some of the programmes initiated by Central and State Governments in India

Difficult geographical terrain and lack of infrastructure are a barrier to access for the people of rural areas to modern ICT based information support. The basic needs of citizens such as information, education, entertainment and health services can be addressed through the establishment of Community Information Centres. The CIC Network will serve the purpose of effective connectivity backbone that will provide a platform for e-governance, e-learning and other IT enabled services. The CIC Project envisages application of Information Technology to deliver services to citizens such as e-governance, e-

learning, Telemedicine etc. The CICs will work as an interface between public and government and provide the citizens easier access to socio-economic databases. The Community Information Centres are provided with state of the art equipment such as computers, printers, Webcam etc and an effective connectivity.

With this intention only, the Prime Minister of India announced a plan for the establishment of IT facilities at the block level in the North-Eastern Region in February, 2000. In April 2000,the then Ministry of Information Technology launched a project to establish Community Information Centres (CICs) in all blocks in North-Eastern States. Under this project,CICs have been set up in all487 blocks of the North-Eastern States. The objectives of CICs according to this project are:

- To establish IT infrastructure at the block level
- To create IT awareness amongst the local populace
- To provide Internet services such as E-mail and Web access
- To conduct computer based training programmes
- To provide Citizen Centric services
- To provide access to Socio-Economic databases
- To facilitate distance education
- To use IT tools for sustainable regional development

The infrastructure planned for each Community Information Centre planned to implement the project include 5 Nos. Client Computers;1 Nos. Server Computer; High Speed VSAT Internet Connectivity; CD Writer; Web CAM; Laser and Dot Matrix Printers, UPS etc. Apart from the Hardware Infrastructure, well qualified man power of two person per CIC have been provided to look after the complete centre operations. The training to these persons are provided on regular basis by District NIC Cell.

Involvement of global organizations is a key factor in enabling the full success of some of the programmes. Organizations like UNDP, UNESCO, UNIDO and WHO can give a new dimension to the growth of the project. Development activities in the region can also be given a new realistic thrust. Under the UNDP Thematic Trust Fund for ICT for Development, overall information resource development of the region can be organized. Similarly, the UNESCO initiative on ICT in Education, and UNESCO Institute for Information Technologies in Education (IITE) can have a scheme and funding for the region with the CICs becoming centers for discourses and evaluation. The World Bank has been providing technical assistance for the programme.

The experience from the Pilot project has been very encouraging. Many of the CICs receive over a 100 visitors every week who use e-mail facilities, word processing applications. browse the Web, attend Training

sessions and generally improve their familiarity with computers and awareness of IT. The public and state governments have appreciated the CIC concept. Most of the CICs are able to generate modest revenue by charging nominally for these services. The CICs are eventually expected to become self-sustaining

HELP - the Health Education Library for People, India's first Consumer Health Education Resource Center, and one of the world's largest consumer health libraries (as determined by the Medical Library Association, USA) was established in 1997 to empower people by providing them with the information they need to promote their health, and prevent and treat medical problems in the family in partnership with their doctor. It is a registered charitable trust and a non-profit organization
The URL of this website is http://www.healthlibrary.com

ASHA Project:
Recently Department of Agriculture, Govt. of Assam launched a website named www.assamagribusiness.nic.in in which CICs will be actively used. The idea of this site is to bring the Farmers, Government functionaries, Scientists, Traders, NGOs, Bankers and Private sector together. The services will be available only through CICs and will be paid service.

E-Parichay
The "e-Parichay" program, in its first phase, shall provide for the opening of e-Mail Account for the rural masses as well as the students of this block free of cost with the object to get themselves introduced to the Electronic Mailing System and encouraging them to use the Internet in their day to day life in the sphere of information exchange..

World Corps Programmes in Andhra Pradesh
World Corps is an international non-governmental organization headquartered in Seattle, Washington, USA and currently working in the rural areas of India, Mexico, Kenya and the Philippines to bridge digital divide and alleviate information poverty by establishing youth owned, operated and managed Community Information Centres that are ICT enabled and provide information and communication services to the rural people of the villages. World Corps India implemented in its pilot project in Kuppam, Chittoor District, Andhra Pradesh 5 Community Information Centres with support from the Government of Andhra Pradesh's youth programmes. Currently, there are 15 Community Information Centres that provide various kinds of e-governance, web-enabled services to the people of Kuppam in partnership with Hewlett Packard.

WCI executed this project in collaboration with various stakeholders including government departments, other NGOs and private enterprises. Fifteen youth (men and women) of Kuppam area have become self-employed through the CICs. WCI provided training support, financial assistance, brought in timely government interventions and follow-up support to set up the five CICs in Kuppam, Gudipalle, Santhipuram, Ramakuppam and V. Kota mandals/blocks of Kuppam region.

CICs provide most of their products and services at a very nominal cost to the rural population. All the 5 CICs together have a potential reach to a population of 250,000 people. CIC facilities are utilized by a variety of people - government, farmers, students, rural traders and businessmen, teachers, community workers, NGO staff and youth.

Community Information Centres' (CICs) Category Wise Products & Services

Category	Products/Services
1. Communications	▪ Telephone – PCO, STD & ISD
2. IT-Enabled Products & Services	1. CD sales & writing 2. Computer & Internet lessons 3. Desk Top Publishing including printing 4. Entertainment (Games & Music) 5. Floppy Disks sales 6. Internet – Browsing, Chatting, Downloading & Emailing 7. Scanning 8. Information Services a. Agriculture b. Business c. Commerce & Trade d. Education e. Environment f. Finance g. Government h. Health i. NGO j. Transportations k. Women l. Youth & Children m. News/Weather/Entertainment and other information n. Miscellaneous

3. Other Services	1. Free counseling & guidance 2. Photocopying 3. Electricity Meter Reading & Spot Billing

M.S. Swaminathan Foundation Programmes in Pondicherry

A pilot project taken up by M.S. Swaminathan Foundation is bringing the Information Age to rural Indian villagers in the form of communal telephone and Internet access. Based on the experiences to date of a half-dozen local 'information shops' in southern India, another 12 villages have requested their own information shops, if funding can be found.

The Foundation is funding Internet, voice, and database access to rural villagers in the Pondicherry area of India. The Foundation provided the villagers with computers, a printer, a wireless device, and a solar panel, specially designed websites in the local language and training programmes for the villagers. In return, villagers had to sign a formal memorandum of understanding, (MOU) with MSSRF, agreeing to supply the basic infrastructure such as electricity and the space, and to identify volunteers who would operate the facility. The villagers were actively involved in choosing the location of the centres and recruiting volunteers. A small town, Villianur, was chosen to be administrative centre and act as the interface with the public and government offices.

Conclusion

Community participation is the most important factor for optimized success of the CIC initiative. The State Governments are taking this factor into active consideration. Steps are being taken to familarise people with computers, and efforts to remove the initial awe for computers are being planned for otherwise reticent people, through easy and demonstrative lessons. People must feel comfortable using the facilities, and proper orientation must be given in that direction. Talent search initiatives will be undertaken to ensure greater and fair participation. Various steps in popularizing these centers will be undertaken by the respective governments.

Localised content is another important factor for the success of the CIC project. It is human nature to relate to surroundings, and so information about local conditions and features will find easy acceptance and also generate interest among people. The local content should have a strong database on local features and possibilities for the region. With the population in the far-flung areas not really conversant with English and still having a low literacy rate, it is imperative to have local content in local language for delivery at these centers.

The delivery of education, including some basic IT training should be a critical feature of CICs. While some hours in the centers should be marked for educational delivery, the off-peak hours should be utilized for IT training for specific groups like children, women and the older generation. Distance education should be encouraged through these centers and some initiatives of IGNOU in this direction are welcome. Education via community network is best exemplified by the revolution ushered in by Educor in Southern Africa. Here, the student and teacher communities have been involved in using ICT as a major tool for discussion and resource dissemination.

The use of CICs for medical delivery in the form of tele-prescription, medical discussion for professionals, and remote medical services can better serve the purpose. Considering the fact that most of the doctors in the rural service are often unavailable, these CICs could become the reference point to obtain treatment from experts. An example is the Community Medicine Program in Gambia. Here, nurses and doctors in remote villages contact specialists in London and offer treatment to patients. They also use this network for updating professional knowledge. Village councils can also be educated on basic health concepts so that they do not turn to quacks and faith healers. The example of Madhya Pradesh in training local youths for delivering basic health services should be followed here.

The possibility of using CICs as centers of e-governance is very appropriate. Citizen services like birth and death registrations, utilities, bill payments, and official correspondence to the Government can be provided at these centers electronically. Government announcements could be better diffused through these centers and thus administration could be brought closer to people. Similarly, petty litigations and disputes could also be undertaken through these centers.

In addition to the above, various social activities can be given a thrust through the CICs. NGOs and voluntary organizations can also be allowed to propagate their good causes through this network. Mass initiatives like AIDS Control programmes, information on family welfare and population control could be better served through these CICs.

Involvement of global organizations is a key factor in enabling the full success of the programme. Organizations like UNDP, UNESCO, UNIDO and WHO can give a new dimension to the growth of the project. Development activities in the region can also be given a new realistic thrust. Under the UNDP Thematic Trust Fund for ICT for Development, overall information resource development of the region can be organized. Similarly, the UNESCO initiative on ICT in Education, and UNESCO Institute for Information Technologies in

Education (IITE) can have a scheme and funding for the region with the CICs becoming centers for discourses and evaluation.

The World Bank has been providing technical assistance for the programme. A few State Governments in India are also lobbying for such a project in their respective states. Kashmir has already been awarded one. Thus the positive outlook is well established .It remains to be seen how best these projects are accepted by the people of the region. The strong support of different organizations as well as of the user community from the region needs to be channelized to . One only hopes that the North East region benefits immensely from this project.

Crisis Management and Community Information Centers

Public information will emerge as a key component of community recovery during and after a crisis. As the primary publicly funded information provider in the community, the public library should assume a role as the communications and information center. This role builds upon the traditional library strengths of gathering, evaluating, organizing, and disseminating information and applies them to critical community needs at the time of a crisis.

It is probable that the optimum means for compiling and distributing the information will be electronic. A centralized-decentralized approach-with the contribution of information by authoritative sources combined with a coordination hub for spreading that information-would be an effective model. Centralization of the organizing function also makes provision for contributions that are not electronic and for automatically tailoring the information content and format to the distribution preferences of the participants. It will be necessary to devise a backup strategy in case all or part of the electronic network is inoperable. Thus together, both public libraries and community networks ultimately strive to serve the needs of the public. This article will examine the relationship between public libraries and community networks and why their futures are potentially linked into becoming one.

A web site for the CIC must be designed and prepared for immediate activation prior to any crisis. Its specifications should include access to specific topics; user-friendliness; visual, print, and audio capability; password-protected ability to add and edit information from remote sites; capacity for multiple languages; ability for users to edit and reformat data for self-distribution; sufficient capacity to support multiple users, plus the ability to increase that capacity rapidly.

In all, public libraries as dissemination centers of community information have historically been a part of community government and have themselves been community centers. Though they are different their

paths are co terminal in providing the best resources, the best representation, and the best government for the people they represent and for being responsible members in society.

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Digital Library Initiatives at Indira Gandhi National Centre for the Arts (IGNCA)

Dr. O.N.Chaubey

ABSTRACT

Indira Gandhi National Centre for the Arts (IGNCA), New Delhi is a premier research organization in the field of Indian Art and Culture. Kalanidhi Division of IGNCA is a National Information System and Databank of the Arts, Humanities, Cultural Heritage etc. A fully supported Reference Library of Multi-Media Collections, comprises of about 2 lacs cultural print material along with 1700 rare books; 2.5 lacs manuscript in microfilming format, 1 lac visuals more than 1000 hours of Audio Video recordings, 9 personal collections of eminent scholars and artists, photographic collection of eminent photographers such as Lala Deen Dayal are some of the other points of attraction at Kalanidhi. Cultural Informatics Laboratory (CIL) of IGNCA is in the process of digitization of all its non-print material and some print material. Over 70% of the non-print materials have already been digitized. Kalasampada Digital Library software has also been developed by CIL. Online catalogue of about 8 lacs cultural resources in MARC 21 is under finalization. Installation of CD mirror server, networking of various Divisions of IGNCA and finalization of various metadata formats for collection such as photographs, manuscripts, slides and audio-video material are some of the plans under implementation. This paper is an attempt to describe digital library initiatives being undertaken at IGNCA.

Keywords: Digital Libraries; IGNCA, Digital Library – art and culture; Multimedia digital libraries; Kalanidhi; Kalasampada

Introduction

The Indira Gandhi National Centre for the Arts, established in the memory of Smt. Indira Gandhi, is visualized as a center encompassing the study and experience of all the arts- each form with its own integrity, yet within a dimension of mutual interdependence, interrelated with nature, social structure and cosmology. This view of the arts, integrated with and essential to the larger matrix of human culture, is predicated upon Mrs. Gandhi's recognition of the role of the arts as essential to the "integral quality of a person, at home with himself and society." It partakes of the holistic worldview so powerfully articulated throughout

Indian tradition, and emphasized by modern Indian leaders from Mahatma Gandhi to Rabindranath Tagore.

The arts are understood to comprise the fields of creative and critical literature, written and oral; the visual arts, ranging from architecture, sculpture, painting and graphics to general material culture, photography; the performing arts of music, dance and theater in their broadest connotation; and all else in fairs, festivals and life style that has an artistic dimension.

The Centre comprises five divisions, viz. Kala Nidhi, Kala Kosa, Janapada Sampada, Kala Darsana and Sutradhara. These have been visualized in a manner where each unit will interact with other. Each will be a self-contained institution with the possibility of individual growth, with the recognition that each is a part of one composite whole.

The Kala Nidhi division of IGNCA is a hub of the centre having a great treasure of cultural knowledge resources. It comprises (a) a computerized National Information System and Data Bank on arts, humanities and cultural heritage fully supported by (b) a Cultural Reference Library of multi-media collections to serve as a major resource Centre for research in the humanities and the arts; and (c) Cultural Archives and multi-media personal collections of artists/scholars. It is proposed to have a very large library of Microfilms/ Microfiches along with a printed material on Greater India, South Asia, Southeast Asia and West Asia. Language won't be a barrier in its collection development policy. It is also proposed to have a collection of about half a million works during the next few years.

The library is conceived as a major repository of reference material, primary and secondary, relating to the humanities and the arts. It will encompass the disciplines of Archaeology, Anthropology, Ethnology, Philosophy, Literature, Language, and Arts and Crafts. It will concentrate on Encyclopedias, dictionaries, bibliographies, atlases and also catalogues of unpublished manuscripts of Indic and Asian origin. Its acquisition programme of current publications will support the research and publication activities of the other Divisions.

Digital Library

The emergence of the Internet & World Wide Web and its rapid development has allowed developers to provide universal access to digital libraries. Previously, access to digital collections was supported by proprietary networks or by local or campus-wide networks. These services also depended on a variety of end user software and hardware.

By contrast, access through the Web is based on open standards (such as the Hypertext Transmission Protocol) and on widely available browser software, which can be used from anyone's desktop computer. Because of the Web, place is not a barrier to access to digital libraries. A relatively ambitious pre-Web attempt to build a digital library was Project Mercury (1989-1992), a joint development of Carnegie Mellon University and OCLC. It developed software for uniform access to textual and images databases, including page images of journal articles. Access was to be confined to the university campus, with X Window interfaces.

A digital library collection may include two types of information resource. One type comprises the "digital original" resources, which are sometimes referred to as resources, which are "born digitally". The other type comprises "digital surrogates", which are created from traditional information resources through format conversion. While both types of resource have the same access and management requirements, they raise different issues of selection and acquisition, and their preservation imperatives are also different.

The Digital Library is an electronic library where the information is acquired, stored and retrieved in digital form. Digital libraries are group of inter linked workstation connected to high-speed networks. In the context of digital imaging, Librarians face greater challenges in capturing, storing, formatting, retrieval and reproduction of non-textual information. Modern information systems are now able to represent the information electronically and manipulate automatically at high speeds.

Digital Resources at IGNCA:

Today's availability of software, hardware and networking technology, the advent of world wide web (www), its ever increasing usage and highly evolved browsers have paved the way for the creation of a global digital library. The increasing popularity of Internet and developments in web technologies is a catalyst to the concept of the digital library. One of the Prime aims of IGNCA is to serve as a major resource center for the Arts, especially primary material, written oral and visual. Below figure shows various digital resources available at IGNCA.

Corpus			Digital Corpus
Printed Materials	2 Lacs	DIGITAL RESOURCES at IGNCA	200
Manuscripts: (in) MicrofilmRolls 19000 Microfiche 1,50,000	2.5 Lacs		1.5 Lacs
Slides	1.05Lacs		1.05 Lacs
Photographs	10000		8000
Audio/Video	1000 hours		1000 hours
Art Objects ➢ Mask ➢ Paintings ➢ Puppets	2000		20000 **Metadata:** • Books - 1.5Lacs • CAT-CAT • PICTO • SOUND • MANUS • KKTERMS
Others: • Archival materials • Exhibited materials			**On Web:** • Newsletter • Periodical • Bibliography

Printed Material (Multilingual):

➢ **Rare Books**

Acquisition of rare books is a special feature of the Library. It has acquired books published in 18th and 19th centuries. We have about 1500 rare books. Many of the books in various personal collections in Reference Library may also be put under the rare book category. Some of the books are in damaging condition.

➢ **Personal Collections**

A unique feature of the library is the Personal Collection of eminent scholars and artists. Already five major Collections have been gifted to the library. These include (1) 20,000 volumes of Dr. *Suniti Kumar Chatterjee* Collection; (2) 1200 books on Philosophy and music from the Th*akur Jaideva Singh* Collection; (3) 1500 books and original paintings from the *Krishna Kriplani* Collection; (4) 15000 volumes largely on Sanskrit and modern India languages of Acharya *Hazari prasad Dwivedi* Collection and (5) about 10000 books and other archival collections of Dr. Kapila Vatsyayan.

Micro Film/Microfiche:

Millions of India manuscripts are no longer accessible to research scholars in the original. It is proposed to develop a microfilm/microfiche library of unpublished manuscripts in India and foreign collections. This

is a long-range programme, which will cover private and public libraries in India and abroad. Steps have been initiated to acquire on a selected basis microfilm/microfiche, from the collection of Durbar Library, Nepal; the Staas Bibliothique, Berlin; the Bibliothic Nationale, France and British Library, UK. Manuscripts already available in microfilm or microfiche form such as Tibtetan Collection and other Sanskrit manuscript in the IASWR programme have been acquired. Presently the microfiche collection of IGNCA reference library comprises a large number of back volumes of research journals in microfiche form. Important amongst these are British Burma Gazetteer; Bulletin de I' Ecole Francaise de Extreme Orient; Journal of Royal Asiatic Society of Great Britain; New India Antiquary; and Tamil Culture.

Visual Library and Slide Collection:

Non-book material has assumed greater importance in the total resources of a library in which slides form an important storage medium for art and museum libraries. A concerned effort is being made to establish a large photograph and slide library. Here also the focus is on developing a resources center where Documentation on India and Asian art is easily accessible. The Reference Library of the IGNCA has built up selected and valuable visual material, particularly with emphasis on slides of Indian Art, painting, Architecture, and Performing Arts etc. The library has acquired important slide collection from the Victoria & Albert Museum, Chester Betty Collection through the courtesy of INTACH. The American Association of South Asian Art has also gifted a complete set of 8000 slides.

With the prime aim of collecting the Indian Art were approached and material collected in reprographic form (slides) to build up the history of Indian art. The process, which started seventeen years ago, has yielded great results. At present our collection has not only grown in quantity but also in content and quality wise. With our present infrastructure of slide production, duplication and scanning and with the introduction of computerized information, the Centre is one of its kinds in the whole of south East Asia. The slide unit of the Reference Library has been in existence since 1989 and over the years it has acquired and generated over 76,737 carefully selected slides from 17 centres in India and 15 centres abroad. The growth rate of the collection is approx. 3,000 slides per year. In addition to the slides there are 300 photo-negatives on Himachal Pradesh (Land and people). The slide Unit of the IGNCA has the largest collection of slides on Indian art viz painting, sculpture, architecture, illustrated manuscripts, performing arts in India and it the only library in India which is equipped with the proper infrastructure for archival storage, computerization of data, duplication and scanning of slides

National Information System and Data Bank:

Government of India has designated IGNCA as the Nodal Agency for all matters relating to the setting up of a National Data Bank on art, humanities and cultural heritage. The National Data Bank provides computerized storage, retrieval and dissemination of information on all aspects of arts and cultural heritage. This division supports the computerization programme of other divisions of IGNCA and will network institutions in India and abroad as well as undertake supporting Research &Development Projects. At present, the following databases are under development:

- **Union Catalogue of Catalogues (CATCAT)**

This database provides information on thousands of catalogues of published/unpublished manuscripts. Information from 700 catalogues has been computerized. Data on particular disciplines relating to published/unpublished material can now be retrieved by title, catalogue, repositories of manuscripts from India and abroad. Another 500 catalogues will be scanned for updating.

- **Manuscripts (MANUS)**

The complete descriptive information about 3000 manuscripts of *Gita-Govinda, Meghaduta* and *Natyasastra* has been computerized as an experimental measure. This reveals the uniform character of the texts in diverse scripts, also variations in commentaries. Descriptive information about all the manuscripts available on the 84 identified fundamental Sanskrit texts being computerized, which will provide the base for providing the variant readings of manuscripts for critical editions planned as part of Kala Kosa Fundamental Text Series.

- **Art Object (PICTO)**

This database will include information on 2D and 3D Objects. At present, information on Elizabeth Brunner's paintings and musical instruments of Shri S. Krishnaswami's collection available with IGNCA has been computerized.

- **Sound Recordings (SOUND)**

This includes information on Vedic Chanting of Ranayaniya and Jaiminiya sakha of *Samaveda*, Paippalada sakha of *Atharvaveda* etc. Databases on Sangita collections of Cultural Archives have been developed, namely Natarajan Collection on Carnatic Music and S. Krishnaswami collection or musical instruments.

- **Kala Kosa Terms Database (KKTERMS)**

The database KKTERMS for Kalatattvakosa project has been developed. Under this project 250 terms have been identified for the Glossary (Kalatattvakosa). In the initial phase, data relating to 12 selected terms is being computerized.

Cultural Archives:

Over the last ten decades, many individuals have dedicated themselves in collecting material of their special interest. Some have been interested in literature and personal histories of writers, others in recitation, still others in architecture, sculpture, painting. A few have been documenting the folk and tribal arts in all their totality. Music archives have been built by some and dance and theatre have attracted others. The Indira Gandhi National Centre for the Arts proposes to acquire and house these collections, so that the invaluable work can be made accessible to the nation. Some prestigious collections have been acquired and being housed in the Archives as under six sub-sections:

1. SAHITYA (Literature)

R.C. Rangra Collection: Dr. R.C. Rangra has interviewed over 90 Indian writers, in the different languages of the country. The interviews are not mere biographical sketches of the authors, but are in-depth discussions about their literary works. The audio tapes are also accompanied by transcriptions of the interviews with annotations by the authors themselves.

2. VASTU/SILPA (Visual Arts)

Lance Dane Collection: This is a great art Collection comprising over 998 sculptures and figurines in metal, wood and terracotta, over 50 paintings, 3000 to 5000 books and 1,00,000 black and white negatives and colour transparencies of important works of Indian art.

3. CHAYA PATA (Photographs)

Raja Lala Deen Dayal Collection: Raja Lala Deen Dayal was the premier pioneer in Indian photography. He was a great artist and a technician, and hence his legacy of negative plates and original prints are of great importance to the world of photography. His Collection comprises over 2700 glass plate negatives, 200 original prints and other material such as exhibition prints, registers and photographic equipment. ~~4000 photographs/negatives digitized.~~ 4000 photographs /negatives have been digitized.

Henri Cariter-Bresson Collection: Mr. Henri Cariter-Bresson is one of the world's greatest photographers who, during his visit to India recorded for posterity the visuals of the birth of a nation. Mr. Cartier-Bresson shot candid moments of the freedom struggle in India as a pioneer of 'Concerned Photographer's Movement.' From the Cariter-Bresson Collection 107 photographs are being acquired by the Archive have been digitized.

Sunil Janah Collection: Shri Sunil Janah is a distinguished photo-journalist whose works cover Indian History, especially during the

struggle for freedom and the subsequent period. The Collection also contains profiles of the people of India- statesmen, city and rural/tribal dwellers as also the many facets of India life- the arts, agriculture and industry.

4. SANGITA (Music)

Shri S. Krishnaswami Collection: This Collection is a rare compilation of reprographs on the music instruments of India consisting of over 550 photographs, 1300 black-and-white negatives, 780 slides and 60 sketches. The material illustrates not only the musical instruments that are played in the classical, folk and tribal genres of music in present times, but also archaeological representations in sculptures, or musical instruments of the past. The Collection, compiled over a period of forty years also comprises research notes of Shri Krishnaswami and about 30 hours of music on audio tapes.

Shri S. Natarajan Collection: Shri Natarajan has recorded over 740 Carnatic music concerts from 1955 onwards. The Collection of over 2000 hours of music represents the live performances of every major Carnatic music artiste from the early part of the century upto the present times.

V.A.K. Ranga Rao Collection: The 78 rpm music discs of India present rare artistes of the early part of the century, both in the classical and popular music genres. Shri Ranga Rao has in his collection 25,000 music discs, the earliest of which was released in 1903. The records cover not only the genres of classical music, but also those of drama sets, stage music, non-film light music and film music in all the languages of India.

Shriram Anant Sukthankar Collection & Prabhakar Datar Collection: Both Shri Sukthankar and Shri Datar have collected over 2500 78 rpm music discs each, representing north Indian classical music and natya sangita or stage music of Maharashtra.

5. NRITYA (Dance)

Mohan Khokar Dance Collection (MKDC): Shri Mohan Khokar has gifted a rare collection of materials on dance. It contains over 40,000 black-and-white negatives and colour transparencies in addition to rare photographs. There are over 4,000 monographs and journals not only in English but in other Indian and European languages in addition to albums of newspaper clippings, and programmes pamphlets, posters etc. from the early forties. There are also field notes, and dance notations on choreography made by Shri Khokar. MKDC also contains over 200 audio tapes, mainly of interviews with Gurus, artistes and scholars of

dance. A special feature of MKDC is specimen of art objects with dance motifs, such as sculptures and figurines in bronze, wood, terracotta and other materials, textiles, paintings, etc. as also what may be termed as 'Bazar iconography', that is ugly or pathetically humorous dance figurines in plastic, clay, etc. of today.

6. NATYA (Theatre)

K. T. Deshmukh Collection: The Collection contains a large number of photographs and B&W negatives of theatre presentations pertaining to Indian Theater in general with emphasis on Marathi Theatre in particular. The Collection has valuable reference material on the early Parsi and Shakespearean theater and the theatre of Bal Gandharva upto contemporary theatre. The Collection also contains books, puppets, Masks, props and stage curtains used in theatre productions.

Bibhutibhusan Mukhopadhyay Collection: Dr. Bhibhuti Bhusan Mukhopadhyay has collected 78 rpm music discs of over 50 Bengali plays and stage music.Each Collection is being maintained as a totality to give an insight to the personality of the Collector. In the future, it is hoped that many more personal Collections of artists, critics, and scholars will find a place in the Cultural Archives of IGNCA-the first of its kind in India. The Collection will be maintained in a fashion that scholars can, have not only access to the material collected, but also be guided by the special predilection of the Collector.

Cultural Informatics Laboratory (CIL):

CIL was established in 1994 with UNDP assisted multimedia documentation project titled "Strengthening National Facility for Interactive Multimedia Documentation of Cultural Resources". Under proper guidance from the subject experts, the team became trained in Interactive-multimedia-documentation and in-depth analysis of cultural information. This expertise being used to demonstrate how cultural heritage can be recreated virtually, in holistic and integrated perception of culture. Amongst the areas where the project has broken new ground are the creation of synergies between the disciplines of arts and information technology leading to usage, development and demonstration of new technology and cultural documentation. New design models, development processes and reusable software tools specially targeted at high quality multimedia content creation have been conceived, evolved and applied in some already completed and many ongoing projects.

Kalasampada: Digital Library: Resources of Indian Cultural Heritage (DL-RICH)

Recognizing the need to encompass and preserve the distributed fragments of Indian art and culture, and to serve as a major resource centre for the arts, the Indira Gandhi National Centre for the Arts (IGNCA) in collaboration with Ministry of Communication and Information Technology, initiated a project, KALASAMPDA (Digital Library: Resources of Indian Cultural Heritage), for the development of databank of cultural heritage. Kalasampada facilitating the scholars (users) to access and view the materials including over couple of lakhs of manuscripts, over a lakhs of slides, thousands of rare books, rare photographs, audio and video along with highly researched publications of the IGNCA, from a single window. Multimedia computer technology has been used for the development of a software package that integrates variety of cultural information accessible at one place. This will provide a new dimension in the study of the Indian Art and Culture, in an integrated way, while giving due importance to each medium. The system aims at being a digital repository of content and information with a user-friendly interface. The knowledge base such created will help the scholars to explore and visualize the information stored in multiple layers.

Digital corpus includes over 100 Lakh folios of manuscript, over one lakh slides, 8000 photographs, IGNCA published books, Kalakalp (IGNCA's Journal), Vihangama (IGNCA's Newsletter), over 400 hours of audio and video and approximately 50 Walkthroughs. Digitization, post digitization editing and integration are continued to encompass all such materials available in the IGNCA. A retrieval application has been developed and majority of these materials is available for online access on IGNCA Intranet. User interface of the application is very simple and many cultural institutions approached IGNCA to have a copy of the same. Search is available both in English and Hindi (Devanagari). User have the option to select the material of his interest either from a specific type of collection like books, manuscripts, slides, audio, video etc or from the entire collections. The facility is currently available only on intranet, for the very fact that these materials are priced possession and covered under Intellectual Property Rights, and copyright etc.. Although, the partial information can be accessed from the IGNCA's official website www.ignca.gov.in uploaded with necessary approvals.

CoIL-Net – Content development in Indian Language Network is a project sponsored by Ministry of Communication and Information Technology (MCIT). Main objectives of the project is:

- To enhance the access to cultural resources using digital technology

- To develop a reusable 'MODEL DESIGN' and 'Development Process' for implementing user-friendly web enabled heritage library for Hindi speaking population and other Hindi knowing persons in India and Abroad.
- To implement a web enabled Hindi Based multimedia heritage library also offering contextual and vetted links to important websites to contribute towards the socio-economic development of Hindi Speaking region.

National Databank on Indian Art and Culture:

The IGNCA initiated another project with the Ministry of Communications and Information Technology (MCIT) to expand the collection and integration of information on Indian art and culture, beyond the Kalasampada project. The project is part of a larger initiative on the part of the MCIT's National Digital Library (NDL) to digitize, document and disseminate available information and knowledge in different fields of activity and makes it accessible. This will complement the conventional library mode of direct book access through National Library movements across the country. The conversion into the digital format of the existing information brings the world closer by making the data accessible from a desktop to the remotest database. The facility helps the complete user community from a Student to the Scholar apart from its feasibility of use to all other users. The IGNCA functions as a National Resource Centre for the Arts, especially written, oral, aural and visual materials. As a guiding, facilitating and networking institution, the IGNCA is not only meant to be a repository of objects embodying artistic and cultural creativity, whether they are in the textual, visual and audio form; what it seeks to do is to provide a forum for making available to its users different trends and manifestations of Indian Cultural patrimony in an integrated way.

The main objective of the project is to enhance the accessibility of Indian cultural resources using digital technology. The project includes the digitization of information related to various aspects of Indian art and culture accessible from a single window. Contents including over 1 lakh visuals, 1000 hours of audio and video, 25000 rare books on art and culture and Walk-through of some of the archaeological monuments will be covered. This will be one of the major sources of information on Indian art and culture, which can be accessed by the researchers, students, art historians, archaeologists etc.

The IGNCA's visual archive includes over one lakh slides and negatives collected from the various institutions and individuals. The IGNCA does not have the copyright of majority of these visuals. The project includes the photography (digital) of around one-lakh digital images (on various

aspects of Indian Art and Culture) and 1000 hours of audio video and upload on the website for the academic reference to the researchers with their catalogue. This includes the data from the archaeological and heritage site / monuments (covered under the *ASI and state archaeology departments* and large no. of monuments not covered under these departments) and from the life style of the communities from allover India depicting various facets of arts.

Project includes digitization of 25000 rare books on Indian Art and Culture from the ASI collection, which will be uploaded on ASI's website for public access.

Project includes the 2D walk-through of selected archaeological monuments and sites. For example *Brihadeshwara Temple* (Tanjavur, Tamilnadu), *Humayun Tomb* (New Delhi), *Khajuraho* (Madhya Pradesh), *Rani ki Bagh* (Patan, Gujarat), *Martand Sun Temple* (Anantnag, Jammu and Kashmir) etc. will be considered. This will be in collaboration with the Archaeological Survey of India, New Delhi.

Traveling multimedia exhibition from the outputs of above components can be built, which will help in demonstration of the use of computer technology for the preservation of Indian art and culture. Exhibition can be mounted at the different part of India and abroad.

Conclusion

Digital archives are beneficial to all researchers, scholarly institutions, and the entire research community. Major benefits include: cost saving, avoiding duplication of effort, broadening of the communication process, reduction in time in announcing findings, expansion of audience, and above all preserving information assets for the use of future generations.

IGNCA is in the process of digitization of all its non-print material and some print material. We have already digitized about half of our non-print material i.e. one lacs slides and nine thousand microfilms, audio-video and IGNCA publications. D-space, Open Source Digital Library Software has been installed. Digital software has also been developed by CIL, IGNCA. A digital library of manuscripts in collaboration with National Mission for Manuscripts is another important plan of IGNCA. Through installation of CD mirror server all digitized material will be made available over Intranet. Online catalogue of about 8 lacs cultural resources in MARC 21 is under finalization. Various metadata formats for collection such as photographs, manuscripts, slides and audio-video material are some of the plans under implementation. Once all the collections of cultural resources at IGNCA is digitized. I am sure the world is going to see one of the biggest digital libraries in the field of

Indian art and culture, where the relationship between the different art forms will be represented in hyperlinks. More than that masks collected from various parts of the country and other tangible and intangible heritage material have thrown new challenges for digital library experts to preserve them in 3D digital images.

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Digital Public Libraries in the Internet Era in Madhya Pradesh

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ABSTRACT

Discusses the role of the public libraries in the modern context. Presents a brief picture of the public library system in India and Madhya Pradesh. Details the efforts made by the Government of India and Madhya Pradesh in development of public libraries .Emphases the role of Information Communication Technology services in the development of public libraries. Suggests an hybrid library at the grass root level to cater to the information needs of the rural people.

Keywords: Public Library, Information centre, Gyandoot and Internet.

Introduction

Early seventy percent of Indian population live in villages and many new technologies are inaccessible for these remote villages. As a result there is a wide gap between the libraries of 'knowledge haves; and knowledge have-nots. Today Internet technologies opened up new ways of interactive communication between public libraries and the modern society. The Internet Enabled Services can easily connect remote people in a more affordable manner. The public library system can provide the framework for an information rich society, with the use of Information

Communication Technology, where individuals are independent of the cost of accessibility of latest information. The public libraries can develop themselves as nodal agencies to provide its users with customized information. The public libraries can be the gateways to electronic information resources. A dramatic change can be seen inside the society, where the public is using the Internet Enabled Services in their day to day routines. The public libraries have to restructure their resources and redesign their services to meet the aforesaid challenges.

Definition

The UNESCO Public Library Manifesto defines the public library as "the local gateway to knowledge, provide a basic condition for lifelong learning, independent decision-making and cultural development of the individual and social groups" The public libraries are established by State laws, are supported by the local units and voluntary gifts, are managed as a public trust, and every citizen of the city and town which maintains it, has an equal share in its privileges of reference and circulation. A library which is approved wholly or partly from public fund and the use of which is not restricted to any class of persons in the community, but is freely available to all".

Role of Public Library in Internet Era

With the change in the technologies, and the nature of resources, the Public libraries also have to change their services in accordance with the new roles

•Public library may act as the community information switchboard. The customer can be acquainted with data on his or her community, communicate with leading administrators, create his or her own information and offer to help producing community information or with other assignments. Thus, the public library will be gradually taking on the features of a multimedia workshop and becomes an open agency for information.

•The public library should emerge as the community's market place, where people meet and discuss things. There are no limits to communication between visitors and for acquiring worldwide knowledge. It will satisfy the needs of tomorrow's society with out any discrimination.

•The public library will be delivering its services to our homes through digital technology which includes Internet Enabled Services, CD-ROMs, the library catalogues and so on.

•The public library needs to open up to the world outside in order to find useful partners for its development and to cooperate with them in the market. These will include trade and industry. The public library will, among other things, be the natural offshoot of the university in its vicinity. Distance education is on the increase, which means additional tasks for the public library.

•Information services and inter library network are the essential infrastructure in the modern society. These networks will guarantee the future of libraries and ought to be maintained and developed.

•In the future, the public library needs to have new ideas in order to survive, just like any other tax-based organization or commercial business. The library will have to procure funding from new sources.

The public library, the gateway of knowledge, is a prerequisite for life long learning, independent decision making and cultural development for individuals as well as the community as a whole. This is precisely the intellectual foundation on which the public library rests.

Public Library System in India

The public Library system is at different stages of development in different parts of the country. The progress of the public libraries is not uniform in all the parts of the country. This can be attributed to the fact that the development of the public library system is the responsibility of the State Governments and the development is seen accordingly. The condition of majority of rural libraries is so heartening to note that many of them do not have their own building, some are located in small thatched huts and some share a room and time with other their institution, storage facilities are very poor and stock of reading materials is also insignificant and these libraries should be the biggest concern of the administrators, It is to be noted that out of 28 States and 6 Union Territories, only 14 States, have so far passed library legislation, enabling the concerned State Governments to provide library act based public library services i.e. Tamil Nadu (1948), Andhra Pradesh (1960), Karnataka (1965), Maharashtra (1967), West Bengal (1979), Manipur (1988), Kerala (1989), Haryana (1989), Mizoram (1993), Goa (1993), Orissa (2001) and Gujrat (2002) covered under these Acts where 68.80% population live. Rest 14 states namely Arunachal Pradesh, Assam, Bihar,

Public Libraries in India

Demography of India	Number	Public Libraries	Number	Percentage covered
States and Union Territories	35	State Central Libraries	28	80%
Districts	592	District Libraries	451	76%
Talukas	3,987	Taluka Libraries	501	12.5%
Villages	587,226	Rural Libraries	28,820	4.9%

Chattisgarh, Himachal Pradesh, Jammu and Kashmir, Jharkhand, Meghalaya, Nagaland, Punjab, Rajasthan, Sikkim, Tripura, including Madhya Pradesh , covering 31.20% population are still without a Public Library Act . These states have to pass Public Library Acts, so that ICT enabled services can be implemented in these states. In the states of India where library acts have been enacted have rural libraries to some extent. The States of Andhra Pradesh, Gujarat, Karnataka, West Bengal are providing the library services to community to a very large extent. Still, considerable population is left out without any library services. The public services of the States of Gujarat and West Bengal can be taken as examples for developing the library services in other states. Again, out of the fourteen states, where library legislation has been passed, only eight stats have a public library system based on the Library Acts. The remaining six states could not commence its implementation. As a result, it can be stated that only eight states in India have a public library system based on library act provisions. Around 250 million adults in India are illiterate. The focus areas of the National Knowledge Commission is to achieve the functional literacy among 90 % of this adult population in the quickest time possible

RRRLF and Public Library System:

Raja Ram Mohan Roy Library Foundation (RRRLF) program of assistance is most helpful to the cause of public library services in the country. The foundation has taken long strides in promoting library service in the country. During the last 28 years, the Foundation has covered, 31000 public libraries located in the country in a scattered way. But many of these public libraries are mere reading rooms without much books or infrastructure or trained staff.

According to IFLA (International Foundation of Library Association and Institutions) standards, there should be one public library for every 3000 people and thus with over1028 million people India needs more than 3,

43,000 public library units. India has around 568558 inhabited villages and there may be just one public library for 8-10 of them. One of the IFLA standards stipulate with the nearest library unit should not be more than a mile away from the residential areas. The major constraints faced by the public library system for effective dissemination of information are because of the following reasons:

- A considerable percentage of the population is illiterate or functionally literate forcing library to be of minimal use to them.
- Poor allocation for the infrastructure improvement and collection development for public libraries
- Lack of enough sanctioned posts, forcing most of the services to be operated by voluntary non-professional staff, causing sufficient deterioration on information organization and servicing
- There is also a problem of educated professionals preferring to work in special and academic libraries than public libraries.
- Little emphasis on adoption Information Communication Technology for public library systems and services.

Public Libraries in Madhya Pradesh

The Madhya Pradesh state was formed on November 1, 1956. At the time of its formation, the state had 43 districts. Subsequently, sixteen more districts were formed in the year 1998. At the time of bifurcation of Chhatisgarh State, there were 61 district in the State The Chhattisgarh region, comprising of 16 districts, was separated to form a new state as per the provisions of Madhya Pradesh Reorganisation Act, 2000 and the new State of Madhya Pradesh came into existence on 1st November 2000, with 45 districts. Three more districts were formed in year 2002 raising the number of districts in the State to 48.The state now has 9 Commissioner Divisions, 48 Districts, 272 Tehsils and 313 Community Development Blocks, including 89 tribal development blocks.Under three-tier Panchayati Raj, the state has at present 48 Zila Panchayats, 313 Janpad Panchayats and 23,051 Village Panchayats. 14 Municipal Corporations,86 Municipalities and 237 Nagar Panchayats.

According to 2001 census, Madhya Pradesh has a total population of 60385118. Out of which, 35.03 percent population is Scheduled castes and Scheduled Tribes, which means that a sizeable population living in rural areas need effective library services for their betterment. Libraries in Madhya Pradesh were developed mainly through voluntary efforts. The first Government library of the State is the Central Library at Gwalior, which was set up by the British in 1927. In 1946 Dr. S.R. Ranganathan prepared draft library bill for the central provinces but nothing came out of it. The first public library was opened in Indore in 1954. The State is yet to adopt library legislation. Madhya Pradesh has a

State Central Library, but it is not fully owned by the Government. The State is providing library service through Regional, District, Sub-divisional and Village libraries. However, the resources and the services of these libraries have yet to be developed systematically.

Three Government Departments i.e. Education Department, Panchayat and Social Welfare Department and Tribal Department are promoting and supporting public library services in rural areas. The schemes proposed during Eleventh Five Year Plan 2007-12 and Annual Plan 2007-08 are as under:-

- Strengthening Libraries,
- Information Centre,
- Establish e-learning centres
- Digital Library &
- Foreign Language laboratories.

All Educational Institute will be facilitated with building furniture will be equipped laboratory and library. As mentioned, earlier, here is the example of Gyandoot.

GYANDOOT in Dhar District (M.P)

The emergence of Internet based "Gyandoot" digital libraries in Dhar District of Madhya Pradesh have changed the lives of unprivileged rural communities. "Gyandoot" is a unique form of G2C (Government to citizen) digital library activity to address the hardship imposed by transaction costs associated with government services. Dhar district began the new millennium with the establishment of twenty one Computers centres (called soochanalayas), in five Blocks of the district through an Intranet network. These soochanalayas (computer centres) have been established in Gram Panchayats to provide fee based services to the rural people and at the same time the information technology related services and the developmental needs of government departments and Panchayats are met free of cost. The Gyandoot network has been set up at a total cost of Rs. 25 lacs and the system is very cost-effective. The Soochanalayas cater not only to the twenty-one villages, but also to surrounding villages. Soochanalayas have been established in the buildings of such Gram Panchayats, which are located either at block headquarters or at prominent haat bazaar places or are prominent villages on major roads, which are easily accessible. Thus, the Gyandoot network benefits over half a million villagers living in 311 Gram Panchayats and over 600 villages with wide ranging information needs of its users.

These cyber cafes are operated by local operator called Suchak, who is a local volunteer.To begin with, these Soochanalayas have telephone line

connectivity. The hardware is procured and given to the Gram Panchayat under agreement with the Zila Panchayat.

Soochana Kosh and Soochak

Server/hub is a Remote Access Server (RAS) housed in the computer room in Zila Panchayat is called Soochana Kosh. An important aspect of the scheme is that the person selected to operate the Soochanalaya is a local youth from the same village who is trained to run the Soochanalaya. These operators are called Soochaks. They will run the Soochanalaya on commercial lines and generate income and livelihood for themselves. In fact, the Soochak is an entrepreneur and require maintenance and numeric data entry skills.

Issues for Development of Public Libraries

There are many challenges in development of public libraries in Internet era in India. In a country of one billion people where millions of Indians are connected to the Internet but millions more are not yet even connected to electricity. Despite of all these contrasting situations, Government of India is convinced that Information Technology application can help revolutionize life in rural regions at a minimum cost.

Public Libraries Network

Government should take steps for providing access to the Internet through public libraries and encourage developing communication access centres that will play an important role in bridging the digital divide. There are proposals from the telecommunications Ministry to open cyber-cafes and it would be a good idea to put them in public libraries wherever there is one nearby. Public library authorities have a responsibility to insure that library and information network are as comprehensively available as other public utilities and provide at reasonable cost. The number of public libraries network in our country should cross one lakh mark within a couple of years and then to reach as per IFLA recommendations, by the year 2020. The new and existing libraries should be planned with the minimum infrastructure to access information across the globe in multiple formats. The social entrepreneurs who are actively working on Information Communication Technology may undertake pilot projects to connect villages and establish Rural Public Libraries Network.The key for the success of the public library system in India is making the resources of a library available to its users is its access mechanism, using latest ICT. Networking of the public libraries can be taken in a phased manner with the help of established institutions like INFLIBNET or DELNET. The RRLF has a very big role to play by providing necessary infrastructural support.

Education and Training for Staff

Training is crucial in opening up online services for people using libraries. Staff working in public libraries must be encouraged to attend continuing education programs and enhance skills to use information technologies to the fullest extent in public library services. The public libraries must be under the control of a full time library professional and should be paid at par with their counterparts in academic and special libraries.

E-learning through Public libraries: In a country like India e-learning has more relevance especially for higher education. A large percentage of target population are beyond the reach of formal education channels due to various inherent weaknesses of the system and lack of infrastructure. The initiatives may further benefit the rural folk who are the victim to leave formal education channels either due to lack of facilities of due to lack of commitments.

Use of Technology in Library Extension Programs: Libraries must publicize their services in their services in their local community. There is a feeling among a section of people that illiteracy may not need libraries. It must be asserted that illiterate people are not ignorant people. Many of them are quite enlightened and are receptive to new ideas and currents of thought. The whole lot of them could be further enlightened by public libraries through their extension programs like lecture, discussions, film-shows, folk-dramas, exhibition, puppet-show and reading out books to them etc. Public libraries should begin its HIV/AIDS education and other services with a clearly defined concept on the part of the librarians to what the community needs in the way of library service with the best material collection the library can afford to fill that need. Realizing the seriousness of the problem libraries have to serve as powerful agencies for creating awareness and dissemination of relevant information among the people of the country. Till date handful of organizations including NGOs are working in this area.

E-Governance: An example of public libraries embraced the E-government initiative is the PRAGATI project of Pravara village of Ahmednagar District of Maharashtra, which aims to connect a hundred villages covering a population of more than 2.5 lakh with a wireless MAN solution (WMAN). It will help the villages in establishing local IT centres, dissemination of information regarding Government schemes, marketing of Agriculture products, health care, education, agro-processing, economic development, etc.

Creating virtual opportunities for Rural Communities: Know Net (http://www.knownet.org) is a virtual library for recognizing, valuing

and sharing local knowledge. It has created some simple and easy to use online resources to enable communities and individuals to take full advantage of information communication technology revolution. Know Net initiative is a virtual help point have a two way communication system for extracting and hosting information on the net with its entire activities being carried out through the help of remote volunteers.

CONCLUSIONS

The Gyandoot experience shows that the Cyber cafes can provide the required information to the rural masses, with the help of volunteers. However, it is sad to say that as the Administration gets changed the projects get shelved, thus becoming an obstruction to progress to the society. It is necessary to mention here that any good programme initiated by the predecessors should be accepted and further strengthened for the development of the society. What is needed is a systematic effort for the Integrated Library Development Programme, where in the resources and services of all the libraries in a locality/ region are made accessible to all the libraries of the locality digitally. This will eventually increase the resources and services of the public libraries.

The delivery of electronic information has to be negotiated on behalf of groups of libraries, a typical unit being a library authority. For the publisher, a successful sale to a group will be far more important than a sale to a single library. The academic community are already doing this, but the public sector is yet to develop that approach.

Existing public libraries need to be rejuvenated and new hybrid public libraries with traditional and digital collections be established as centres of excellence. Information networks and a culture of information sharing is required. National web based portals need to be established as one stop comprehensive source of information on issues like, water, sanitation, health, education, housing, nutrition, employment and other government policies etc.

The library environment will change rapidly and so much so the librarians, if they are to successfully play their new role.

The National Mission of Library and Information Services have clearly defined the guidelines for the development of public libraries at all levels for effective information services. The NMLIS is very categorical, to use ICT enabled services as an essential an integral part of the public libraries, so that these public libraries at the remotest villages are called the "real Rural Knowledge Centres/ Community Information centres".

The public library system in rural Madhya Pradesh has to be strengthened with the establishment of Rural Public libraries/Community

Information Centre (CIC),which assist individuals and the communities with daily problem solving information and with participation in the democratic process. The services concentrate on the needs of those who do not have ready access to other sources of assistance and on the most important problems that people have to face may cover a very wide field of our day to day needs, e.g. information on housing, loans, rural banks, prices, agricultural inputs, local markets, panchayats, cooperatives hospitals, etc. It may include statistical data related to people, socioeconomic data, Environment, NGO's rural medicine, government officials working in the area. The information has to be obtained for govt. bodies, institution, NGO's, govt. reports, field works and residents of the village. The information available in these centres can be used by administrators, NGO, field workers and residents.

Thus fulfilling the gap between information rich and poor, Librarians have to come forward and show their importance. They have to come out of library buildings and join hands with other organizations in providing more wide information. With the help of rural Public Libraries all sorts of information may be available under one roof with the cooperation of various agencies including public libraries. Thus expenses on running parallel agencies may be minimized, with the maximum utilization of resources "The library in a particular locality may become a clearing house for current information on community organizations, services, etc. it should respond to the community problems. It may provide specialized services both inside and outside the library building, such as job information for a community with high un-employments. The library may create local directories, maintain files of service agencies and local organization helps individuals to become self–sufficient. Users will have a none stop centre to get information about local issues, organizations and services and keep abreast of local issues. Govt. of India appointed a committee to prepare draft of National Policy on Library and Information System NAPLIS (1986) recommended that main thrust should go to rural public library and be developed as Community Library and Information Centres. It also recommends sponsor of these centre by various department. Rural Libraries can be transformed to CIC.

Suggestions

In the last we must consider one thing, that the success democracy cannot be achieved without the well-developed public library and converting them into Knowledge Resource Centres or Community Library & Information Centres. To develop a public library system in Madhya Pradesh we must consider following aspect on priority basis: -

1. The absence of a systematic Public Library System in Madhya Pradesh is also responsible for the haphazard growth of libraries. This system can be devised by legislation or administrative

sanction, for that urgent need of enactment of Public Library Act in Madhya Pradesh.

2. Modernization and automation of Public Libraries In Madhya Pradesh for easy accessibility to use.
3. Private Collaboration to develop public library services.
4. More emphases required for development of library movement in rural areas.
5. Urgent need for training of library professionals in computer applications
6. Setting up of an apex body to oversee and monitor the Public libraries in Madhya Pradesh, because at present three departments are controlling the libraries.
7. The experience of Gyandoot and Information Kiosk can me implemented in public library system in Madhya Pradesh to achieve the goals of public libraries.
8. A public library movement requires a dedicated programme and will of government. The government should recognise the importance of public libraries and its utility as a prime institute in society.

Libraries have played an important role in the spread of knowledge and awareness among persons of all ages. Considering the growing literacy and general awareness among the people, particularly the youth, in the urban as well as rural areas, it has become necessary to strengthen and upgrade the network of public libraries in the country. We have, therefore, provided an amount of Rs.1 crore for the State level public library in each State. In addition, we have provided amounts computed at Rs.20 lakh per district for up gradation of public libraries in the mofusil and rural areas. The Commission feels that the States may create a corpus, invest it and use the returns from it for the purchase of books and periodicals every year on a sustainable basis.

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Evaluation of Web Sites of Agricultural University Libraries of India: Serving Best Digital Information

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ABSTRACT

Agricultural University Libraries in India are moving towards a drastic change in terms of adoption of technology, services, purchase of electronic documents and online journals. Most of the libraries have put their information on the web sites. To serve the users in the best now they have included e-books, OPAC, CDROM Databases, Internet, Video Conferencing services etc. So they are known as Hybrid Libraries. In this paper an attempt has been made to analyze and evaluate web sites of agricultural university libraries available on the Internet on the basis of purpose, authority, coverage, contents and currency. This will enable the policy maker, library administrators and users that how much information should be put on the web sites so that maximum users can be benefited.

Keywords Digital Library; Hybrid Library; Web Sites; Agricultural University Library

Introduction

Today, the university libraries are providing services to their clientele not only in print media but also through e-books, agricultural CD ROM databases, Internet and Video Conferencing. These types of libraries are known as Hybrid Libraries. In this digital age, Web sites also have become very popular and strong tools for the educational, research, commercial organizations and institutions to present themselves on the Internet. Through Internet they provide information for the public to be accessed by a wide range of people across the world.

There are 40 state agricultural universities (SAUs) and 5 deemed universities, totaling 45 in India. Links of these SAUs can be found on the website of ICAR (http://www.icar.org.in). Web sites of most of the agricultural universities in India are available on Internet. In the same way, we can find web pages of the university libraries on their web sites.

But the information provided on the library web pages varies drastically which ranges from some lines to many pages.

Evaluation of Web Sites

By evaluation of web site of the university we mean that whether the web site is able to present the information of the university to those who want to know about that university. By seeing and accessing the information on that web site, we can judge the quality and purpose of that web site. There are some basic principles on the basis of which we can evaluate the web site.

Principles of Evaluation of Web site

Following are the principles of evaluation of web sites, which have been described as under:

A. **Purpose of the Website:** We should know the purpose of the web site i.e. whether the web site wants to inform or persuade. In case of agricultural university libraries the purpose is naturally to provide information.

B **Authority:** The best sites are produced by those who have appropriate education, training, or experience to write with authority on the topic. In case of agricultural university libraries, all the information has been provided by the library professional themselves. So the information can be trust worthy.

C **Contents:** What items has been considered in the website? It also shows that whether the author showed some biasness or the balanced information has been provided. In case of agricultural university libraries, the history, staff, collection, facilities, services, opening hours and library rules can be the balanced items, which each library should provide.

D **Coverage:** In this, we should know that whether the links provided complement the document. There should be no missing links. It is also considered here that there should be balance between text and images. More over if we want to have information, we should know, whether it is free or paid. At the same time information should also be provided if any special software is required for accessing information.

E **Currency:** It is also important that whether the pages are updated regularly. At the same time links should be updated regularly. There should be no dead links on the pages. Agricultural universities should update their web sites regularly and at the same time they may ask the library administrator to supply the current information on the library to update the library link (page).

While designing a web site if the above-mentioned principles are considered, then that web site will be treated as the best web site.

Purpose of the Study

It the age of Information Technology every reader wants information on Internet. So the purpose of the paper is to study that how much information we can put on the library's web site.

Objectives of the study:

1. To navigate and evaluate the web sites of the agricultural university libraries available on Internet.
2. To analyze the highlights and week point of the web sites.

Methodology

For this all the available web sites of agricultural university libraries in India have been accessed, studied and evaluated. After analysis, information about these web sites has been shown in findings.

Findings

1. **Direct Links of Library on Web Sites of Agricultural Universities:** As every one knows that library is an integral part of university to carry forward its education, research and extension services', so putting library link on its Home Page is must. Out of 45 universities, these have put the library link on the main page: ANGRAU, AAU (Anand), AAU (Assam), BAU, BCKV, CGSHAU, CSKHPKV, GBPUAT, JAU, JNKVV, MAU, MPKV, SDAU and UASD.
2. **Indirect Links of Library on Agricultural University's Web Sites:** Providing direct links of the library on the on the main page is very important. But it is not seen in many web sites of the Agricultural University Libraries. Through some other links like academic, facilities, services etc., we can find the web pages of the university libraries. In this category following SAUs are mentioned: AAI, CSAUK, DYSPUHF, DBSKV, GADVASU, IARI, KAU, MAFSU, MPUAT, PAU, SKUAST and TANUVAS.
3. **UPDATION OF WEB SITES:** Providing current information should be purpose of each library. Toady every person want to have information from the Internet. That is why most of the universities have put their information on their web site and thus making it open for public. For this the universities should keep their web sites updating on a specific interval, so that the latest information could be provided to the end user. There are some universities, whose web sites were found updated in the year 2007. These are: ANGRAU, CSAUK, DYSPUHF, IGAU, IVRI, JNKVV, MAFSU, and TANUVAS. The web sites which were created in the year 2006 but not shown any updating were: AAU (Anand), PAU, UPVETUNI, and

GADVASU. The web sites which were created in 2005 and not shown any updation after this year on the sites were: BAU, BCKV and MAFSU. In the same way we find the web sites which were created from 2002 to 2005 but there is no indication of updation on the web sites. These are: AAI, NDRI and MPUAT. There are the web sites which might have created and updated in recent years but they have no date mentioned on their web site. These are CCSHAU, DBSKKV, GBPUAT, JAU, KAU, MAU, MPKV, SDAU, and UASD.

4. **Representation of Information:** We can provide information either on textual basis or pictorial. But best web site is that where there are pictures as well as texts on the main page of the web site. Except a few, most of the libraries have provided both. On the other hand we can find information in only textual basis on following web sites of SAUs: AAI, AAU (Assam), GADVASU, JAU, MAU, MAFSU, SKUAST and UPVETUNI.

5. **Design of Home Page of Library:** Many of the SAUs have designed the home page of library using bars and pictures on a single page with links of the activities of the library. In this category following libraries fall: AAU (Assam), CCSHAU, CSKHPKV, DBSKKV DYSPUHF, IARI, IGAU, MAU, MPKV. While there are the libraries also whose information on home pages are spreading on a long scrolling page. These are ANGRAU, BAU, CSAUK, GBPUAT, IGAU, JAU, KAU, MAU, NDRI PAU, SDAU, SKUAST, UASD and UPVETUNI.

6. **No Link of Home page of Library:** There are few SAUs whose web site is available on the Internet, but there is no home page of Library. These are: RAU, CIFE and IVRI.

Suggestions

1 The apex body ICAR should update the SAUs links as the web sites of many SAUs are available on the Internet but not included in the link under heading 'State Agricultural Universities' on the its web site. At the same time some links are misleading which should be updated.

2 Every agricultural university should go on updating its home page so that the latest information could be provided.

3 Every Agricultural university should provide links to the library on its home page.

Conclusion

It has become the need of the hour to provide information on the websites so as to make it more public. Web sites are the best sources for the universities and organization to represent them on the map of Internet. By going through the web sites of SAUs it has been observed that some of the SAU Libraries have developed a very good web site such as AAU, CSAUAT, CSKHPKV, IARI, MPKV etc.

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From Print to Digital: Techniques and Technology for Conversion

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ABSTRACT

The scope of digitization and digital image technology is ever increasing day by day. Different approaches & technologies to translate printed documents into digital form have been discussed. Different products & technology options have also been discussed. Maintaining the sanctity of digital documents is a major challenge, which has also been discussed.

Approaches of Scanning

The digital imaging technology offers a number of choices for digitization of documents. These technologies can be adopted depending on the objective of scanning, end user, availability of finances, etc. There are three basic approaches that can be adapted to translate from print to digital

- Scanned as Image
- OCR and Retaining Page Layout
- Re-keying the Data

Scanned as Image

It is the lowest cost option in which each page is an exact replica or the original source document. Since OCR is not carried out, the document is not searchable. Most scanning software generate TIFF format by default, which, can be converted in to PDF using a number of software tools. Scan to TIFF / PDF format is recommended only when the requirement of digitization is to make documents portable and accessible from any computing platform. The image can be browsed through a table of contents file composed in HTML that provides link to scanned image objects.

OCR and Retaining Page Layout

Optical Character Recognition (OCR)

Optical Character Recognition (OCR) is a software process that recognizes printed text as alphanumeric characters. Intelligent Character recognition (ICR) is also a software process and pattern based character recognition that recognizes handwritten and printed text as alphanumeric characters. Zone OCR is ideal where same forms are repeatedly processed. Zone OCR enables automated document indexing that reads certain regions (zones) of a document and then places information into the appropriate index template fields. In this way it reduces data entry time and demands on system memory.

The latest versions of both *Xerox's TextBridge* and *Caere's Omnipage* incorporate technology that allow the option of maintaining text and graphics in their original layout as well as plain ASCII and word-processing formats. Output can also include HTML with attributes like bold, underline, and italic is retained.

Retaining Layout after OCR

The process for retaining the page layout is software dependent. Many software packages now offer facility of retaining the page layout after it has been OCRed. Caere's Omnipro offer two ways of (True Page Classic and True Page Easy) retaining page layout following OCR.

- True Page Classic places each paragraph within a separate frame of a word processor into which the OCR output is saved. If one wishes to edit anything subsequently, then the relevant paragraph box may need to be resized.
- Easy Edit facilitates editing of pages without the necessity of resizing the boxes although there is a greater chance of spillage over the page.

Since OCR is not 100 percent accurate, it is therefore, imperative to cleanup after OCR unless original scanned image will be viewed as page and OCR is being used purely to create a searchable index on the words

that will be searched via a fuzzy retrieval engine like Excalibur which is highly tolerant to OCR errors.

Re-keying

A solution of this kind would comprise of keying-in the data and its verification. This involves a complete keying of the text, followed by a full re-keying by a different operator, the two keying-in operation might take place simultaneously. The two-keyed files are compared and any errors or inconsistencies are corrected. This would guarantee at least 99.9% accuracy, but to reach 99.955% accuracy level, it would normally require full proof-reading of the keyed files, plus table lookups and dictionary spell checks.

Technologies for Digitisation

Digital imaging is the process of converting paper documents including text, graphics, or pictures into digital images that can be made accessible over electronic networks. A digital image, in turn, is composed of a set of pixels (picture elements), arranged according to a pre-defined ratio of columns and rows. An images document file can managed as regular computer file and can be retrieved, printed and modified using appropriate software. Further, textual images can be OCRed so as to make its contents searchable. Digital imaging is an inter-linked system of hardware, software image database and access sub-system with each having their own components. Digital systems include.

- Hardware (Scanners, computers data storage and data output peripherals)
- Software (image capturing, data compression)
- Network (data transmission)
- Display technologies

Steps in the Process of Digitization

The following four steps are involved in the process of digitization.

- Scanning
- Document image processing (DIP)
- Electronic Filing System (EFS) and
- Document Management Systems (DMS) provides all or more of these functions

Scanning

Scanning is the process in which the hardcopy is converted into a softcopy. The scanning produces a raster (picture) image that can be stored on a computer. The scanner should preferably have both *flat bat* and *ADF* (Automatic Document Feeder). The process of scanning involves acquisition of an electronic image through its original that may

be a photograph, text, manuscript, etc. into the computer using an electronic image scanner.

An image is scanned at a predefined resolution and dynamic range. The resulting file, called "bit-map page image" is formatted (image formats describes elsewhere) and tagged for storage and subsequent retrieval by the software package used for scanning. Acquisition of image through fax card, electronic camera or other imaging devices is also feasible. However, image scanners are most important and most commonly used component of an imaging system for transfer of normal paper-based documents.

Document image processing (DIP): Indexing

The process of indexing scanned image involves linking of database of scanned images to a text database. Scanned images are just like a set of pictures that need to be related to a text database describing them and their contents. An imaging system typically stores a large amount of unstructured data in a two-file system for storing and retrieving scanned images. The first is traditional file that has a text description of the image along with a key to a second file. The second file contains the document location. The user selects a record from the first file using a search algorithm. Once the user selects a record, the application keys into the location index, finds the document and displays it. Most of the document imaging software packages, through their menu drive or command driven interface, facilitate elaborate indexing of documents. While some document management system facilitate selection of indexing terms from the image file, others allow only manual keying in of indexing terms. Further, many DMS packages provides OCRed capabilities for transforming the images into standard ASCII files. The OCRed text then serve as a database for full-text search of the stored images.

Electronic Filing System (EFS): Store

Every part of an electronic page image is saved regardless of present or absence of ink. The file size varies directly with scanning resolution, the size of the area being digitized and the style of graphic file format used to save the image. The scanned images, therefore, need to be transferred from the hard disc of scanning workstation to an external large capacity storage devices such as an optical disc, CD ROM / DVD ROM disc, snap servers, Cartridges etc. While the smaller document imaging system use offline media, which need to be reloaded when required, or fixed hard disc drives allocated for image storage, larger document management system use auto-changers such as optical jukeboxes and tape library systems. The storage required by the scanned image varies and depends upon factors such as scanning resolution, page size, compression ratio and page content. Further, the image storage device may be either remote

or local to the retrieval workstation depending upon the imaging systems and document management system used.

Document Management Systems (DMS): Retrieve

Once scanned images and OCRed text documents have been saved as a file, a database is needed for selective retrieval of data contained in one or more fields within each record in the database. Typically, a document imaging system uses at least two files to store and retrieve documents. The first is traditional file that has a text description of the image along with a key to the second file. The second file contains the document location. The user selects a record from the first-file using a search algorithm. Once the user selects a record, the application keys into the location index, finds the document and displays it. Most of the document management system provides elaborate search possibilities including use of Boolean and proximity operators (and, or, not) and wild cards. Users are also allowed to refine their search strategy. Once the required images have been identified their associated document image can quickly be retrieved from the image storage device for display or printed output.

Technology of Digitization

Digital images, also called "bit-mapped page image" are "electronic photographs" composed or set of bits or pixels (picture elements) represented by "0" and "1". A bitmapped page image is a true representation of its original in terms of typefaces, illustrations, layout and presentation of scanned documents. As such information contents of "bit-mapped page image" cannot be searched or manipulated unlike text file documents (or ASCII). However, an ASCII file can be generated from a bit-mapped page image using an optical character recognition (OCR) software such as Xerox's TextBridge and Caere's OmniPage. The quality of digital image can be monitored at the time of capture by the following factors:

- Bit depth/dynamic range
- Resolution
- Image enhancement
- Compression
- Scanning scale: 100%

Bit Depth or Dynamic Range

Bit depth is the possible number of colour combinations of the colours. When the amount of colours in the combination is increased, the image appears darker. The number of bits used to define each pixel determines bit depth. The greater the bit depth, the greater the number of gray scale or colour tones that can be represented.

Dynamic range is the term used to express the full range of total variations, as measured by a densitometer between the lightest and darkest of a document. Digital images can be captured at varied density or bits pixel depending upon i) the nature of source material or document to be scanned; ii) target audience or users; and iii) capabilities of the display and print subsystem that are to be used.

Bitonal or black & white or binary scanning is generally employed in libraries to scan pages containing text or the drawings. Bitonal or binary scanning represents one bit per pixel (either "0" (black) or "1" (white). Gray scale scanning is used for reliable reproduction of intermediate or continuous tones found in black & white photographs to represent shades of grey. Multiple numbers of bits ranging from 2-8 are assigned to each pixel to represent shades of grey in this process. Although each bit is either black or white, as in the case of bitonal images, but bits are combined to produce a level of grey in the pixel that is black, white or somewhere in between. Lastly colour scanning can be employed to scan colour photographs. As in the case of grey-scale scanning, multiple bits per pixels typically 2 (lowest quality) to 8 (highest quality) per primary colour are used for representing colour. Colour images are evidently more complex than grey scale images, because, it involves encoding of shades of each of the three primary colours, i.e. red, green and blue (RGB). If a coloured image is captured at 2 bits per primary colour, each primary colour can have 22 or 4 shades and each pixel can have 44 shades for each of the three primary colour. Evidently, increase in bit depth increases the quality of image captured and the space required to store the resultant image. Generally speaking, 12 bits per pixel (4 bits per primary colour) is considered minimum pixel depth for good quality colour image.

Resolution

Resolution denotes the number of dots spread over an area. This is measured in dots per inch, which is shortly termed as "DPI". Pixel or dots form technically the images. When the resolution is increased, the images appear darker. Scanning at 200 dpi is done generally and if the image quality is poor the standard recommended maximum limit can be upto 600dpi. It is important to point out here the memory size increases with the increase of dpi. Therefore decision related to scanning at judiciously decided dpi for different kinds of document should be done in order to optimize memory. Some preservation projects scan at 600 dpi for better quality. A standard SVGA/VGA monitor has a resolution of 640 x 480 lines while the ultra-high monitors have a resolution of about 2048 x 1664 (about 150 dpi).

Threshold

The threshold setting in bitonal scanning defines the point on a scale, usually ranging from 0.255, at which gray values will be interpreted as black or white pixels. In bitonal scanning, resolution and threshold are the key determinants of image quality. Bitonal scanning is best suited to high-contrast documents, such as text and line drawings. For continuous tone or low contrast documents such as photographs, gray scale or colour scanning is required. In gray scale/colour scanning both resolution and bit depth combine to play significant roles in image quality.

Compression

Image files are evidently larger than textual ASCII files. It is thus necessary to compress image files so as to achieve economic storage, processing and transmission over the network. A black & white image of a page of text scanned at 300 dpi is about 1 mb in size where as a text file containing the same information is about 2-3 kb. Image compression is the process of reducing size of an image by abbreviating the repetitive information such as one or more rows of white bits to a single code. The compression algorithms may be grouped into the following two categories:

- **Lossless Compression:** The conversion process converts repeated information as a mathematical algorithm that can decompressed without loosing any details into the original image with absolute fidelity. No information is "lost" or "sacrificed" in the process of compression. Lossless compression is primarily used in bitonal images.

- **Lossy Compression:** Lossy compression process discards or averaged details that are least significant or which may not make appreciable effect on the quality of image. This kind of compression is called "lossy" because when the image compressed using "Lossy" compression techniques, is decompressed; it will not be an exact replica of the original image. Lossy compression is used with gray scale/colour scanning, and in particular with complicated images where merely appreciating the information will not result in any appreciable file savings.

Compression is a necessary in digital imaging but more important is the ability to output uncompressed true replica of images. This is especially important when images are transferred from one platform to another or are handled by software packages under different operating system.

Uncompressed images often work better than compressed images for different reasons. It is thus suggested that scanned images should be either stored as uncompressed images or at the most as lossless compressed images.

Image Enhancement

Image enhancement process can be used to improve scanned images at a cost of image authenticity and fidelity. The process of image enhancement is, however, time consuming, it requires special skills and would invariably increase the cost of conversion. Typical image enhancement features available in a scanning or image editing software include filters, tonal reproduction, curves and colour management, touch, crop, image sharpening, contrast, transparent background, etc. In a page scanned in grayscale, the text/line art, and half tone areas can be decompose and each area of the page can be filtered separately to maximize its quality. The text area on page can be treated with edge sharpening filters so as to clearly define the character edges, a second filter could be used to remove the high-frequency noise and finally another filter could fill in characters. Gray scale area of the page could be processed with different filters to maximize the quality of the halftone.

File Formats

The digitally scanned images are stored in a file as a bit-mapped page image, irrespective of the fact that a scanned page contains a photograph, a line drawing or text. The scanned image can be formatted and tagged in dozens of different formats to facilitate easy storage and retrieval depending upon the scanner and its software. National and international standards for image-file formats and compression methods exist to ensure that data will be interchangeable amongst systems. An image file format consists of three district components, i.e. **header** which stores information on file identifier and image specifications such as its size, resolution, compression protocols, etc.; **Image data** consisting of look-up table and image raster and lastly **footer** that signals file termination information.

TIFF (Tagged Image File Format) is the most commonly used file format and is considered de facto standard for bitonal scanning. TIFF is a truly multi-platform protocol and is a good candidate for scanning projects. Some image formats are proprietary, developed and supported by a commercial vendor and require specific software or hardware for displaying the printing scanned images.

Tools of Digitization

An image scanning system may consists of a stand-alone workstation, where most or all the work is done on the same workstation or as a part of a network of workstation with imaging work is distributed and shared amongst various workstations. The network usually includes a scanning station, a server and one or more editing, retrieval stations. A typical scanning workstation for a small, production level project, could consist of the following:

i) Microcomputer – P-IV
ii) Scanner and Scanning Software
iii) Storage System
iv) Network
v) Display System
vi) Printer

Here we will concentrate on scanners and scanning software as important components of scanning tool.

Scanners

Digital scanners are used to capture a digital image from an analogue media such as printed page or a microfiche / microfilm at a predefined resolution and dynamic range (bit range). There are two types of image scanners:

- vector scanner and
- raster scanners.

The vector scanners scan an image as a complex set of x,y coordinates. Vector images are generally used in geographical information systems (GIS). The display software for the vector image interprets the image as function of coordinates and other included information to produce an electronic replica of the original drawing or photograph. Vector images can be zoomed in portion to display minute details of a drawing or a map. Maps, engineering drawings, and architectural blueprints are often scanned as vector images. Raster images are captured by raster scanners by passing lights (laser in some cases) down the page and digitally encoding it row by row. Multiple passes of lights may be required to capture basic (as a set of bits known as bit map) colours in a coloured image.

Raster scanners are used in libraries to convert printed publications into electronic forms. Majority of electronic imaging system generate raster images. The scanners used for digitizing analogue images into digital images come in a variety of shapes and sizes.

There are following types of Scanners:

a. Flatbed Scanners – It looks like a photocopier and is used in much the some way. Source material, in a flatbed scanner is placed face down for scanning. The light source and CCD move beneath the platen, while the document remains stationary as in the case of photocopying machine. Flatbed scanner comes in various models right angle, prism and overhead flatbed. **Product Examples**: HP ScanJet 6300C, Ricoh IS420

b. Sheet-Feed Scannersis: It is fed over a stationary CCD and light source via roller, belt, drum, or vacuum transport. In contrast to be flat-bed scanner, sheet-feed scanner have optional attachment to auto feed uniformed-sized stacks of documents to be scanned.
Product Example: Kodak 500S, Tangent CCS300-SF

c. Drum Scanners: In a drum scanner is wrapped on a drum, which is then rotated past a high- ntensity light source to capture the image. Drum scanners are specially targeted for graphic art market. Drum scanners offer highest resolution for grey scale and colour scanning **Product Example:** Juno CP-4000, Scan graphics ScanMate5000, ColorGetter.

d. Digital Cameras : Source material is placed on the stand and the camera is cranked up or down in order to focus the material within the field of view. Digital cameras are most promising scanner development for library and archival applications. **Product Example:** Zeutschel OminiScan 3000, Minolta PS 3000.

e. Slide Scanners : Slide scanners have a slot in the side to accommodate a 35mm slide. Inside the box the light passes through the slide to hit a CCD array behind the slide. Slide scanners can generally scan only 35mm transparent source materials.
Product Example: Kodak PCD Scanner 4045, Nikon LS3510, Leaf Systems Leafscan 45.

f. Microfilm Scanner: Specially targeted to library/archival application, microfilm scanners have adapters to convert roll film, fiche, and aperture cards in the same model.
Product Example: Mekel M500XL, SunRise SRI-50, Lenzpro 2000 Multimedia

g. Video Frame Grabber: Video digitizers are circuit boards placed inside a computer, attached to a standard video camera. Any thing that is filmed by the video camera is digitized by the video digitizer

Organizing Digital Images
A disc full of digital images without any organization, browse and search options may have no meaning except for one who created it. Scanned images need to be organized in order to be useful. Moreover, images need to be linked to the associated metadata to facilitate their browsing and searching. The following three steps describe process of organizing the digital images:

Organize the scanned image files into disc hierarchy that logically maps the physical organization of the document. For example, in a project on

scanning of journals, create a folder for each journal, which, in turn, may have folder for each volume scanned. Each volume, in turn may have a subfolder for each issue. The folder for each issue, in turn, may contain scanned articles that appeared in the issue along with a content page, composed in HTML providing links to articles in that issue.

Name the scanned image files in a strictly controlled manner that reflect their logical relationship. For example, each article may be named after the surname of first author followed by volume number and issue number. For example, file name "smithrkv5n1.pdf" conveys that the article is by "R.K. Smith" that appeared in volume 5 and issue no.1. The file name for each article would, therefore, convey a logical and hierarchical organization of the journal.

Hybrid Solution

It would be imperative to consider producing a more reliable media like microfilm simultaneous to the process of digitization if archival preservation is one of the objectives. The process of microfilming produce a high-resolution images on the microfilm / microfiche that equates to approximately 1000 dpi in digital binary scanning. In comparison, a bitonal digital image can at best be scan at 600 dpi for archival storage. The microfilm / microfiche can be used for conversion to electronic image format. Moreover, future improvements in scanning technology can be utilized by rescanning a microfilm to obtain high-resolution images. It is expected that ultimately electronic scanning will reach or exceed photographic quality. Durability and reliability of computers and storage media and formats used for electronic image files may also increase and stabilize.

Conclusion

Digital conversion of documents is worldwide phenomenon. The easy portability, and data backup of digital documents are two important driving force for it. The important challenges in this direction are technological changes, redundancy of information, data integrity, statutory status and digital storage of documents. It is important to decide upon different organization policies before going for digitization of documents.

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Impact of Information Technology in Marketing of Medical Library Services and Products

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ABSTRACT

Changes brought by the information and communication technologies reflect on the libraries and the users of medical professionals in accessing speedy information for their day-to-day diagnosis, patient care & R & D activities requirements. The information communication technology brought radical changes upon libraries to compel to purchase latest information products as well as services for satisfaction of their users and survival of libraries in the modern era.

Introduction

Marketing activities are relatively new to health services organizations, dating from only the late 1970s. The use of marketing techniques by medical libraries is even more recent. Marketing is a business strategy designed to provide information about the potentials of a service or product to consumers of a given service in order to entice the potential consumer of that given service or product[1]. Marketing is more than providing information about established goods or services to potential consumers. A "market-driven marketing process ... must begin with an identification of needs and wants, and then lead to the development and promotion of a product that fulfills those needs and wants[2].

Marketing principles and strategies are used not only in the profit making business sector, but also in the non-profit/services such as hospitals, libraries, and postal services with some adjustments to suit for the non-profit sector. For a fact, in the library sector, the aim of the service

should be the fulfillment of objectives rather than earning a financial profit. Library's main concern would be the user satisfaction while financial profit also can be obtained by charging membership fees, fines for overdue books, photocopying services, online searching and other fee-based services.

Marketing in its rapid development has widened its meaning and scope to cover a larger sense with a wider course of activity. On the other hand as the transition of the economy. The concept of a library marketing audit, recently introduced in the literature, was defined as the process that permits a library to examine its audiences and services within the contextual environment for the purposes of evaluation, decision making, and long-range planning[3].

The Information Communication Technology (ICT) that has made the impossible possible. ICT is becoming an integral part of health educational reforms. Information pertaining to self-diagnosis, monitoring and medication is increasingly available on the Internet. Health information on the Internet is abundant and uncontrolled, as patients are increasingly turning to the Internet for medical information

Information Marketing

Information marketing is one of the major levels of change in the context of libraries and information centers. The new role of information as 'commodity' is now widely accepted and this has made its management, as a resource, necessary. Information as a commodity includes information services as well as different channels that carry information. Information marketing means creation of need and awareness of information services and products among the users. Information about different kind of services and its products a library can provide, from where these can be secured, what is the cost that one has to pay for obtaining them etc. should reach the users.

Information marketing begins with the assessment of information needs of users and ends with the satisfaction of the users. The intermediate stages consists of

1. production of products and services for the users;
2. use of these products and services by the users; and
3. Modifications to be introduced in the services and products to improve them.

Libraries are basically service organizations. It is therefore, quite useful to consider these distinctive characteristics of services[4]. They are

1. Intangibility: Services by their very nature are intangible they cannot be seen, touched or tested but they can certainly

be experienced when made available to the users and used by them.

2. Inseparability: Services are inseparable from a person or an organization or any other source that provides them.
3. Variability: Service are highly variable because they depend on the sources which provide them and there are differences in time, quality and place where they are provided.
4. Perishability: Services cannot be stored. They must be produce on demand and cannot be inventorised.
5. Ownership: Ownership of services cannot be transferred as in case of products. One cannot by and won services.

Marketing of products is relatively easy because they are tangible, their supply is not perishable and quality is not highly variable. However, in the context of library and information centers, marketing of information services is very important because they are carefully directed to meet specific requirements of the users, they can go a long way in improving the image of the library and can also generate resources for the library.

Need of Information Marketing

Libraries invest huge amount on collection, development, processing, storage and dissemination of available information resources. These resources, which are so expensive often remain underutilized or unutilized which amount to wastage of money, time, energy, and space. Marketing provides for optimum utilization of information resources. Sometimes, users are not keen on fulfilling them. Marketing helps to facilitate need perception and understanding about the importance of information and there by creates demand for information. Thus, information needs of the users get improved. Extension of information services and products to potential users is made possible in an efficient manner with the help of marketing.

With the visible impact of Information Technology on medical libraries, the expansion of the Librarians responsibilities are added specifically in marketing in Library and Information Services and Products to the user community.

1. Understanding the marketing process with the Library context.
2. Product, Price, Promotion and Product Distribution of marketing in the context of information products and services.
3. Considering the information product and services as sustainable sources for the generation reviews.

Evaluation of the Information Products and Services

With identify and understand the potential users in relation to the following aspects may be considered to evaluate the information product and services of the user community.

1. To identify and understand the potential users in relation to the resources and facilities of the Medical Libraries;
2. To understand the Information needs of such users more accurately;
3. To generate the information products and services that are tailored to meet the needs of such users ; and
4. To remain cost effective in the process of information products and services.

Computerisation of Libraries

The present scenario the information exposition is very high, quantity of information in the form of books and other printed materials have been enormously increased. Hence it is difficult for both big and small libraries to supply their readers with sufficient information sources up to date. The choice of appropriate IT application in a Library depends on the size of the Library, number of holdings, number of journals subscribed, the clientele and the availability / non availability of the online users services. In any Computerised Library, the following are the basic pre-requirisities.

1. Data base creation of books and journals other documents available in the Library;
2. Catalogue of Books , journals and other reading materials;
3. Selective Dissemination of Information;
4. Current awareness service;
5. Bibliographic Service;
6. Directory services; and
7. Audio, Video, DVD collections.
8. Dissertations, reports, proceedings etc.
9. Online Public Acess Catalogue for accessing the collection in the library
10. Online searching of journal articles in the database

Specifications and Procurement of Equipments

The libraries apart from the deciding on the hardware and software must also decide on the standards of the bibliographic description, the format in which the records should be entered (MARC) and whether entered in one format can be exchanged to other format. This will enable easy sharing information among the libraries and user communities. It is helpful to examine the major activities performed within the library acquisition, cataloguing, circulation and reference and to not how each function is being affected by technology.

In the market many library application software's are available. Some of the major software's are ARCHIVES, LIBMAN, MAITRAYEE, THRISHANA, CDS/ISIS, LIB MANAGER, SANJAY, WIISYS, LIBRA; LIBSYS, BASIS+, SUCHIKA, NEWGENLIB, AUTOLIB, EASYLIBSOFT, E-GRANTALAYA, GYNODAYA, LIBRA2000, LIBRAIRAN, LIBSUITE, NEXLIB, SWRL, GREENSTONE, REDIKER, DSPACE, EPRINTS, FEDORA AND LIB SOFT etc.

On Line Information Service

The expert systems and artificial intelligence technology could make on-line searching easier, less time consuming, less expensive user friendly for the general readers with the help of knowledge-based online information retrieval systems. Online search is a database to be searched using text retrieval software. In this system it is possible to access the information via NICNET. Many databases are available in the above system some of them are MEDLINE, AIDSLINE, AIDSTRIAL, POPLILNE and ADONIS etc.

Networking of Libraries

In 1960 medical science libraries pioneered the use of computer technology to produce bibliographic publication. High performance computers are already being used for producing health products and drugs. To take a step well under way to connect the more health care in citations to develop the high speed network. To meet the information needs of the health professionals manly health science librarians are using the internet for accessing NLM's databases like pubmed, relemed and Cochrane library etc and other specialized databases for documenting transmission. Due to spiraling cost of information becoming a key of development, sharing of resources is the best way out. Some of the successful networking in the world are NICNET, OCLC, INIS, AGRIS, MEDLARS Networks etc.

Benefits of the Information Product and Services

Products and services which provide benefits for users and which answer users' most important needs are the core business of the library and information service as according to Elliot[5] . These products appear as a response to user priorities in the form of commercial intelligence, educational, leisure, recreational or social information. All of the services offered by the library: lending services, inter library loan, on-line searching, house-bound-readers services, picture loans etc. are library's products that can be marketed successfully. Product concept in the information sector is spread out over three levels; core level, tangible level, and augmented level. Library can provide bibliographic information, abstracts and summaries of information, which disseminate the core level information. Books, databases, journals, bulletins, etc.

represent the tangible information. Library can also augment information through quality, reliable, speedy and timely professional services. Weing, and Darlene E negates that the library's product can be arranged within a three dimensional structure of the product mix, product line, and product item. Under the product mix 'collection' of the library represents as a product line. Product items include books, periodicals, videos, films, audio recordings etc. For another fact, services of the library can be considered as a product line and the circulation of library materials, Inter Library Loan, reference services, and on-line searching etc.,

Conclusion

Due to the development of new technology and impact of information explosion, demand for information is widely increasing. Medical professionals require much latest information of sophisticated medical equipments in diagnosis of critical diseases. More business news is required with economic liberalization, and the global-wide entrepreneurship. Library has a great role to play in the provision of current, updated, and rapid information for this demand. While libraries have been closing or struggling to stay afloat enterprising companies have begun to discover the commercial potential of health products what we do, and are competing with us to sell much of the information for the sake of good to the human kind.

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L2 & IL2: LIBRARY 2.0 AND INFORMATION LITERACY 2.0

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ABSTRACT

This paper presents an overview of the changing scenario of LIS sector and tries to find out the route of Library 2.0 from Web 2.0. Definitions, essential elements and basic tools of Library 2.0 have been explored. Role of Information Literacy in Library 2.0 environment has been analyzed. Principles and essential elements of Library 2.0 explained. The paper also explains the intensification of Information Literacy 2.0, and elucidates how IL can be implemented in Library 2.0 environment. Information Literacy initiatives in Library 2.0 environment have been mentioned. Some suggestions have been drawn to conclude the paper.

Keywords: Web 2.0, Library 2.0, and Information Literacy

Introduction

Due to the rapid evolutions in information technology sector, the role of Librarians is constantly changing. When computers were invented librarians became information officers, Information Brokers; after invention of library automation technologies and internet librarians became Information Managers, Network Managers/Specialists, Knowledge Managers, System Specialists/Designers. After Web 2.0 technology, they are moving toward Librarian 2.0. This role requires them to be conversant about several web 2.0 technologies such as RSS, Wikis, Blogs, Web tools, Technology standards and protocols. Since its inception this profession has been playing the role of a trainer and information facilitator, as the main responsibility of a librarian is to enhance the information literacy levels of its users. To be a good trainer or facilitator, a librarian has to be in the know how about modern

technologies to access, store, manage, retrieve and disseminate information efficiently and effectively.

The term "Library 2.0" comes from the term "Web 2.0". "Web 2.0 is a network platform, spanning to all connected devices. Its applications take the most intrinsic advantages like delivering software as a continually-updated service that gets better with more the people use it, consuming and remixing data from multiple sources, including individual users, while providing their own data and services in a form that allows remixing by others, creating network effects through an "architecture of participation" and going beyond the page metaphor of Web 1.0 to deliver rich user experiences."(1)

Library 2.0 or L2

Library 2.0 is based on Web 2.0 applied and related to the library environment. Web 2.0 encourages active participation and interaction of library users in the internet environment. Library 2.0 is a transformation and library professionals are working and looking forward to refurbish library services being offered to patrons. The implications of this technology are enormous and are making an impact on every part of the society. Professionals are beginning to acknowledge by writing about it, or sharing their introductory views on the "biblioblogosphere" (weblogs written by librarians). Journals and other more traditional literature has yet to fully address the concept, but the concept and technologies of Web 2.0 to library services has been widely framed as "Library 2.0". "Walt Crawford, for example, argues that Library 2.0 comprises a combination of tools and attitudes which are excellent ideas and not new to librarianship, a few business- and tool-focused attitudes which will not serve all users and user communities, and incorrectly places libraries as the appropriate source for all users to gather all information." (2)

The term "Library 2.0" was coined by Michael Casey on his blog LibraryCrunch as a direct spin-off of the terms Business 2.0 and Web 2.0. Casey suggested that libraries, especially public libraries, are at a crossroad where many elements of Web 2.0 have applicable value within the library community, both in technology-driven services and in non-technology based services. In particular, he described the need for libraries to adopt a strategy for constant change while promoting a participatory role for library users. (3)

Michael Casey has defined Library 2.0 as "Library 2.0 is all about library users -- keeping those we have while actively seeking those who do not currently use our services. It's about embracing those ideas and technologies that can assist libraries in delivering services to these groups, and it's about participation -- involving users in service creation

and evaluation. Library 2.0 is an operating model that allows libraries to respond rapidly to market needs. This does not mean that we abandon our current users or our mission. It is a philosophy of rapid change, flexible organizational structures, new Web 2.0 tools and user participation that will put the library in a much stronger position, ready to efficiently and effectively meet the needs of a larger user population". (4)

Essential Elements of Library 2.0

Library 2.0 theoretically is an advance implementation of facilities of information technology and it can be easily understood by its essential elements. Jack M Maness points out that Library 2.0 contains these essential elements: -

- It is user-centered.
- It provides a multi-media experience.
- It is socially rich.
- It is communally innovative.
- It is efficient. (5)

Principles of Library 2.0

Like Paul, Stephens also developed principles of Library 2.0, these principles specify that library 2.0 is anticipated. The future belongs to Library 2.0 and will certainly replace traditional libraries. The principles of Library 2.0 developed by Stephens are:-

- The library is everywhere.
- The library has no barriers.
- The library invites participation.
- The library uses flexible, best-of-breed systems.
- The library encourages the heart.
- The library is human.
- The library recognizes that its users are human too. (6)

Tools of Library 2.0

Meredith Farkas has illustrated the tools of Library 2.0 by defining it, he states that "The idea of Library 2.0 represents a significant paradigm shift in the way we view library services. It's about a seamless user experience, where usability, interoperability, and flexibility of library systems is key. It's about the library being more present in the community through programming, community building (both online and physical), and outreach via technology (IM, screencasting, blogs, wikis, etc.). It's about allowing user participation through writing reviews and tagging in the catalog and making their voice heard through blogs and wikis. It's about making the library more transparent through its Web

presence and its physical design. We need to make the library human, ubiquitous, and user-centered. This involves a change in our systems, our Web presence, and our very attitudes. It will take a lot of work for a library to be completely 2.0, but the idea should inform every decision made at the library". (7)

It is evident from the definition above that Web 2.0 tools are also applicable in library 2.0. In other words library 2.0 is an application of Web 2.0 technologies. These tools are:-

1. Blogs
2. Tagging and social bookmarking: such as with de.licio.us.
3. Wikis
4. Social Networking: sites such as Care 2, MySpace and LinkedIn
5. RSS (Real Simple Syndication)
6. Videocasting/ Vodcasting through sites such as YouTube
7. Podcasting-online "radio" shows that can be downloaded onto a computer or into an mp3 player or i-Pod.
8. Screencasting--Recording on-screen action to create tutorials, provide site guides, etc.
9. Photo-sharing through sites such as Flickr.
10. Instant messaging
11. Mash-ups like Frappr and Google Maps that combine several databases to create a new way of looking at information.
12. Internet Phone services, known as VOIP, such as Skype.
13. Productivity Tools--Web 2.0 is fabulous for boosting your personal and professional productivity.
14. Open-source software tools such as Moodle and SugarCRM
15. Office 2.0--Increasingly you can use free and low-cost Web 2.0 tools to create an entire online office.
    a. Office 2.0 Database
    b. Web-based (hosted) applications such as:-
        - Basecamp for project management
        - Google Docs & Spreadsheet for online document collaboration,
        - Wild Apricot for non-profit websites and administration
        - RegOnline for online registrations,
        - eTribio Suite for online fundraising.(8)

Information Literacy 2.0

Information literacy is all about lifelong learning and it makes a person self dependent in the ICT environment or in Web 2.0 and Library 2.0. It is a vital element for creativity and innovation, and a path of sound learning that makes different formats, packaging, transferring and ways of delivery information understandable. CILIP defines "information literacy" as "Information literacy is knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner." (9) And as per SCONUL Seven Pillars of information literacy, "Information literacy comprises of: -

- Recognizing need for information
- Distinguishing sources and access
- Constructing search strategies
- Locating and accessing
- Comparing & evaluating
- Organizing, applying and communicating
- Synthesizing and adding new knowledge" (10)

Information literacy necessitates the acquisition of three most important skills i.e. basic information technology skills, information resource skills, and critical thinking skills. Library and information professionals should be acquainted with today's environment, need of users, and how to fulfill them? Total scenario has changed and it is not the same as when our concepts of information literacy were formed. Web 2.0 and Library 2.0 has created a divide because earlier we were providing information in offline mode, but, Web 2.0 uses online applications, interactions, and devices. Web 2.0 is about the more human aspects of interactivity. It's about conversations, interpersonal networking, personalization, and individualism. The emerging modern user needs the experience of the Web, and not just content, to learn and succeed. Web 2.0 is ultimately about a social phenomenon—not just about networked social experiences but about the distribution and creation of Web content itself, characterized by open communication, decentralization of authority, freedom to share and reuse, and the market as a conversation.(11)

The preceding information literacy i.e. Information Literacy 1.0 is wholly library-centered and related with handling of information on offline mode. Library and Information Professionals have to identify instructional objectives based solely on what patrons need to know, and all instruction is provided by librarians is not related to a particular patron, it is a general application. The scope of information literacy in Library 1.0 environment cover Information Literacy, Computer Literacy, technology Literacy, Media Literacy, Visual Literacy, Health Literacy, and Business Literacy. (12)

Web 2.0 and Library 2.0 go beyond the scope mentioned of Library 1.0, it is providing new options for connections and communication in network environment. Library 2.0 encourages users to take active participation and interact with the library in internet environment. In Information Literacy 2.0 instruction is to be integrated across the curriculum. It must meet goals using an online course environment, a Web-based learning object, an interactive tutorial and also instructions for the users on how to use the tools of Web 2.0.

Suggestions

It is essential that as per the requirements of Library 2.0, new information literacy initiatives should be developed and implemented in the online environment, because Library 2.0 is online based. It goes beyond the email, providing new options for connections and communication.

Peter Godwin has clearly stated the Web 2.0 challenges for information literacy, and pointed out that tools of Web 2.0 technology can even be taken as tool for Information Literacy 2.0.(13)

He further states the task of librarians in Library 2.0 environment i.e. they can play a key role in creating information literate citizens, we are ideally placed to investigate and use Web 2.0 tools to encourage reflective learning, and we have a whole new set of tools to enliven our delivery. (14)

Systematic modules can be developed for information literacy 2.0 and it will give easy solutions for problems created by the tools of Library 2.0. Specific module will cover each tool of Library 2.0. The following modular approach is appropriate: -

"Module One – Introduction to Library 2.0, Blogs.

- What is Library 2.0?
- Creating a Gmail account.
- Creating a blog.

Module Two – Photos, Flickr.

- Uploading digital photos.
- Using Paint to resize, edit photos.
- Uploading and creating photo albums in Flickr.

Module Three – "Software as a Service".

- What is "SaaS"?
- Library Elf.
- Library Toolbar.
- LibraryThing.

Module Four – HTML.

- Basic HTML tags.

- Adding some HTML to your blog.

Module Five – IM.

- IM and reference.
- Meebo widget.
- Monitoring chat.
- Meebo group chat.

Module Six – YouTube and Podcasts.

- Searching for video clips and podcasts.
- Creating a podcast.

Module Seven – Wikis.

- The difference between wikis and blogs.
- Editing a wiki.

Module Eight – Collaborative Software.

- Things like Google Docs

Module Nine – Wrap-up.

- So where do we go from here?" (15)

For enhancing the capabilities of information literacy initiatives following suggestions can be made:-

1. A proper programme should be made to make the users aware about issues of social network like trust, risk, copyright, liability, and privacy, which are important to understand how the Web works. This might encourage further collaboration and experiments in Information Literacy.
2. Instead of being passive consumers of information, more and more internet users are becoming active participants. With an increasing number of people reading, writing, and commenting on blogs, the way we use the web is shifting in a fundamental way. Librarians must know - what is "blog information literacy"? We must teach users how to post their opinions, theory, comments and criticism and also teach them to recognize the authenticity of blog sites. Simultaneously educate users about best sources for searching blogs and how to evaluate a blog.
3. Social bookmarking is an significant tool of Library 2.0. It is a practice of saving bookmarks to a public Web site and 'tagging' them with keywords. In social bookmarking visitors of sites can search resources by keywords or tags. The library may start a course on what is a tag, how to tag, and remove tags.
4. RSS stand for Rich Site Summary or Real Simple Syndication. It allows users (after subscribing) to receive any new content added by a website. Library can support this type of service on their own site, and can invite users participation by customizing RSS to locate contents which are appropriate for their needs. (16)

5. Wiki means "***quick***" in Hawaiian. This type of website allows collaborative creating, editing and storage of content by a group of users. We must teach our patrons how to use Wikis as a legitimate starting point as reference source, how we can understand its strengths and weaknesses and how we can edit and contribute our view in wiki.
6. Podcasts is another fashionable tool of Web 2.0. Podcasts is a type of broadcasting which allows individuals to record, publish, find, subscribe and listen over the internet using a portable player. It also allows users to download audio files available online. In this area we can teach our users what is podcasts, how it works, how to record, publish, find, subscribe and listen, software requirements, saving and using audio files.(17)
7. Instant messaging is the 3rd most popular method of communication for students according to an OCLC Perception of Libraries & Information Resources Report in 2005. This service could be adopted by us to give better services to users, because it is fast and can be used for reference, information services, and for other services. It should be taught to users in proper manner.(18)
8. Mashups are websites or web applications which use content from more than one source to create a completely new service. Such contents are often developed by using various API (Application Programme Interfaces), web feeds and JavaScript. These mashups require little technical knowledge. Mashups are rather difficult then the other tools of Web 2.0, and they allow users to interfere to your control system, so at least we can teach our users to how it works , and what technical skill is required, how the contents are created in mashups (19).

Epilogue

Latest developments in tools of 2.0 are emerging all the time. Google Co-op has announced to make a do-it-yourself search engine. The Citizendium pilot project, which is an experimental wiki, will start a mirror of Wikipedia. Google recently acquired YouTube, this fast-growing site for uploading video could be another area for Information Literacy use in due course. As a result, librarians have to keep abreast. We have to make ourselves Web 2.0 savvy, using new tools, promoting new services, and teaching our students. We must encourage them to use tools like blogs, wikis, mashups, podcasts, tagging, etc. In the information age Information Literacy becomes even more critical then ever.

The Web has changed our habits, expectations, and norms, now become a part of our culture."(20) Today's information literacy is critical

thinking, knowledge construction, way of thinking about information and reflection are the processes that surround information. It is also a "'habit of mind' that seeks ongoing improvement and self-discipline in inquiry, research, and integration of knowledge."(21)

To approach 2.0, information literacy instruction is to be integrated across the curriculum. The library serves as an instructional center with the commitment to prepare students with the information skills needed for success in the 21st century. Librarians, information technologists, faculty, and administrators are coming together realizing that the new culture of education—influenced by information literacy initiatives, Web 2.0, and Library 2.0—can impart much more than the skills students need to get them through their academic careers. Information literacy is important, personally and professionally, throughout life. (22)

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Library 2.0: A Step Ahead in Library Services

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ABSTRACT

The information environment within which libraries find themselves is changing, probably faster than ever before. These changes offer great opportunities for progressive libraries to reach out far beyond the boundaries of their buildings and web sites, and to engage with an increasingly literate body of information consumers. This has given the libraries a new shape and as a result of this Library 2.0 concept is emerging in library services. This paper gives an over view of the library 2.0 concept and its utility in library service.

Keywords: Library Services, Library 2.0, Web 2.0 and Internet.

Introduction

The term Library 2.0 is said to make its debut at a conference on Internet Librarian 2005 in October, 2005, when Michael Stephens of Saint Joseph County Public Library addressed the idea in relation to the typical library website. Later, Michael Casey defined the term on his blog Library Crunch as a direct spin-off of the terms Business 2.0 and Web 2.0. He suggested that libraries, especially public libraries, are at a crossroads where many of the elements of Web 2.0 have applicable value within the library community, both in technology-driven services and in non-technology based services. In particular, he described the need for libraries to adopt a strategy for constant change while promoting a participatory role for library users.

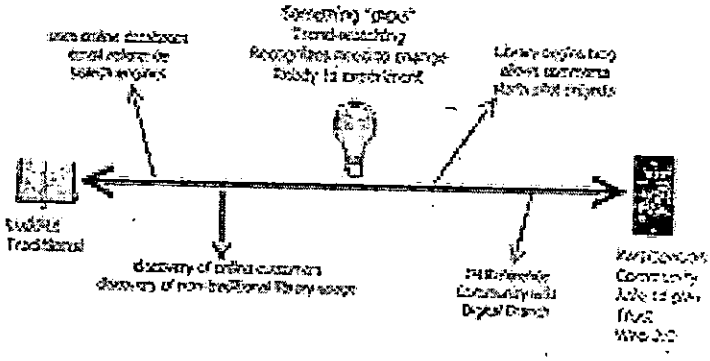


Fig.1. Library 2.0 Spectrum

Library 2.0 is a concept of a very different library service that geared towards the needs and expectations of today's library users. In this vision, the library makes information available wherever and whenever the user requires it, and seeks to ensure that barriers to use and reuse are removed. It can be a scary term for librarians who are not really into technology. In fact, it is not primarily about machines and software, rather it is about using the best tools and ideas to provide the best possible service to the users.

Simply saying, the Library 2.0 makes your virtual and physical library's space more interactive, collaborative, and driven by community needs. It is, perhaps above all else, the idea of constant change. It is not only constant library change, but the recognition that our communities are constantly changing and that our services to them must change proportionately.

The Concept and its Development

The Internet, and its most common manifestation in the form of the World Wide Web, has made a profound contribution to modern life. There is seen an increases in web usage and today, more than 900 million users are using this tool as a means of accessing and finding information. Those of us who have seen the Internet evolve often find it difficult to remember life before, and those who have grown up with it accept it and integrate it into their lives without question. Web 2.0 is the label attached to these new capabilities of the next generation World Wide Web.

Web 2.0 offers a means by which data and services previously locked into individual web pages for reading by humans can be liberated and then reused, in ways sometimes referred to as 'mashing up' or 'mixing'.

Importantly, it also introduces the notion of a 'platform', meaning that others can build applications on pre-existing foundations and thus benefit from economic scale without reinvention.

According to O'Reilly Web 2.0 is "the network platform, spanning all connected devices and Web 2.0 applications are those that make the most of the intrinsic advantages of that platform: delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users, while providing their own data and services in a form that allows remixing by others, creating network effects through an *architecture of participation*, and going beyond the page metaphor of Web 1.0 to deliver rich user experiences."

Leading sites such as Google, Amazon, eBay with the emergence of Web as Web 2.0 software platforms, now provide their functions via such components (Web Services) which other computers can discover and consume to create new applications. It is increasingly 'available', and broadband is replacing 'dial up' giving us an 'always on' experience. This ubiquity is increasingly embracing multiple device types, including mobile phones, game consoles, and televisions. New solutions have been designed to meet the demands of today's users, who increasingly expect comprehensiveness and speed but also simplicity and elegance. Consequently, organizations can position themselves as having the "Earth's biggest selection", or profess a mission "to organize the world's information and make it universally accessible and useful", or capitalize upon the growing number of digital cameras owned by people with broadband connections and geographically dispersed friends and family.

To avoid disintermediation, libraries are required to compete for attention, partly through their own web presence but also by innovative interaction with other web applications and services. The increasingly comprehensive nature of search engines creates an impression and expectation that anything is discoverable online. The gatekeepers of content do themselves few favours by hiding their existence from these search engines, aggregators and developers. This all has contributed to the emergence of Library 2.0 service.

So, Web 2.0 is use to describe the emerging Internet technologies, and the birth of Library 2.0 is the use of these new web applications within the library system. Traditionally, we were locked our resources behind passwords and barcodes, keeping things in catalogues and databases so no one could access except the coming to the sites to do manual searches. But here we always solicited feedback from our users. Thus, Library 2.0 has emerged as using new web technologies to connect and establish

relationship with patrons. The basic idea of Library 2.0 is to transform library services by making them more personalized and more web-based along web 2.0 lines.

3. Definitions of Library 2.0

Library 2.0 does not have a concise definition, but there are several definitions available explaining the term Library 2.0. Some of them are as under:

- Library 2.0 is a model for library service that reflects a transition within the library world in the way that services are delivered to library users. This redirection will be especially evident in electronic offerings such as OPAC configuration, online library services, and an increased flow of information from the user back to the library. The concept of Library 2.0 borrows from that of Web 2.0, and follows some of the same philosophies underpinning that concept. Proponents of this concept expect that ultimately the Library 2.0 model for service will replace outdated, one-directional service offerings that have characterized libraries for centuries.
- Library 2.0 sees the reality of our current user-base and says, "not good enough, we can reach more people. It seeks to do this through a three-part approach—reaching out to new users, inviting customer participation, and relying on constant change. Much of this is made possible through new technologies, but the services will only be partially tech-based.
- Library 2.0 is a service philosophy built upon three things; a willingness to change and try new things; a willingness to constantly re-evaluate our service offerings; and finally, a willingness to look outside our own world for solutions, be they technology-driven or not.
- Library 2.0 is not about technology. It seeks to harvest good ideas from outside and use them to deliver improved and new services, often times in an effort to reach a new target population. Library 2.0 is, at its core, and is a way of thinking and the way of operating.
- Library 2.0 is a framework for integrating change into all levels of library operations. It is in our effort to reach this new level of service that we will utilize these new, often times Web 2.0, technologies.

Thus, the idea of Library 2.0 represents a significant paradigm shift in the way we view library services. It is about a seamless user experience, where usability, interoperability, and flexibility of library systems are keys. It is about the library being more present in the community through programming, community building (both online and physical), and

outreach via technology (IM, screencasting, blogs, wikis, etc.). It is about allowing user participation through writing reviews and tagging in the catalogue and making their voice heard through blogs and wikis. It is about making the library more transparent through its Web presence and its physical design. We need to make the library human, ubiquitous, and user-centered. This involves a change in our systems, our Web presence, and our very attitudes. It will take a lot of work for a library to be completely 2.0, but the idea informs every decision made at the library. The examples are of where to start include blogs, gaming nights for teens, and collaborative photo sites. The basic drive is to get people back into the library by making the library relevant to what they want and need in their daily lives...to make the library a destination and not an afterthought.

Principles, Models and Services of Library 2.0

As the concept of Library 2.0 borrows from that of Business 2.0 and Web 2.0, it follows some of the same underlying philosophies. This includes online services such as the use of OPAC systems and an increased flow of information from the user back to the library. In Library 2.0 environment, the library services are constantly :

- updated and reevaluated to best serve library users. Library 2.0 also attempts to harness the library user in the design and implementation of library services by encouraging feedback and participation.
- called for libraries to encourage user participation and feedback in the development and maintaining of library services. The active and empowered library user is a significant component of Library 2.0. With information and ideas flowing in both directions – from the library to the user and from the user to the library – library services have the ability to evolve and improve on a constant and rapid basis. The user is participant, co-creator, builder and consultant – whether the product is virtual or physical.
- provided rich content is to establish digital communities where patrons can get involved with the library web site. For example, a small-town library might establish a wiki where users contribute to the local history of the town. Patrons can get involved with the library blog by providing content about their library experiences. Blogs, wikis, flickrs, podcasts, and vodcasts are just some of the web 2.0 technologies that libraries might use to involve patrons with the library web site.

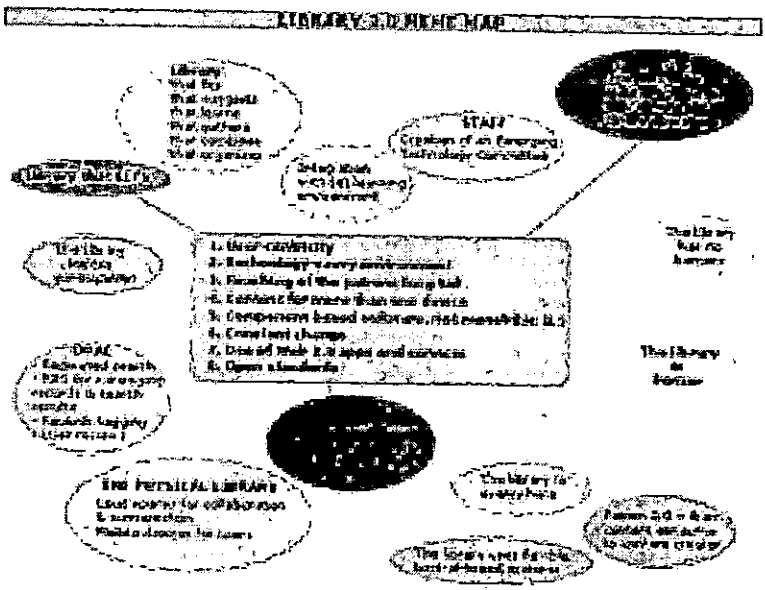


Fig.2. *Library 2.0 Meme Map by Bonaria Biancu*

As far as the key principles of Library 2.0 are concerned, they are not just about access to books and information. They are about innovation, about people, and about community building, enabled through the participation that social computing brings. They achieve this through trust and encouraging users to share ideas through writing, rating, and commenting against everything in the library's collection.

Biancu (cited in Wikipedia) has summarized following principles for Library 2.0 services:

- Browser + Web 2.0 Applications + Connectivity = Full-featured OPAC.
- Harness the library user in both design and implementation of services.
- Library users should be able to craft and modify library provided services.
- Companies wanting to do business with public or academic libraries should not be creating proprietary software; Library 2.0 is not a closed concept.
- Constant change is replacing the older model of upgrade cycles.

- Harvest and integrate ideas and products from peripheral fields into library service models.
- Continue to examine and improve services and be willing to replace them at any time with newer and better services.
- Rigidity breeds failure.
- Harness The Long Tail.

Where as, Paul had propounded following principles of Library 2.0 services in terms of Web 2.0 as under:

- Web 2.0 presages a freeing of data, allowing it to be exposed, discovered and manipulated in a variety of ways distinct from the purpose of the application originally used to gain access.
- Web 2.0 permits the building of virtual applications, drawing data and functionality from a number of different sources as appropriate. These applications tend to be small, they tend to be relatively rapid to deploy, and they bring power that was previously the preserve of corporations within the reach of suitably motivated individuals.
- Web 2.0 is participative. The traditional Web has tended to be somewhat one-sided, with a flow of content from provider to viewer. Web 2.0 applications have been quick to spot the value of user-generated content. It is useful to facilitate participation in the way a messaging service might, but it is a lot more valuable to fold the output of that participation back into the application and make it available to all of the applications users.
- Web 2.0 applications work for the user, and are able to locate and assemble content that meets *our* needs as users, rather than forcing us to conform to the paths laid out for us by content owners or their intermediaries.
- Web 2.0 applications are modular, with developers and users able to pick and choose from a set of interoperating components in order to build something that meets their needs.
- Web 2.0 is about sharing of code, content, ideas. That does not mean there is not money to be made. But there is new business models need to be found whereby we collaborate on the platforms and make money by adding value over and above that which others and we have built together.
- Web 2.0 is about communication and facilitating community where the people communicate. Web facilitated that to a degree,

but presented a barrier that hindered the back-and-forth of true communication.

- Web 2.0 is about remix. Here, we have to jump from one area of the Web to another, struggling with different interfaces, ignoring endless advertisements, and wading through uninteresting content on a site in order to locate the service, document, or snippet that meets our needs. Increasingly, we can unambiguously reference and call upon the service, document or snippet that we require, incorporating it into something new that is both ours and the original contributors.
- Web 2.0 is smart. The applications will be able to use knowledge of us, where we have been and what we are doing to deliver services that meet our needs. There is real potential to do some compelling things with it, provided that appropriate safeguards are developed and implemented.
- Web 2.0 opens up the long tail making it increasingly cost-effective to service the interests of large numbers of relatively small groups of individuals, and to enable them to benefit from key pieces of the platform while fulfilling their own needs.
- Web 2.0 is built upon Trust, whether that be trust placed in individuals, in assertions, or in the uses and reuses of data.

As stated above Library 2.0 is based on Web 2.0, it follows the same pattern in more or less similar ways. Hence, Library 2.0 is about the innovation, about people, and about community building, enabled through the participation that social computing brings. They achieve this through trust and encouraging users to share ideas through writing, rating, and commenting against everything in the library's collection.

Examples of Library 2.0 Services

Below are given some examples of a Library 2.0 taken from Paul Miller (2006). Here Library 2.0 approaches exist, and innovators around the world continue to demonstrate that which might be possible.

Remixing Library Services : While we talk about the remixing of library services, the services are to be rendered in following ways.

- We may anticipate for libraries a shift from the delivery of a library service just within the library building, or simply from a library's own web site and continuity to offer services to those who come to us. We need to reach beyond the boundaries of the library space, and begin pushing services out to people in the places where they are already interacting.

- New technologies and new attitudes make it eminently feasible to break the OPAC down into a set of functional components and to make each of those components available for inclusion in almost any page on the web, whether library-focused or not. The OPAC itself is enriched by this approach, and the services formerly available only via the OPAC become far more widely available, and consequently far more valuable.
- Another way may be the liberation of functions and data from closed systems enables users to use their library content and services in other contexts. Catalogue searching or loans information should be available to a student within their course management system or virtual learning environment may from such example. Information on fines should be available within a financial application and perhaps both of these should be visible from an institutional portal.
- It is also important to ensure that information about the resources available from the library is disseminated as widely as possible, and made available in a manner that enables integration with other applications beyond the library's control.

Moving the Library Boundaries: We are seeing a mover towards collaborative access agreements, hence any individual may become the member of a single, local, library, probably associated with the local government area in which they happen to live in modern world. He may work close to other libraries, or may live in an area in which there are other libraries within reach, but he will tend not to have access to the services offered by these libraries. Here a library should be able to tell a user that it is unable to fulfill a request for an item immediately as the desired item is on loan or it will have to be borrowed from another library or from a third party source? There is a also need to develop a model in which an increasingly mobile population is able to view but not use the services of libraries other than that offered by their home city, county, or equivalent make sense any more.

Easily Discoverable Information: The libraries have to seek to enable discovery, locating, requesting, delivery and use of the resources in its care along with exposing basic information about the institution and its services. The physical library holdings, for example, might usefully become far more visible than they are now. In this regard, OCLC has made important progress in this area, and their OpenWorldCat initiative allows searchers to find books held by participating libraries in popular search engines such as Google and Yahoo!

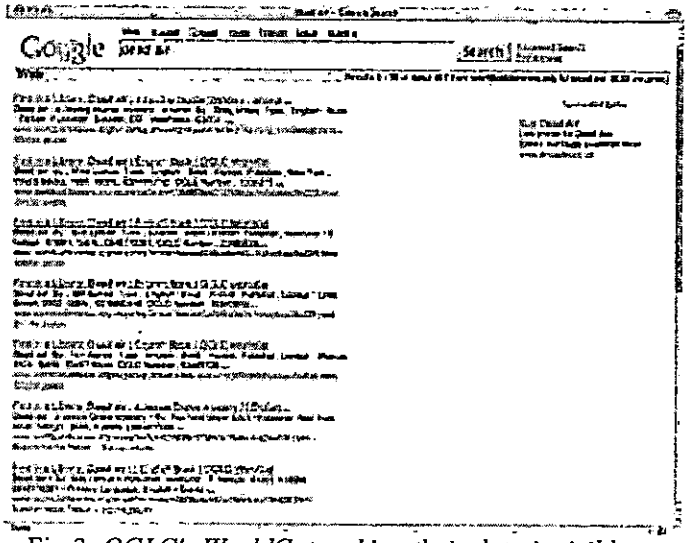


Fig.3. *OCLC's WorldCat making their data it visible to search engines such as Google*

Libraries need Participations: Library 2.0 facilitates and encourages a culture of participation, drawing upon the perspectives and contributions of library staff, technology partners and the wider community. This need harnessing of participation so that libraries can benefit from increasingly rich collaborative cataloguing efforts, such as including contributions from partner libraries as well as adding rich enhancements, such as book jackets or movie files, to records from publishers and others. Blogs, wikis and RSS are the best examples of Web 2.0 services. A reader of a blog or a wiki is provided with tools to add a comment or even, in the case of the wiki, to edit the content. This is what we call the read/write web.

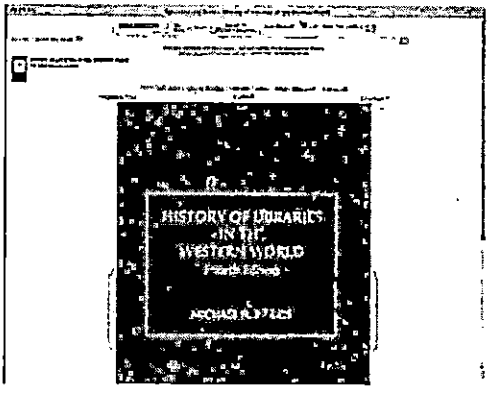


Fig.4. *Library 2.0 encouraging and enabling a library's community of users to participate & contributing their views on resources and new ones that they wish to access*

Conclusion

Thus, we see that Library 2.0 comprises of a combination of tools and attitudes which are excellent ideas and not new to librarianship, a few business- and tool-focused attitudes which will not serve all users and user communities, and incorrectly places libraries as the appropriate source for all users to gather all information. The proponents of Library 2.0 have been arguing that while individual pieces of Library 2.0 may not be entirely new, the convergence of these service goals and ideas with many new Web 2.0 technologies has led to a new generation of library service.

But some librarians may also perceive a threat from these services providing, as they do, a more enticing user experience than the traditional library OPAC. They can provide all the resources the user requires plus super slick fulfillment mechanisms. However, in reality the growth of participation and the ability of people to find, and be enriched by, a wealth of experiences is to be welcomed. There is no reason why some of these ideas cannot be adopted by those libraries and librarians that are prepared to engage with these trends, and to deliver upon their historical core values in innovative new ways.

We may see all current generation web sites are available for use predominantly in human readable form, but the real power of the web will be unleashed when new applications can be built from functions and data assembled at the point of need from an underlying platform of software components. The information needs of future patrons are to think of public libraries as being not only information resources, but sources of entertainment. Think of feature films, manga, DVDs, audio CDs, graphic novels, and popular fiction. Why not extend this idea of entertainment services to the library web site, and offer web services that are not strictly informational, but also entertaining? Expecting the library to create entertaining podcasts or vodcasts might be pushing it too far, but what if the adult services librarian collected podcasts links for the library web site, or perhaps the teen services web site can host links to teencreated podcasts on the net?

Finally, we conclude that Library 2.0 is a more intensive way of sharing all the resources that the library already offers. Library 2.0 is a new sense of ownership over library services and a new set of relationships with both vendors and others in the library community. Library 2.0 is an attempt to bring libraries' electronic services up to par with what people expect in a Web 2.0 environment. Library 2.0 means libraries that fill your emotional needs. And with Library 2.0, a library will continue to develop and deploy the rich descriptive standards of the domain, whilst

embracing more participative approaches that encourage interaction with and the formation of communities of interest.

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Library 2.0: An Overview

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ABSTRACT

Purpose of this paper: Library 2.0 – or L2 as it is now more commonly addressed as – aims to take the information to the people by bringing the library service to the Internet and getting the users more involved by encouraging feedback participation. The author seeks to present seeks to present an overview of Library 2.0 and further how this 2.0 has successfully helpful in defining the libraries. Before that a background of 1.0 is provided and forerunner of 2.0.

Design/methodology/approach: An overview of Web 2.0 including definitions, technologies involved and sites currently advocated as examples of Web 2.0. Findings – The major difference between Library 1.0 and L2 is that Library 1.0 only allows for a one-way flow of information while L2 is a read-write library that gives library users the power to decide the service that they get. L2 reinforces the role libraries play in the community by building on today's best and continually improving the service. L2 can be summarized as being user-driven and aiming to save each library user time in retrieving information. As an approach L2 has succeeded in explaining the activities of library.

Findings: Library 1.0 and L2 and the difference between is that Library 1.0 only allows for a one-way flow of information while L2 is a read-write library that gives library users the power to decide the service that they get. L2 reinforces the role libraries play in the community by building on today's best and continually improving the service. L2 can be summarized as being user-driven and aiming to save each library user time in retrieving information. So the anthropocentric view of Web is proved through L2.

Practical implications (if applicable): The practicality is playing the advancement of IT and Internet and succeeding the in implementing the plan. This is to be are of the latest development and how the tradition is being replaced by new formulaic world. This could be applicable to any even or activities and library is one of them. Librarians don't lag behind the It advancement.

What is original/value of paper? : Traditionally speaking libraries have been around for centuries and are considered places in which books, journals, CDs, etc. are kept for reference or for borrowing by the public. The term L2 was believed to have been first made by

Michael Casey in his blog LibraryCrunch. Chad and Paul Miller describe Library 2.0 (L2) as a concept, very different from the service one knows today, that operates according to the expectations of today's users. They state that with this concept the library will make information available wherever and whenever the user requires it. One point to note here is that this concept is not about replacing the 1.0 technology already being used but rather about adding additional functionality. The originality lies in showing the difference and how these two have evolved and invites further change and development.

Introduction

Libraries were never the primary source of knowledge but they have always played a major role where people of all ages, gender and religion could go and engage with the various forms of resources. This is proven by the fact that 96 percent (Chad and Miller, 2005) of people of been to a library at some point in their lives and 89 percent of the UK population trust libraries. Library 2.0 (L2) wants this to remain but it has new aims that it hopes will work. The term L2 was believed to be first made by Micheal Casey in his blog LibraryCrunch. (Chad and Miller, 2005) describe Library 2.0 (L2) as a concept, very different from the service we know today, that operates according to the expectations of today's users. They state that with this concept the library will make information available wherever and whenever the user requires it. One point to note here is that this concept is not about replacing the traditional technology adopted by libraries already in use but rather about adding additional functionality. Most Internet users will have come across the terms "blog", "wiki", "podcast", "RSS Feed", and "CSS and XHTML Validated". These are all associated with the umbrella term of "Web 2.0", although the actual definition of this term is still hotly debated. Web 2.0 offers a means by which data and services previously locked into individual web sites for reading by humans can be liberated and then reused, in ways sometimes referred to as mashing up. Importantly, it also introduces the notion of a platform, meaning that others can build applications on pre-existing foundations and thus benefit from economic scale without reinvention.

Influencing the approaches typified by Web 2.0's principles and technology offers libraries many opportunities to better serve their existing audiences and to reach out beyond the walls of the institution to reach potential beneficiaries where they happen to be, and in association with the task that they happen to be undertaking. This new approach makes it possible for searchers to be presented with choices to view online, borrow locally, request from afar, buy or sell as appropriate to their needs and circumstance. However, with the rise of Google, Amazon and more, there is a fear that many users will bypass processes and institutions that they perceive to be slow and irrelevant in favour of a

more direct approach to alternative services. Libraries should be seizing every opportunity to challenge these perceptions, and to push their genuinely valuable content and expertise out to places where people might stand to benefit from them; places where a user would rarely consider drawing upon a library for support (Miller, 2005). One of the aims of L2 is to encourage feedback and participation from the community. This can be done via blogs. A blog is like an on-line diary that usually contains entries of what is happening in a person's life as well as topics that they find interesting (Miller, 2006a). L2 aims to be easy to use, attractable to new users and be constantly re-evaluated and updated. L2 has provided a framework within which we are able to re-evaluate virtually every aspect of classical librarianship with the end goal of usability and findability in mind (Blyberg, 2006). L2 is built upon the principles of and is a direct result of the term Web 2.0. Next we discuss some Web 2.0 concepts in more detail before delving into Library 2.0 in more depth.

About Web 2.0

"Web 2.0" was first used by O'Reilly Media as the name of a series of web-development conferences (www.web2con.com/) that started in 2004. Sub-categories of what Web 2.0 encapsulates include usability, economy, participation, convergence, design, standardization and remixability. These categories are further broken down with sub-categories such as blogs, audio, video, RSS, open APIs, wikis, social software and focus on simplicity. This paper presents an overview of Web 2.0 including definitions, technologies involved and sites currently advocated as examples of web 2.0. Tim O'Reilly defines Web 2.0 as: Web 2.0 is the network as platform, spanning all connected devices; Web 2.0 applications are those that make the most of the intrinsic advantages of that platform: delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users, while providing their own data and services in a form that allows remixing by others, creating network effects through an "architecture of participation"; and going beyond the page metaphor of Web 1.0 to deliver rich user experiences (http://radar.oreilly.com/archives/2005/10/web_20_compact_definition.html).

A general comparison between Web 2.0 and Web 1.0 is shown in Table I.

There are those (Shaw, 2005) who debate the validity of the term "Web 2.0." claiming that Web 2.0 does not exist and that the term is merely a marketing slogan that is used to convince investors and the media that the companies are "creating something fundamentally new, rather than

continuing to develop and use well-established technologies". Whatever the actual definition, the most widely accepted idea of what makes a web site Web 2.0 is the following set of criteria:

(1) User-generated content, as opposed to content posted solely by the site author(s). One example of this would be the recently developed www.newsvine.com, which allows users to post their own news articles and maintain their own news columns.

(2) Treats users as if they are co-developers of the site: The more people that use the service, the better it becomes. User contribution, by means of reviews, comments, etc. is encouraged.

(3) Highly customisable content and interface. For example, allowing users to put their own news feeds on their homepage as in www.netvibes.com, rather than serving content that the user has little to no control over, as in the home page of NDTV, AAJ TAK, BBC or NBC.

(4) The core application of the web site runs through the browser and web server, rather than on a desktop platform.

(5) The incorporation of popular internet trends such as "blogging", "tagging", "podcasting", "wikis", the sharing of media and content and the use of web standards such as validated XHTML and Cascading Style Sheets (CSS).

(6) Integration of emerging web technologies such as Asynchronous JavaScript and XML (AJAX), Really Simple Syndication (RSS) and Application Programming Interfaces (APIs).

The use of hyperlinking on Web pages underpins the 2.0 Web. The high level of connectability between content on the web has encouraged sustained growth as more and more users add new content. Users can then link to newly discovered sites in a way similar to dendrites forming relationships in the human brain. The success of Google is a result of 2.0 technologies. Google have created a business from linking users of one site to the information or service provided by another. Google has none of the trappings of software provider's products. These trappings are the purchase cost of the software, limited applications to a particular platform and the product life span where the next generation would involve the consumer having to purchase an upgrade or a whole new software package. There are no direct costs to the users of Google; all the business costs are met by advertising and the placing of sponsored links in prominent positions. Continuous upgrades are of very little significance to the end user, as they have no direct input either with time or resources. The key to Google's success is the use of PageRank, which

used web link structure as opposed to the page content to rank search results. This open source operating systems would have been impossible to run with Web 1.0 technologies supporting the argument that Web 2.0 is a platform where the user has control of the information provided (McCormack, 2002). While it is clear that Web 2.0 has no clear and concise definition, one could argue that the term is useful in that it allows non-technical users to define the complicated set of concepts and technologies that are constantly being developed for use in new web sites, and it allows companies to promote their web sites to the masses without having to explain the sophisticated array of technologies used to create the application. Web 2.0 is more interactive than its predecessor. Web pages are now described as "User dependant web portals". These portals require user input and feedback for success. eBay is an online business that depends on transactions conducted by it members to sustain growth. In a way similar to the web, eBay is a supplier of content that supports user activities with continued market domination almost guaranteed due to its sheer scale of operation. The major high street retailers are now flexing their collective business muscle on the web. Tesco.com provides all the facilities of their physical store online enabling the customer to shop from home using JavaScript and secure Internet connections to facilitate transactions. Other business can now compete with the big retail companies even if they are based solely online. Ryan Air provides agent free bookings removing the middle man and more importantly for the consumer, agent fees from air travel. Web 2.0 applications have helped Ryan Air grow as a company at a time when the general air industry is in recession (MacManus, 2005).

A lot of the people involved in the development of Web 1.0 are today involved in the Web 2.0 industry, this bank of knowledge can only help guarantee the success of Web 2.0 applications. In Web 1.0 many companies which were involved in the original dot com era had moved on to join larger companies. This suggests that there is plenty of web experience in the mix. These people will have the knowledge of what works and what doesn't. But more importantly, why something does or does not work. Today's web sites are now dynamic rather than being static, web sites have become platforms for web applications for end users. With the use of development systems such as AJAX (Asynchronous JavaScript and XML), there are now many web-based applications, which imitate standard computer applications, for example word processing, spreadsheets and slide show presentations. These are applications that the general public is familiar with, making it easier for an end user to operate these applications. These new web applications are often much more complicated to design and create creating employment opportunities for it professionals. The way in which communities interact socially has changed with Web 2.0 innovations. No longer do people

depend on written letters in the post or telephone calls to communicate. Web 2.0 has helped to create online social networks for public use; some of them provide social software that members can use to connect with each other.

	Web 1.0	Web 2.0
Mode of usage	Read	Write and contribute
Unit of content	Page	Record
How content is viewed	Web browser	Browser, RSS readers, Mobile devices, etc.
Creation of content	By web site authors	By everyone

Table I. Difference between Web 1.0 and Web 2.0

Microsoft's MSN and Bebo.com are two of these online communities. Benefits to web 2.0 include the fact that it holds collective intelligence. This makes the work on it collaborative. Also, because everything is updated instantly, using RSS feeds, there is an instant gratification. Users have a sense of ownership over the web because it holds their work. This makes them much more passionate about using the web and updating it regularly, meaning everyone who reads the information on the web gets up to date information all the time. The early web was primarily for the reading of information by users, today on the web the user can still just read but they also now can contribute to a web site. Today's online tasks are more than surfing for information, they now include shopping, down and uploading, blogging and sharing files with web users both known and unknown to the user. There is no argument against the fact that there have been major developments in the way today's web is run or in the applications and expectations end users now have of the web. Even when all the previously discussed developments are considered there still is no direct evidence that Web 2.0 exists as an actual methodology or technology. It seems to be a phrase used to describe recent innovations in the natural development cycle, although some older technologies have been included under the Web 2.0 banner (MacManus, 2005)."

Library 2.0

Library 2.0 can be seen as a reaction from librarians to the increasingly library relevant developments in ICT (Web 2.0 and social software) and an environment that is saturated with information available through more

easily accessible channels. The reaction comes in the form of increased openness and trust towards library users, both online and in the library, and in the development of new communication channels and services that are more in tune with social developments (Brevik, 2006). Talis for instance is a UK based library automation service, which is taking a leadership role in L2 they argue however that for L2 to work, it must not be a Talis only creation (Chad and Miller, 2005). L2 requires all relevant companies coming together and creating an application that can work for everybody. It shows the principles of Web 2.0 from which L2 was directly developed. All of these principles are needed to form an effective and efficient L2 and leads to the following Browser þ Web 2.0 applications þ connectivity ¼ full-featured

Browser+ Web 2.0 applications + connectivity= full- featured OPAC

The word browser' here refers to a web browser, which is an application that is used to access the World Wide Web (WWW). This along with Web 2.0 applications and connectivity will lead to a full-featured Online Public Access Catalogue (OPAC). OPAC is a computerised online catalogue used to hold the details of the resources held in a library. This database has replaced the card catalogue in libraries and allows library staff and the public to access it through the Internet at anytime and from anywhere. OPAC's form part of an integrated library system, which is a group of library systems working together to achieve the same goal. Adopting the Web 2.0 principles will allow libraries to better serve their customers as well as allowing for the opportunity to gain more customers. Using this service, users would be able to (Miller, 2006b) view online, borrow locally, request from afar and buy or sell as appropriate to their needs and circumstance. L2 is all about change and ultimately survival of the library. When looking back to what the first libraries were and comparing them with the library of today, there have been many changes, albeit, gradual ones. These changes have all been done to keep up with the changing needs and expectations of the world. As we are getting more and more reliant on technology and the Internet, L2 is just another method of keeping libraries attractable to the community. In order for libraries to survive they must be able to keep up with the way internet-based services such as Google provide access to information at a click of a button from any where at any time at the point of need. This would mean that users don't have to physically go to a library in order to gain the information that they require. This would then minimise the problem of limited opening hours (Chad and Miller, 2005). For L2 to work effectively and efficiently the entire community as a whole needs to have a willingness to change, a willingness to try new things, a willingness to constantly re-evaluate service offerings and a willingness to look outside our own world for solutions.

Library 2.0 in action Public librarians has been the most influential movers of L2 therefore, for it to work effectively and efficiently, L2 should be determined and formed by librarians and library users. Many of the services offered by libraries are not used by a majority of the population. It is difficult to reach this group with physical services as libraries are constrained by space and money and cannot carry every item. Many public libraries now try to offer a hit-driven collection plan, putting forth popular materials that many of their existing customers request. This is fine for some traditional customers, but the wider population might be better served if librarians consider "the long tail" (Casey, 2006). The long tail is the theory that customer buying trends and the economy are moving away from the small number of hit products widely available in offline stores and towards the huge number of one off and niche products that are only available on-line. The reason that it gets its name is because when a graph of sales against products sold is plotted, we can see that only a small number of products sell in large quantities "the hits" and there are a large number of products that only sell in small quantities "the misses". These misses are the one off and niche products that are not available in the high street due to the expense of shelf space and therefore form the long tail. The main reason that it has become possible for the long tail to become profitable is the fall in production and distribution costs through the Internet. Customers are now able to find products that are of special interest to them rather than the "one size fits all" products that are well marketed and available in most offline stores. In 1988 a book by a British mountain climber Joe Simpson – which did not do exceedingly well, was promoted by Amazon alongside a book written by John Krakauer, released a decade later, which was also about a mountain-climbing tragedy. Amazon recommends products of similar interests to a customer when they are purchasing from the web site, i.e. Other customers buying this product have also liked . . . It was this that led to the great success of Simpson's book. It went on to outsell Krakauer's 1998 book by 2-1 (Anderson, 2004). This was possible due to the public being able to leave positive feedback about the book – so that the consumer knew before they tried it how many other people had already found it interesting. This is not just true for online bookstores, the same happens in online music and media centres. The long tail is also about online retailers making products available to the public those high-street stores or cinemas cannot do due to limited demand for the products. (Anderson, 2004) highlights this fact by stating that the average movie theatre will not screen a film unless it can attract at least 1,500 people during a two-week run. This is basically the rent for a screen. Also, a typical record shop needs to sell at least two copies of a CD per year to make it worth carrying. This is equivalent to the rent for a half-inch of shelf space. This model also applies to DVD rental shops, videogame stores, booksellers, and newsstands. Addressing

the diverse long tail requires a combination of physical and virtual services, a move underway in many libraries, with efforts such as interlibrary loan (ILL) purchase-on-demand from online used-book retailers, home delivery of books to customers who otherwise never visit libraries, and by offering more electronic texts. Web 2.0 harnesses the collective intelligence of everyone who uses a product and in an online environment this takes the form of feedback, user reviews, and user-crafted social networks. Blogs and wikis are other ways to engage customers and push fresh content to users (Casey, 2006). The Ann Arbor District Library in Michigan is currently using the L2 functionality. Figure 2 shows the service blog page of the Ann Arbor District Library.

Blogs are an important part of L2. They enable the user to give their view of the service been provided and thereby encouraging feedback. Temple University Library (http://blog.library.temple.edu/liblog/archives/events/) uses a blog to provide a place for news, events, and discussion. Saint Joseph County Public Library (www.libraryforlife.org/) used open source wiki software to create a successful subject guide that facilitates customer feedback (Casey, 2006). Libraries such as Gwinnett County Public Library (GCPL) (www.gwinnettpl.org/) have embraced L2 by providing access to online databases, downloadable audio books and music, alongside instant messaging reference services. South Huntington Public Library (www.shpl.info/), NY created an iPod Shuffle loan program. Libraries such as Cecil County Public Library (Cecil County Public Library in Elkton) have expanded physical services by creating specific areas for teen and community activities, reflecting the public's desire for a civic space and exciting new programs (Casey, 2006). Promoters behind L2 wish to develop it in such a way so that library users can access it from sites such as Amazon, Yahoo, however, it is possible that a highly successful organization that makes its money from selling books would not want to see an advertised library service that allows users to borrow books for free. Finally, Harris (2006) sees school libraries as being different from public libraries in that they are carefully constructed information places with a specific focus on the curriculum of the different grades and classes they serve. To clarify the point, Harris states that: Public libraries tend to serve a broad variety of interests and academic libraries (who focus on wide topics with areas of great depth and a tradition of archiving past thoughts). Business libraries are more directly focused on very specific customer needs to assist the company in meeting their research and other goals. School libraries provide curriculum-based resources to help students meet specific learning goals (Harris, 2006). He outlines in his blog (Harris, 2006) the development of a School based framework. School Library 2.0 is about refocusing attention to the possibilities provided to a school when it makes use of the school library platform. In addition to librarians who

will be called upon more and more to be pedagogy and curriculum consultant teachers, the SL2.0 platform can also provide access to resources from and through the library platform in both physical and digital modes. The school library is the base for curriculum support resources in all their varied formats.

Conclusion

Making use of Web 2.0 is about making sure that, as a side effect to what the user is actually doing that they actually add value. In short, making use of Web 2.0 principals is making use of the long tail. In the Web 2.0 world, applications are run online, with no installation, updates are constant and continuous and access is instant from any computer with a browser. Leveraging the approaches typified by Web 2.0 principles allows libraries opportunities to better serve existing audiences and to reach out to potential beneficiaries where they happen to be, and in association with the task that they happen to be undertaking. This new approach makes it possible for searchers to be presented with choices to view online, borrow locally, request from afar, buy or sell as appropriate to their needs and circumstance. L2 reinforces the role libraries play in the community by building on today's best and continually improving the service. L2 can be summarized as being user-driven and aiming to save the each library user time in retrieving information.

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Library 2.0 and Web 2.0 Emerging Technologies: Its Application in Libraries

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ABSTRACT

Discusses the definitions, advantages and principles of "Web 2.0 and Library 2.0" Examines its application in libraries and analysis its inevitability for Library. Explains the theory of Web 2.0 such as Blog, Collective intelligence, Mash-ups, Peer-to-peer networking, Podcasts, RSS, social networking and web services. Finally highlights rapid changes in Library 2.0.

Keywords: Web 2.0. Library 2.0, Blog, Mashups, RSS, Social Network, Wiki, Podcasts.

Introduction

Presently Libraries and Information centers are fast growing to Information technology from traditional systems. Every library and information centre is processing to digital information, Bar Code systems and RFID technology used in library. Indian libraries are suffering from financial resources and infrastructure. User's demands are rapidly increasing with the passage of time. The user's approaches are likely transforming staffing levels, service models, access to resources, and services etc. Users are seeking more effective ways of delivered services along with achieving greater returns, and undoubtedly libraries have

strived to provide the required services to the users. Users can require any piece of information irrespective of time and place, and that too on a single platform. Librarians are endeavoring to meet the demands and required services of the users.

The raising popularity of user-driven online services, including MySpace, Wikipedia, and YouTube, has drawn attention of a group of technological developments known as Web 2.0. These technologies, which rely on user collaboration, include Web services, peer-to-peer networking, blogs, podcasts, and online social networks. Web 2.0 technologies have played a vital role in enhancing our ability to keep up with the changing needs of library users. Technological advances in past couple of years has enabled libraries to create new services that earlier were not possible, such as virtual reference, personalized OPAC interfaces, or downloadable media that library users can use in the comfort of their own homes. This increase in available technologies gives libraries the ability to offer improved, customer-driven service opportunities

The libraries and information areas are starting to feel the impact of web 2.0 with its capability to integrate user's data into other existing web site. Web 2.0 technology has effect of library and offer new service model, methods and technologies that can be adapted to improved library services. This concept, as it is being applied to libraries, is being referred to as Library 2.0. In order to lead successful libraries in these challenging times, we must be aware of new trends in technology and be able to understand them in order to determine if these new technologies should be implemented in the library.

Library 2.0 is user-centered change. It is a model for library service that encourages constant and purposeful change, inviting user participation in the creation of both the physical and the virtual services they want, supported by consistently evaluating services. It also attempts to reach new users and better serve current ones through improved users-driven offerings. Each component by itself is a step toward better serving our users. However, it is through the combined implementation of all of these that we can reach Library 2.0.

What is Web 2.0 Technology?

Tim O'Reilly define that "Web 2.0 is the network as platform, spanning all connected devices; Web 2.0 applications are those that make the most of the intrinsic advantages of that platform: delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users, while providing their own data and services in a form

that allows remixing by others, creating network effects through an "architecture of participation," and going beyond the page metaphor of Web 1.0 to deliver rich user experiences."

More concisely, the nebulous Web 2.0 concept represents a second wave of Web techniques to create more interactive and easy-to-use Web sites using new technologies. Certain Web sites popular with the tech crowd are often used as Web 2.0 examples: Flickr, Listible, Writely, Yahoo! Answers, Google Maps, Meebo, and Digg exemplify various aspects of Web 2.0. The technologies often used in connection with Web 2.0 include Ajax, blogs, APIs, clouds, CSS, RSS, social networking, tagging, and wikis. Consider the Web 2.0 disparate group of ideas as a way of differentiating some of the current Web from that of the previous millennium. The 1990s Web included many social aspects and even used some Web 2.0 technologies, but the current crop of Web 2.0 sites combine those technologies in different ways. Specifically, Web 2.0 sites have much more interactivity, with the ability to easily edit and move objects.

Moreover, Web 2.0 represents an environment where communities of participants with common interests contribute to a collective intelligence, and where dynamic, hardware-independent applications can be developed with the help of users. In practice, Web 2.0 features include blogs, podcasts, shared news social networking, wikis and other technology-based capabilities that allow users business or individuals to connect with and learn from each other.

Web 2.0 today means little more than having a public relations specialist who writes a blog-style commentary under the name of an organization to promote a new product or new services. Much farther along the implementation curve, Web 2.0 has created a new thought process and a revolutionary way of rendering services in which professionals and staff reach out to contact current and prospective users, and those users are given forums to shape products and services. This is most noticeable in the open source software field, where a vendor's mere existence calls for close interaction with its user community.

Web 2.0 Technologies Include

The term Web 2.0 loosely describes following new Internet technologies like blogs and social networking etc.

Blogs: Blogs are online journals or diaries hosted on a Web site and often distributed to other sites or readers using RSS.

Collective Intelligence: This refers to any system that attempts to tap the expertise of a group rather than an individual to make decisions.

Technologies that contribute to collective intelligence include collaborative publishing and common databases for sharing knowledge.

Mash-ups: Mashups are aggregations of content from different online sources to create a new service. An example would be a program that pulls apartment listings from one site and displays them on a Google map to show where the apartments are located.

Peer-to-peer networking: (P2P) This is a technique for efficiently sharing files (Audio, videos, or text) either over the Internet or within a closed set of users. Unlike the traditional method of storing a file on one machine—which can become a bottleneck if many people try to access it at once—P2P distributes files across many machines, often those of the users themselves. Some systems retrieve files by gathering and assembling pieces of them from many machines.

Podcasts: They are audio or video recordings—a multimedia form of a blog or other content. They are often distributed through an aggregator.

RSS: (Really Simple Syndication) Allows people to subscribe to online distributions of news, blogs, podcasts, or other information.

Social networking: It refers to systems that allow members of a specific site to learn about other member's skills, talents, knowledge, or preferences. Commercial examples include Facebook and LinkedIn. Some companies use these systems internally to help identify experts.

Web services: Web services are software systems that make it easier for different systems to communicate with one another automatically in order to pass information or conduct transactions. For example, a retailer and supplier might use Web services to communicate over the Internet and automatically update each other's inventory systems.

Wikis: Such as Wikipedia, are systems for collaborative publishing? They allow many authors to contribute to an online document or discussion

Why Application of Web 2.0?

Many enterprises are reaching significant benefits from Web 2.0. In a recent McKinsey global survey, more than three-forth of senior executives participating in the study said that Web 2.0 technologies are strategic and that they plan to increase their investment in Web 2.0 applications. "Efficiency Gains and Competitive Pressures Drive Enterprise Web 2.0 Adoption" March 2007 indicated that enterprises are rapidly adopting Web 2.0 around 89% of the CIOs questioned said they had adopted at least one or more web 2.0 tools and saw relatively high business value in the technology. Realizing Web 2.0's importance. Many IT vendors and service providers are positioning their products and

services as "Web 2.0 ready" and are bringing new Web 2.0 development tools to market.

Although Web 2.0 technologies are becoming mainstream both in consumer and business contexts, many IT professionals and businesses are skeptical. Web 2.0 is an important phenomenon that shouldn't be ignored as hybrid or a passing fad.

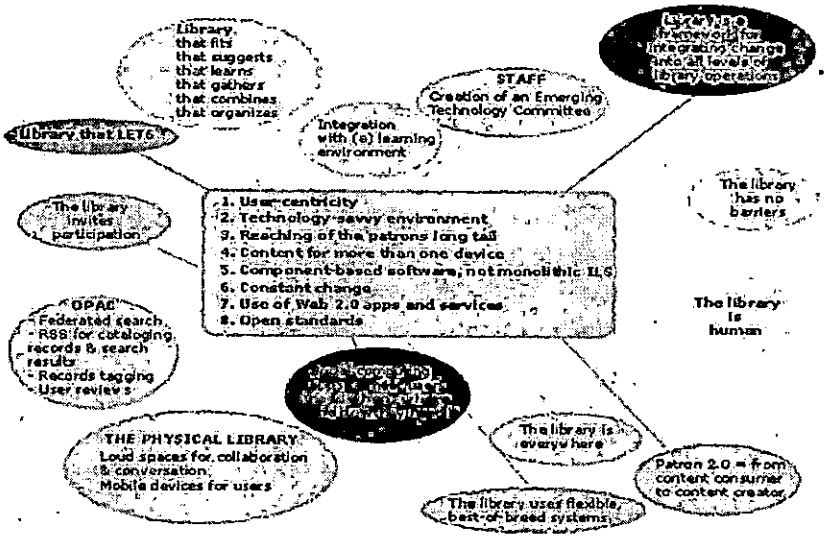
What is Library 2.0?

According to Wikipedia, "Library 2.0 is a direct spin-off of the term Web 2.0." Michael Casey is given credit for being the first to use the term on his blog Library Crunch. Casey suggested that libraries are at a crossroads where many of the elements of Web 2.0 have applicable value within the library community, both in technology-driven services and in non-technology based services. In particular, he described the need for libraries to adopt a strategy for constant change while promoting a participatory role for library users. Library 2.0 emphasizes that Library 2.0 isn't just about technology, but rather is based on continual evaluation and change to services based on users input and collaboration.

Michael Stephens addressed the idea in relation to the typical library website. With Library 2.0, library services are frequently evaluated and updated to meet the changing needs of library users. Library 2.0 also calls for libraries to encourage user participation and feedback in the development and maintaining of library services. The active and empowered library user is a significant component of Library 2.0. With information and ideas flowing in both directions–from the library to the user and from the user to the library, library services have the ability to evolve and improve on a constant and rapid basis. The user is participant, co-creator, builder and consultant–whether the product is virtual or physical.

The implication of Web 2.0, user-generated information grows as the network of its users grows. It includes services such as Flickr, Wikipedia, and blogs, which are user-centered: the users generate, organize, share, and grow the content, regardless of medium. Library 2.0 is an offshoot of those concepts, providing ready, flexible access to information, where library professionals work with their clients-using RSS feeds, wikis, and tagging in such a way that they become partners with common goals. Library 2.0 challenges us to use these new tools in exciting ways to better meet clients needs by engaging them.

Figure 2: Library 2.0 Meme Map by Bonaria Biancu



Source: Bonaria Bianur 2005

Principles of Library 2.0

The define Library 2.0 principles are very difficult, because it is not possible for every one to agree with exact parameters. It is not just about access to book and information. It is about innovation, user community building and allowing users for two-way information, information delivery, user design, etc. We are giving here collected key principles of library 2.0.

Ken Chand and Paul Miller

- The library is every one.
- The library has no barrier.
- The library invites participation.
- The library uses flexible, best-of-breed systems.

Michael Stephens

- The Library encourages the heart.
- The library is human.
- The library recognizes that its users are human too.

Wikipedia

- Browser + Web 2.0 applications + Connectivity = Full-featured OPAC

- Harness the library users in both design and implementation of services.
- Library users should be able to craft and modify library provided services.
- Companies wanting to business with public or academic libraries should not be creating proprietary hardware; Library 2.0 is not a closed concept.
- Constant change is replacing the older model of upgrade cycles.
- Beta is forever.
- Harvest and integrate ideas and products from peripheral field into library service model.
- Continue to examine and improve services and willing to replace them at any time with newer and better services.
- Library 2.0 is a disruptive idea.
- Rigidity breeds failure
- Harness the long tellAdvantages of Library 2.0

The advantages of Library 2.0 are following; •

- Open access to information will be automatic.
- Copyright will no longer exist because it will be replaced by clickable licenses among communities.
- No physical information required, trackable information events will take their place.
- Individual accesses convert to community access.
- No research project will be initiated without an informatics associate on the team.

Rapidly Changes in Library 2.0

Library 2.0 is not about searching, but finding, not about access, but sharing. It recognizes that human beings do not seek and utilize information as individuals, but as communities. Following are examples of the move from Library 1.0 to Library 2.0 include:

Library 1.0	Library 2.0
Email reference / Q & A pages	Chat reference
Text-based tutorials	Streaming media tutorials with interactive databases
Email malign list, webmasters	Blogs, wikis, RSS feeds
Controlled classification schemes	Tagging coupled with controlled schemes
OPAC	Personalized social network interface
Catalogue of largely reliable print and electronic holdings	Catalogue of reliable and suspect holdings, web-pages, blogs, wikis, etc.

Conclusion

The use of Web 2.0 technologies and applications, along with others not here mentioned and others not yet invented will constitute a meaningful and substantive change in the history of libraries. The library's collection will change, becoming more interactive and fully accessible. The library's services will change, focusing more on the facilitation of information transfer and information literacy rather than providing controlled access to it. Library 2.0 is users-centered; a multi-media experience; socially rich; and communally innovative. It is a personalized OPAC that include access to RSS feeds, blogs wikis, tags and public and private profiles within the library's network. It is virtual reality of the library, a place where one can not only search for books and journals but also interact with a community, librarian and share knowledge and understanding with them.

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Library 2.0 and Web 2.0

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ABSTRACT

Purpose – Today's libraries can be defined by the term Library 1.0. This defines the way resources are kept on shelves or stored in a computer. A user can take these resources home for a certain length of time and then bring them back to the library for someone else to use. Library 1.0 is a one-directional service that takes people to the information that they require. Library 2.0 aims to take the information to the people by bringing the library service to the internet and getting the users more involved by encouraging feedback participation. This paper seeks to present an overview of Library 2.0 and Web 2.0.

Design/methodology/approach – This paper presents an overview of Library 2.0 and Web 2.0 including definitions, principles and technologies involved.

Findings – The major difference between Library 1.0 and Library 2.0 is that in Library 1.0 only one-way flow of information is allowed whereas Library 2.0 gives library users the power to decide the service that they get, it is a read – write library. Library 2.0 is user-driven and aims to save each library user time in retrieving information. The major difference between Web 1.0 and Web 2.0 is that Web 1.0 took people to information whereas Web 2.0 will take information to the people.

Originality/value – Libraries have been in existence for a long period of time and are meant for keeping books, journals, CDs, etc. for reference or for borrowing by the public. The term Library 2.0 was believed to have been first made by Michael Casey in his blog LibraryCrunch. Chad and Paul Miller describe Library 2.0 (L2) as a concept, very different from the service one knows today, that operates according to the expectations of today's users. They state that with this concept the library will make information available wherever and whenever the user requires it. One point to note here is

that this concept is not about replacing the 1.0 technology already being used but rather about adding additional functionality.

Keyword(s): Library 2.0, Web 2.0.

Introduction

The information environment in which libraries find themselves is continuously changing. The ways in which people today communicate, interact, acquire and share knowledge have changed due to advancements in the information and communication technologies. Hence the libraries must compete for their survival. Libraries have to integrate several technologies in their services in order to attract the users. Library 2.0 is the new concept where users are not only information consumers but also content creators. It is a library with out any boundaries and with the fullest participation of users as architects.

Libraries were never the primary source of knowledge but they have always played a major role where people of all ages, gender and religion could go and engage with the various forms of resources. This is proven by the fact that 96 percent (Chad and Miller, 2005) of people of been to a library at some point in their lives and 89 percent of the UK population trust libraries. Library 2.0 (L2) wants this to remain but it has new aims that it hopes will work. The term Library 2.0 was believed to be first made by Michael Casey in his blog LibraryCrunch. (Chad and Miller, 2005) describe Library 2.0 (L2) as a concept, very different from the service we know today, that operates according to the expectations of today's users. They state that with this concept the library will make information available wherever and whenever the user requires it. One point to note here is that this concept is not about replacing the traditional technology adopted by libraries already in use but rather about adding additional functionality. Most internet users will have come across the terms "blog", "wiki", "podcast", "RSS Feed", and "CSS and XHTML Validated". These are all associated with the umbrella term of "Web 2.0", although the actual definition of this term is still hotly debated. Web 2.0 offers a means by which data and services previously locked into individual web sites for reading by humans can be liberated and then reused, in ways sometimes referred to as mashing up. Importantly, it also introduces the notion of a platform, meaning that others can build applications on pre-existing foundations and thus benefit from economic scale without reinvention.

Leveraging the approaches typified by Web 2.0's principles and technology offers libraries many opportunities to better serve their existing audiences and to reach out beyond the walls of the institution to reach potential beneficiaries where they happen to be, and in association

with the task that they happen to be undertaking. This new approach makes it possible for searchers to be presented with choices to view online, borrow locally, request from afar, buy or sell as appropriate to their needs and circumstance. However, with the rise of Google, Amazon and more, there is a fear that many users will bypass processes and institutions that they perceive to be slow and irrelevant in favour of a more direct approach to alternative services. Libraries should be seizing every opportunity to challenge these perceptions, and to push their genuinely valuable content and expertise out to places where people might stand to benefit from them; places where a user would rarely consider drawing upon a library for support (Miller, 2005). Library 2.0 is built upon the principles of and is a direct result of the term Web 2.0. Next we discuss some Web 2.0 concepts in more detail before delving into Library 2.0 in more depth.

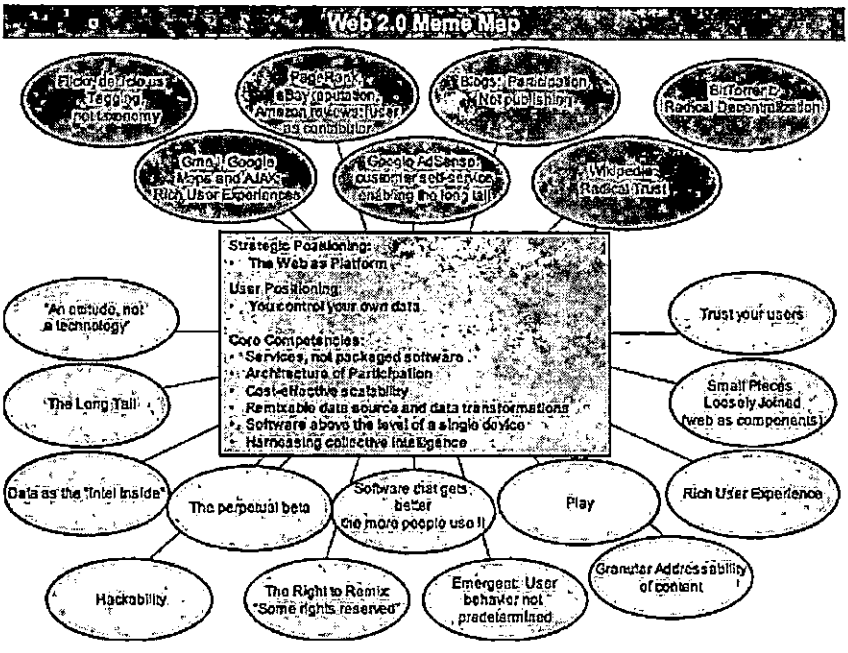
Web 2.0

Web 2.0 refers to a perceived second generation of web-based communities and hosted services — such as social-networking sites, wikis and folksonomies — which aim to facilitate collaboration and sharing between users. The term became popular following the first O'Reilly Media Web 2.0 conference in 2004. Although the term suggests a new version of the World Wide Web, it does not refer to an update to any technical specifications, but to changes in the ways software developers and end-users use the internet. According to Tim O'Reilly, "Web 2.0 is the business revolution in the computer industry caused by the move to the internet as platform, and an attempt to understand the rules for success on that new platform."

"Web 2.0" was first used by O'Reilly Media as the name of a series of web-development conferences (www.web2con.com/) that started in 2004. Sub-categories of what Web 2.0 encapsulates include usability, economy, participation, convergence, design, standardization and remixability. These categories are further broken down with sub-categories such as blogs, audio, video, RSS, open APIs, wikis, social software and focus on simplicity. Tim O'Reilly defines Web 2.0 as:

Web 2.0 is the network as platform, spanning all connected devices; Web 2.0 applications are those that make the most of the intrinsic advantages of that platform: delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users, while providing their own data and services in a form that allows remixing by others, creating network effects through an "architecture of participation", and going beyond the page metaphor of Web 1.0 to deliver rich user experiences.

In a recent and seminal paper on the topic Tim O'Reilly attempted to define the concepts behind Web 2.0, and offered a useful diagram to illustrate some of the related ideas.



Tim O'Reilly's Web 2.0 'meme map'

The following are the important characteristics of web 2.0:

- • Web 2.0 allows data to be exposed, discovered and manipulated in a variety of ways distinct from the purpose of the application originally used to gain access.
- • Web 2.0 **permits the building of virtual applications,** drawing data and functionality from a number of different sources as appropriate.
- • Web 2.0 is **participative.** The traditional Web has tended to be somewhat one- sided, with a flow of content from provider to viewer. Web 2.0 allows the
- users to actively participate online by means of blogging, sharing files, or equivalent.
- Web 2.0 applications **work for the user,** and are able to locate and assemble content that meets *our* needs as users, rather than forcing us to conform to the paths laid out for us by content owners or their intermediaries.

- Web 2.0 applications are **modular**, with developers and users able to pick and choose from a set of interoperating components in order to build something that meets their needs.
- Web 2.0 is about **sharing**: code, content, ideas.
- Web 2.0 is about **communication** and **facilitating community**. People communicate.
- Web 2.0 is **smart**. Applications will be able to capture user knowledge and deliver services to satisfy their needs.
- Web 2.0 is built upon **Trust**, whether that is trust placed on individuals, in assertions, or in the uses and reuses of data.

A general comparison between Web 1.0 and Web 2.0 is shown below:-

Web 1.0	**Web 2.0**
DoubleClick	--> Google AdSense
Ofoto	--> Flickr
Akamai	--> BitTorrent
mp3.com	--> Napster
Britannica Online	--> Wikipedia
personal websites	--> blogging
evite	--> upcoming.org and EVDB
domain name speculation	--> search engine optimization
page views	--> cost per click
screen scraping	--> web services
publishing	--> participation
content management systems	--> wikis
directories (taxonomy)	--> tagging ("folksonomy")
stickiness	--> syndication

Every one of the technologies listed in Web 2.0 above – RSS, Wikis, blogging, personalization, streaming media, ratings, alerts, folksonomies, tagging, social networking software, and the rest could be useful in an enterprise, institutional,or community environment and could be driven or introduced by the library.

Web 2.0 + Library = Library 2.0

Libraries as they are known today can be defined by the term Library 1.0. This defines the way resources are kept on shelves or at a computer behind a login. These resources can be taken from a shelf, checked out to the librarian, taken home for a certain length of time and absorbed, and then taken back to the library for someone else to use. Library 1.0 is a one-directional service that takes people to the information that they require. Library 2.0 – or L2 as it is now more commonly addressed as – aims to take the information to the people by bringing the library service

to the internet and getting the users more involved by encouraging feedback participation

Library 2.0

Library 2.0 is a loosely defined model for a modernized form of library service that reflects a transition within the library world in the way that services are delivered to users. The concept of Library 2.0 borrows from that of Business 2.0 and Web 2.0 and follows some of the same underlying philosophies. This includes online services such as the use of OPAC systems and an increased flow of information from the user back to the library.

With Library 2.0 library services are constantly updated and reevaluated to best serve library users. Library 2.0 also attempts to harness the library user in the design and implementation of library services by encouraging feedback and participation. Proponents of this concept expect that ultimately the Library 2.0 model for service will replace traditional, one-directional service offerings that have characterized libraries for centuries.

"Library 2.0" is a term coined by Michael Casey on his LibraryCrunch blog. Though his writings on Library 2.0 are groundbreaking and in many ways authoritative, Casey (2006a) defines the term very broadly, arguing it applies beyond technological innovation and service. In addition to Casey, other blogging librarians have begun conceptually exploring what Library 2.0 might mean, and because of this disparate discussion with very wide parameters, there is some controversy over the definition and relative importance of the term. The nature of this controversy Lawson (2006), Peek (2005), and Tebbut (2006) explore and begin to adequately rectify, and Crawford (2006) provides a very thorough account of the ambiguity and confusion surrounding the term, partially suggesting that there is nothing inherently novel about the idea.

A theory for Library 2.0 could be understood to have these four essential elements:

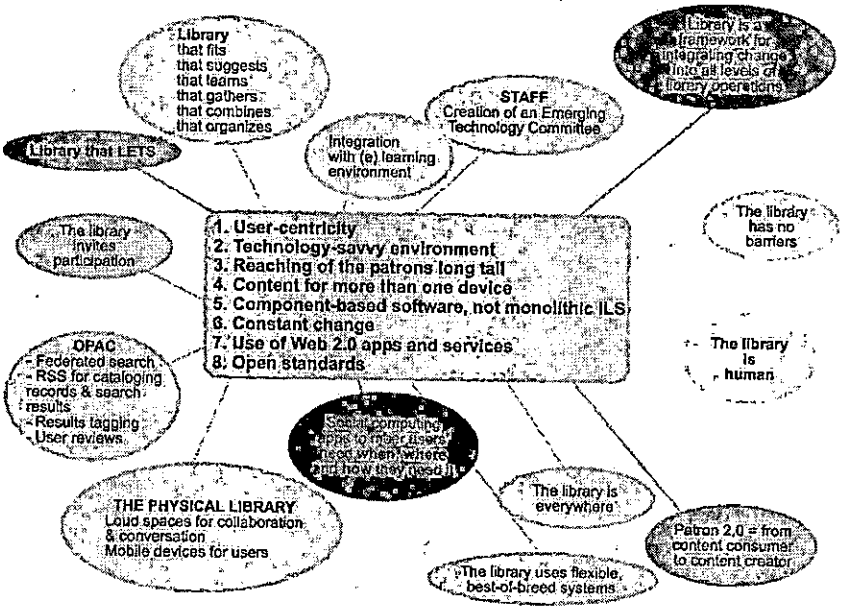
- **It is user-centered.** Users participate in the creation of the content and services they view within the library's web-presence, OPAC, etc. The consumption and creation of content is dynamic, and thus the roles of librarian and user are not always clear.
- **It provides a multi-media experience** . Both the collections and services of Library 2.0 contain video and audio components. While this is not often cited as a function of Library 2.0, it is here suggested that it should be.

- **It is socially rich.** The library's web-presence includes users' presences. There are both synchronous (e.g. IM) and asynchronous (e.g. wikis) ways for users to communicate with one another and with librarians.
- **It is communally innovative.** This is perhaps the single most important aspect of Library 2.0. It rests on the foundation of libraries as a community service, but understands that as communities change, libraries must not only change with them, they must allow users to change the library. It seeks to continually change its services, to find new ways to allow communities, not just individuals to seek, find, and utilize information.

Library 2.0 is a user-centered virtual community. It is a socially rich, often egalitarian electronic space. While Librarian 2.0 might act as a facilitator and provide support, he or she is not necessarily primarily responsible for the creation of the content. Users interact with and create resources with one another and with librarians. In some ways, it is a virtual reality for libraries, a Web manifestation of the library as place. A library's presence on the Web in Library 2.0 includes the presence of that library's constituency and utilizes the same applications and technologies as its community, a concept Habib (2006) recognizes in a very useful model for Library 2.0 in regards to academic libraries.

While these conceptual tenets of Library 2.0 might be rather dependable, envisioning the technological specifics of the next generation of electronic library services is at once both fraught with inevitable error and absolutely necessary. The details of how the applications so common to Web 2.0 will continue to evolve, and how libraries might utilize and leverage them for their patrons, are inherently hidden--they are wholly about innovation. But the conceptual underpinning of a library's web-presence and how it must evolve into a multi-media presence that allows users to be present as well, both with the library or librarian and with one another, are clearly in need of development. The following prognostications are, then, more speculative than predictive. They are meant to conceptually explore and provide context to the relationship between the evolving Web and the evolving library, as outlined above, as a means to facilitate innovation and experimentation in library electronic services, and this list is by no means comprehensive.

Figure below shows a Library 2.0 Meme Map (Biancu, 2006) which reveals all the principles and important parts of Library 2.0 that need to be in place for it to be as efficient and as effective as possible.



Source: Biancu (2006)

Library 1.0 vs. Library 2.0

In terms of library services, we can compare the library 1.0 with library 2.0 as follows:-

Library 1.0	Library 2.0
Closed stacks	--> Open stacks
Collection development	--> Library suggestion box
Preorganized ILS (Integrated Library Services)	--> User tagging
Walk-in services	--> Globally available services
"Read-only" catalog	--> Amazon-style comments
Print newsletter mailed out	--> Team-built blog
Easy = dumb users	--> Easy = smart systems
Limited service options	--> Broad range of options
Information as commodity	--> Information as conversation
Monolithic applications	--> Flexible, adaptive modules
Mission focus is output	--> Mission focus is outcome
Focus on bringing 'em in	--> Focus on finding the user
ILS is core operation	--> User services are core

With library 2.0, the collection becomes virtual library that is without walls.

Importantly, the traditional library read only catalogues will become Amazon style comments where the user comments, reviews and feed backs will be used for enhancing the catalogue. Information is viewed as a tow way process in library 2.0 where in the users search, investigate and participate in the creation and re-mixing of the new content. The mission focus is not on the mere output but on the outcome of an organization. To summarize, library 2.0 focuses on user and how to attract the user as information consumer as well as contributor.

Application of Ranganathan's Five Laws of Library Science in Information Technology and Web Environment :-

The Five Laws of Library Science

1. Books are for use.
2. Every reader his or her book.
3. Every book its reader.
4. Save the time of the reader.
5. The Library is a growing organism.

The new revised version of Ranganathan's laws as applicable in Information Technology and Web Environment:

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.

This new revised version of Ranganathan's laws gives us the grounding for librarians' profession just as the 1931 original did. The Web exists to help users achieve success through serving user information needs in support of the world community. Information needs are met through web pages and documents appropriate to web users.

Web resources are for use

The Web was designed to meet the human need to share information resources, knowledge, and experience. Webmasters want people to interact with their web sites and pages, click on them, read them, print them if they need to, and have fun. So web sites are not statues or temples users admire from a distance. This law implies that the Web is for using and learning and information is there to be used. This law is very important because information serves no purpose if it is not utilized and at least available for people to attempt to learn. The role of the Web is to serve the individual, community and service, and to maximize social utility in the communication process.

Every user his or her web resource

This law has many important implications for the Web. This law reveals the fundamental need for balance between making web resources and the basic right of all users to have access to the web resources they need anywhere in the world. This makes diffusion and dissemination very important; each web resource should call to mind a potential user.

A web site must formulate access policies that ensure that the collection it is building and maintaining is appropriate and adequate to fulfill the expectations of its community of users. In other words, the collection must be appropriate to the web site's mission. A web site must contain resources appropriate to the needs of *all* its users. Any web site that limits access in any way must ensure that this restriction does not prevent adequate access to the collection by the users that web site was created to serve. Access policies also have implications for search engines.

Every web resource its user

When a web user searches the Web, or gains access to the Web's services, there are certain web resources that will meet his or her needs. It is webmasters' job to ensure that the connection between the user and the web resources is made and that connection is as practical, easy and speedy as possible. Appropriate arrangement of documents in a web site is also an important means of achieving this objective of the third law.

If a web resource is secretly published by a web site, but its diffusion and dissemination otherwise kept secret, the web resource may not be readily discovered and retrieved until the user has reached a crisis in his or her research. At such a time, a frustrated user may seek out a webmaster or someone else with knowledge of the needed web resource's existence, or may simply stumble upon it by serendipity. While either scenario may represent a happy ending for the user, they are not the preferred model of web service. And in the worst case, the web resource may remain invisible indefinitely.

How can a webmaster find a user for every web resource? There are many ways in which a web site can actively work to connect its resources to its users:

- Distribution of new web resources via mailing lists, listservs and discussion groups;
- Making new web resource list on the home page of the site, etc.;
- Submitting resources to popular search engines and directories, which is the most common way of indexing the new resources of a web site.

The use of a structured, well-organized and more categorized site map/index is a necessity, as it ensures uniformity of treatment of various

web resources on similar topics. It should be simple, and easy to use. This is something most webmasters probably feel that they already do, but their site maps are not always clear and easy to use. Also important is a correct link to web resource, as mislinking and misindexing a resource can make it all but invisible to the user and, for all practical purposes, lost. To help users to find resources that are topically related, web site designers should use navigational links.

The point here is that webmasters should add content with specific user needs in mind, and they should make sure that users can find the content they need easily. They should make certain that their content is something their users have identified as a need, and at the same time make sure they do not clutter up their web site with content no one seems to care about. Webmasters need to continue adding unique content to their web sites, because the high quality content is everything.

This third law is the most sensible, and it is consistently broken by most webmasters and web writers on most subjects. This law stipulates that a web resource exists for every user, and that resource should be well described and indexed in the search engines' indexes, displayed in an attractive manner on the site, and made readily available to users. This law leads naturally to such practices as open access rather than closed files, a coherent site arrangement, an adequate site map, and a search engine for each site. "It should be easy for users to search for information from any page on a site. Every page should include a search box or at least a link to a search page".

Save the time of the user

This law presents the biggest challenge to the Web administrators, webmasters and search engine designers. Webmasters should always bear in mind that the time of users is very important and precious. A web site must always formulate policies with the information needs of its users in mind. Web site collection must be designed and arranged in an inviting, obvious, and clear way so as not to waste the time of users as they search for web resources they need.

This law has both a front-end component (make sure people quickly find what they are looking for) and a back-end component (make sure our data is structured in a way that information can be retrieved quickly). It is also imperative that we understand what goals our users are trying to achieve on our site.

Webmasters have helped save the time of the user by creating a user friendly web site. When a site has been finished, uploaded and tested with users, their experiences will be worth reading. Perhaps then, the

question is that "is the web site user-friendly?" A webmaster should think about users and how to attract them, develop for them, cater to them, if s/he wants to satisfy the Web community. We need to remember that the webmasters' job is to help web users research effectively and efficiently, to update web sites, and to make them easy to navigate. So user friendliness and usefulness are important..

Perhaps this law is not so self-evident as the others. None the less, it has been responsible for many reforms in web site administration. A web site must examine every aspect of its policies, rules, and systems with the one simple criterion that saving the time of the user is vital to the web site's mission.

There are other ways to satisfy this law. A well-planned and executed site map saves the time of the user. Saving the time of the user means providing efficient, thorough access to web resources. It means satisfied web users. This is the prime measure of the web site's success; disappointed or frustrated users mean that web site has failed in its duty and its responsibility. This law might be restated as: *Serve the user well.*

In order to save the time of the user, web sites need to effectively and efficiently design systems that will enable the users to find what they are looking for quickly and accurately, as well as to explore the vast amount of collection of information available that could potentially be useful. This fourth law emphasizes efficient service to the users, which implies a well design and easy-to-understand map/index to the site.

The Web is a growing organism

The Web reflects the changes in our world and will continue to grow as we move along in life and contribute to its riches. It is indeed a growing organism. We need to plan and build with the expectation that the Web and its users will grow and change over time. Similarly we need to keep our own skill levels moving forward.

The Web presents an interesting dilemma for librarians. For while only about 50,000 books are published each year in the United States, the World Wide Web contains an ever-growing and changing pool of about 320 million web pages. When a book is published, it has been assessed by editors and publishers, and hopefully has some value. Moreover, when a web page is published, it has simply been uploaded to a server somewhere. There are no guidelines for the Web. Anyone can publish--and does. Librarians can play an important role in weeding through the dross and establishing annotated lists of links that patrons can feel confident about using. The boundless resources found on the Web benefit from a librarian's expertise in such areas as indexing and

cataloguing, as well as search techniques; there will be an increased demand for these types of skills as users demand more value from the searches that they conduct.

The fifth law tells us about the last vital characteristic of the Web and stresses the need for a constant adjustment of our outlook in dealing with it. The Web grows and changes and will do so always. Change and growth go together, and require flexibility in the management of the Web collection, in the use of cyberspace, in the retention and deployment of users, and in the nature of web programs. The Web collection increases and changes, information technologies change and people will change. So this fifth law recognizes that growth will undoubtedly occur and must be planned for systematically.

Conclusion

The use of Web 2.0 technologies and applications will constitute a meaningful and substantive change in the history of libraries. The library's collection will change, becoming more interactive and fully accessible. The library's services will change, focusing more on the facilitation of information transfer and information literacy rather than providing controlled access to it. Library 2.0 reinforces the role libraries play in the community by building on today's best and continually improving the service. Library 2.0 can be summarized as being user-driven and aiming to save the each library user time in retrieving information.

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Library 2.0: The Library's Image in the Mirror of Web 2.0

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ABSTRACT

The intrinsic image of libraries, in the society or in the organisation or institution wherever they are located, is salient and nuclear. But, the libraries and the librarianship did not enjoy such an imposing image so far. The emerging web 2.0 environment might provide ample scope for the libraries to project their due image as library 2.0. The paper discusses the probable features of library 2.0 and presents a brief account of the image of the library 2.0 in the morror of Web 2.0. It concludes with a hope that in the mirror of Web 2.0 the image of Library 2.0 will be more glorious.

Introduction

Libraries, the temples of knowledge, the store houses of knowledge, the information centers, the learning resource centers, the knowledge centers or the knowledge parks, did not have an imposing image since inception. Librarianship, though being a key profession did not enjoy the professional status as enjoyed by the professions like the Medical profession, Engineering, Law, etc. Libraries were considered to be storehouses of books where the purpose of developing a collection was to preserve the documents and thereby discourage their use. Ranganathan (1967) in his *Five Laws of Library Science* (the first edition of which was published in 1931) gives umpteen numbers of cases to prove what kind of perception the society had on libraries. It is in view of this Ranganathan propounded the first law of library science proclaiming, "Books are for use."

In fact, it were these libraries that had closed access and an objective of collecting documents for preservation for posterity, that should be called

as the first generation libraries, the library 1.0. Then, the second-generation libraries (Library 2.0) should be the service libraries that provided Open Access and satisfied the first law of library science by promoting the use of books. The advent of I T had given rise to the evolution of the third generation libraries, the library 3.0, which were called e-libraries, digital libraries, virtual libraries, etc. Now the Web 2.0 technologies are going to transform the libraries further into another generation of libraries, which should be called as library 4.0. But, historically and unconsciously the human society did not recognize, name and number different generations/developments in the libraries since beginning as was done in case of computers. The present society has named the emerging libraries as Library 2.0. Therefore, we must consider the emerging libraries in Web 2.0 environment as Libraries 2.0. As Web 2.0 is going to create substantial impact, libraries 2.0 also should project an imposing image in the mirror of Web 2.0.

What is Library 2.0

The Library 2.0 label reflects revolution more than evolution, which we believe accurately, depicts the new opportunities and the impending challenges facing software vendors. (Manees, 2006). The term "Library 2.0" was coined by Michael Casey on his blog LibraryCrunch as a direct spin-off of the terms Business 2.0 and Web 2.0.(Miller: 2005; Wikipedia:2007). Primarily a library whether it is library 1.0 or 2.0 it should contain the basic philosophy of the service libraries. Libray 2.0 should be a library and it cannot therefore ignore the element of the basic spirit of library being dynamic and community based.

Library 2.0 is a loosely defined model for a modernized form of library service that reflects a transition within the library world in the way that services are delivered to users. The concept of Library 2.0 is borrowed from the concepts of Business 2.0 and Web 2.0 and follows some of the same underlying philosophies. This includes online services such as the use of OPAC systems and an increased flow of information from the user back to the library: With Library 2.0, library services are frequently evaluated and updated to meet the changing needs of library users. Library 2.0 also calls for libraries to encourage user participation and feedback in the development and maintaining of library services. The active and empowered library user is a significant component of Library 2.0. With information and ideas flowing in both directions – from the library to the user and from the user to the library – library services have the ability to evolve and improve on a constant and rapid basis. The user is participant, co-creator, builder and consultant – whether the product is virtual or physical." (Wikipedia : 2007a)

The Probable Features of Library 2.0

The following presents the probable features of Library 2.0:

1) User-centered system: The user-centered feature of the library 2.0 would enable it to develop its services based on users' preferences, demands and feedback. The conventions and practices the libraries follow with regard to classification, cataloging, indexing etc. were more system centered including the library working hours. The library 2.0 would modify all these conventions on the principles of user-centeredness i.e. user preference and user approach would form the base for developing tools, techniques, products, services, etc.

2) Community building capability: This will be enabled through the participation that social computing brings. Library 2.0 uses Social Community technologies. Because the web 2.0 is social community technology. Therefore by applying web 2.0 technologies, library 2.0 is expected to use social community technology for technology building.

3) Free from complexity: Unlike virtual/digital libraries on the web1.0, that are complex in nature in terms of user enrolment, involvement, access etc., library 2.0 will ensure minimization or elimination of all these complexities

4) Free from bureaucratic barriers: Unlike traditional libraries, Libraries 2.0 will have more autonomy, as there will be more independence on their part since they will be financially self-reliant and open in terms of greater participation of users. Library 2.0 would also be democratic. It would be democratic in exchange of ideas, promoting research, education, for its capability of interchanging and refining information cross-sectionally by author and reader.

5) Intermediary in nature: In the digital environment it is well known fact that the librarian plays more the role of an intermediary to save the time of the users in spite the web being more user-friendly. Thus, librarians 2.0 will bridge the gap between the user and web 2.0 resources.

6) Technologically different: Technologically different would be library 2.0. The Easy, quick, participative and interactive technology makes it different from its prior versions in web 1.0 environment. Based on web 2.0 and its free and easy tools and software like blogs, wikis, podcasts, Open Source Softwares (OSS), Social tagging, Really Simple Syndications (RSS), Instant Messaging (IM) services instead of question-answer/email folksonomy, and tagging. Open programming interfaces. offer the facility of tagging, searchability and

readability on the Internet without considering language barriers and without awareness of complexity behind architecture, programming, cataloging and using controlled vocabulary so on. Library 2.0 will emerge as a popular public center. The Flexible nature of the web 2.0 will be the mere secret of its popularity in a way that makes it "social and public community web"(O'Reilly, T , 2005; Parakh P, 2006; Maged N Kamel Boulos; Steve Wheeler, 2007) or "public centered web" (Rabinson K., 2005). Hence, Libraries 2.0 also will emerge as "Social and public community libraries" or "Public centered libraries" by using web2.0 technologies.

This implies that there will be a shift from hard tasks of library like cataloging, classification, indexing to automatic information processing.

7) Interactive in nature: The interactive nature of library 2.0 would grant an opportunity to librarians send and receive information, among audiances, collegues, professionals, and subject experts on the web. In other words the quantum of work related to online reference and information services would increase considerably in order to meet the demands of increasing workload, the libraries 2.0 would required more qualified and skilled reference librarians or information workers. In other words it means that library 2.0 would provide more jobs.

8) Decentralized system: It supports decentralization, Peer-to-Peer (P2P) networking and grid computing technologies would make it possible to provide services that interconnect large libraries without centralized infrastructure for data and computation sharing and it would enable library2.0 to be more independent.

9) Center for Sharing Minds: Library 2.0 could also become a center for sharing minds without any geographical limitations. It is the future library, where questions, ideas, proposals can be shared through libraries virtual forum. Everybody, from librarian to user, layperson, professionals participate in the process of informing, reforming and clarifying directly by joining to forum and sharing their mind or thoughts, or indirectly by making their idea available from blogs, wikis.

More Personalized in service: library as center of knowledge tries to provide comprehensive collection; huge amount of information is available on the web, but personalized information is rare. Library 2.0 will provide individuals with personalized information by putting the information need in shared desktop of library2.0, that means it will render more personalized services than the conventional society.

10) Learning library: The educational role of library would be more practical on Web 2.0 For example librarians undertaking "Teaching to Teachers" program locally by registration and setting time schedule which is sometimes difficult especially in medical college libraries that serve busy doctors. This type of service will prove to be more useful to the audience. For example, in medical college libraries, if the Librarians can play their vital role educating doctors regarding how to appraise the information available on the Net. And to find out How Strong is the evidence elicited from literature? How big is the effect? Does the effect matter to patients? In web2.0 platform it is possible to render this vital role more impressively.

11) Financially self-reliant: Libraries in the web 2.0 environment will be in a position to have financial freedom. In fact, the present day libraries are facing serious financial crunches. Almost every library has severe budget cuts, especially in the developing nations. These libraries will be provided with better avenues to raise their financial position by rendering services on the web at a reasonable price and as the blog bloom has given scope for individuals too to raise money through ads. The libraries being formal organizations will be in a position to raise substantial revenues through their information and advertisement services.

The above features indicate that the Library 2.0 will be more efficient and dynamic system than the conventional or earlier libraries. With Library 2.0 library services are constantly updated and reevaluated to best serve library users. Library 2.0 also attempts to harness the library user in the design and implementation of library services by encouraging feedback and participation. Proponents of this concept expect that ultimately the Library 2.0 model for service will replace traditional, one-directional service offerings that have characterized libraries for centuries (Wikipedia:2007a).

As it is going to be more interactive environment, the libraries will have better opportunities to render more effective Current Awareness services and SDI services. The web being very huge and unmanageable, libraries will have to play the role of indispensable intermediaries. Library services can be much more dynamic, reactive, proactive. The staff can dedicate their time towards user services than acquisition, cataloguing, serials control and circulation activities. There will be ample scope for the direct online interaction between the staff of the library and the library users. Librarian online will create greater impact and image of the library services than passive librarian who confined to cataloguing or acquisition section in the conventional libraries. The librarians 2.0 will

bridge the gap between the user and the web 2.0 resources. In fact, the web 2.0 is going to be user-friendlier web. However, saving the time of the users in information searching and accessing would be a worthwhile service that can be rendered by the librarians 2.0.

Proponents of Library 2.0, such as Stephen Abram (2006) , Michael Stephens (2006) , Paul Miller (2006) and others, have spoken to these criticisms, arguing that while individual pieces of Library 2.0 may not be entirely new, the convergence of these service goals and ideas with many new Web 2.0 technologies has led to a new generation of library service. The key principles of Library 2.0 are not just about access to books and information. It is about innovation, about people, and about community building, enabled through the participation that social computing brings. It achieves this through trust and encouraging users to share ideas through writing, rating, and commenting against everything in the library's collection. It even makes the collection open to developers to use, re-use and improve (wikipedia: 2007a).

Image of Library 2.0 in the Mirror of Web 2.0

By utilizing web 2.0 technologies that are convergent technologies having diverse applications, the library 2.0 might evolve itself as a multifaceted center. It might appear to be an indispensable Knowledge Center (KP) for the seekers of knowledge, Recreation Center (RC) for seekers of recreation, Learning Resource Center (LRC) for students and learners, Technical Information Center (TIC) for technician, scientist, researchers, professional, etc. Community Information/Resource Center (CIC/CRC) for members of community, Cultural Center (CC) for preserving local/regional/national culture, Archival Center (AC), Information Therapy Center (ITC/IxC) for patients/caregivers, blogs, wikis, Mind Sharing Centers (MSC), Portal, Gateway, etc.

The above or the various facets of libraries since a long time but it dose not mean single library will have so many facets of its own. The idea is that a library in one context and in particular environment would assume one or few suitable forms and endeavors to serve the community of its users. Even in web 2.0 environment also it does not mean a single library would assume all the above stated facets. However due to convergent technologies it is possible that most of the above facets can be assumed and projected by the library 2.0 in the mirror of Web 2.0. Further, by the virtue of P2P, grid computing, and aggregation facilities/technologies the library 2.0 would be more resourceful to meet the challenges posed by diverse needs of the users. In fact when we envisage the image of library 2.0 in the mirror of web 2.0 it should be an imposing multifaceted image that would certainly bring due status and recognition to the libraries and

the profession of librarianship. The figure presented below would be a diagrammatic representation of Library 2.0 in the mirror of Web 2.0.

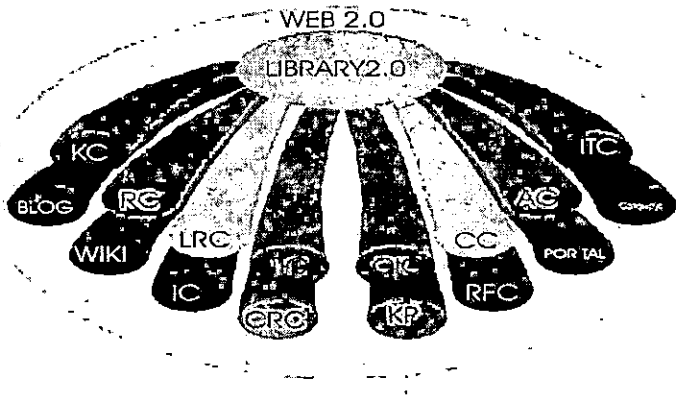


Fig.1. Image of the Library 2.0 in the mirror of Web 2.0

Conclusion

Librarianship was denied its due status and authority since inception. It is in view of this, the librarians' forums, at national and international level, held many conferences and seminars to deliberate upon due status and authority to librarians. To quote an example, the IASLIC in 1990 conducted a seminar on Status and authority of library profession in library management itself, then imagine the status and authority of library profession in the society. The scenario is changing at very slow pace. With the advent of advanced technologies every profession is provided with better avenues to develop its own image and render more effective services. Libraries, by utilizing the web 2.0 technologies, should be in a position to take advantage of the latest developments and technologies to improve their image.

The image should be saleint and ideal in creating a fantastic horzon in the vision of librarians with a hope to break the libraries walls and opening a way up to users any where and any time. Further, building culture in the society and professional practices would enhance the image of the library 2.0. However, the need to build culture among professionals and service providers, experts is obligatory, in the mission of the library 2.0, in order to optimize the use of web 2.0 technologies.

But, Some technology experts, notably Tim Berners-Lee, have

questioned [on web 2.0] whether one can use the term in a meaningful way, since many of the technology components of "Web2.0 " have existed since the early days of the web. (Wikipedia: 2007b). So also some librarian bloggers have argued that these [library 2.0's] key principles are not new and have been part of the service philosophies of many library reformers since the 19th century. (Wikipedia : 2007a). This is quite true. However, the concept of evolution indicates that there will be some improvement in every later form of evolution. Therefore, the evolution of web 2.0 might certainly offer some better features and capabilities in the technology and by using such advanced technologies Library 2.0, as newly evolving library should also project better and imposing image by rendering more efficient and effective services. This is an opportunity to the library world to reflect its due image. Let us hope that in the mirror of Web 2.0 the image of Library 2.0 will be more glorious.

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Role of Academic Librarians in Digital Era: Issues and Implications

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Introduction

The library & Information Profession encompasses a range of positions, which include – Librarian, Information Officer, Information Scientist, Information Professional, Information Manager, Information specialist. Related disciplines cover other areas such as Records Manager, Knowledge Manager, Archivist etc.

It is hard time to reassess the role of library as an institution and the role of the librarian as an information specialist. 21st century is visualizing a time of extensive social and technological change. These changes will inevitably have a profound impact on university and college libraries. Parker has claimed that the world is on the brink of a new social revolution-the information revolution- that will be as important as the industrial revolution. Now we are truly in information age emphasized by the digital technology.

21st century, the age of electronics is an era in which all human activities are dominated by information and communication technology. IT is being applied more extensively and more successfully. In this century rapid advances in computer and telecommunications is not coming to a halt. The rate of progress will not only continue but it will accelerate. Universities will still have to provide facilities such as laboratories. Information has been identified as one of the vital resources needed for the success in almost in every human activity. The present trend indicates that the information will govern every sphere of life of the society and making a profound impact on human life as well as on society and the economy of every country. The impact of phenomenal growth of information and application of information technology in the form of

high degree of computerization has been changing the human society into an information society.

Impact of Information Society on Users

Advances in computers and communication technology have changed the situation dramatically in the past decade. Many libraries are providing access to on-line databases. The rapid growth of these machine-readable databases and of on-line access to these resources has greatly refined and enhanced the literature searching capabilities of library and information professionals. Using this facility, even small libraries having limited resources have been able to cater the needs of its clientele. User community is composed of individuals working in a specific subject field. Some of these members may be involved in research and development activities and some may be in a variety other activities. All are users of information.

To meet the present information need of society following issues are important:

1. Training of LIS professionals
2. Increase the fund
3. Adoption of modern technology
4. End-user education and training

Even in information era users need help to use sophisticated technology which is being used by the libraries & information centres. They are unable to exploit the information available with network. Required response could not be achieved due to complication of technology. The ultimate objective of library will not change in future also. Satisfaction of users will remain same as it was in the past. Users will set forth the focus and direction of future libraries and user satisfaction would be ultimate challenges before us.

As their needs are changing they would require the information well suited to them as quick as possible. The librarian can discharge his obligation only by shaping the library users in self-directed learners. To do this he has to introduce the learner to the world of exploration. He has to induct him into the actual tasks of exploration.

Academic community is usually defined by institutional affiliation i.e. faculty, staff, students of the institution. University/College exists to bring together the community of users and the universe of information resources. Selective acquisition is one of the complex activities of the university library. No library has sufficient fund to purchase whatever is being published. Growing variety of forms of information resources have made the acquisition process more critical. University libraries find

themselves in a precarious position as the literature store continues to grow, the cost escalates and library budgets decline in relation to its purchasing power. Academic libraries will face the problem of organisation and control of documents.

Since no university/college library can claim to be self sufficient, greater emphasis is on resource sharing among university and research libraries. A number of Library and Information networks have been developed since 1980's (INFLIBNET, DELNET) to provide effective and efficient library and information services to the users.

Recent developments in library and information areas have taken a see change both at international and national level due to the following reasons:

1. from traditional library to digital library
2. from collection development to content development
3. from library cooperation to library resource sharing network/ consortium
4. from information society to knowledge society

Therefore it is essential from above emerging changes, library professional are changed to information professional to cope up with the challenges.

- Developing techniques to collect, organize and retrieve vast amount of information;
- Designing information systems to meet specific needs of library users;
- Organizing libraries, media centers, and information agencies to be highly productive and effective;
- Integrating information technologies to provide effective information services;
- Sharing information resources through innovative networking and ensuring equitable access to a broad range of information.

To face the challenges of information explosion, LIS professionals will have a great task to do. They will have to be kept informed of technological advancement, educate users, and procure collection from all fronts. To provide right information to the right user at the right time, they should acquire information-processing skills, information management skills.

Emphasis on Electronic Information Resources

Change in the form of information is another important phenomena necessitating the change of role of LIS professionals. To cope with the changing needs of information the forms of resources of information are

also changed. In order to know the day to day information of outer space or moon, we have to no other way to collect information but through the high level-sophisticated technology. With the advancement of science and technology, form of information is modified technologically. For effective and efficient service library professionals have to deal with following advanced forms of information resources:

(i) Compact Disk Read Only Memory (CD-ROM).
It is essentially PC-based technology and a powerful tool for storage and retrieval of large amount of data. It is an optical disk technology where storage, retrieval and manipulation of vast quantities of electronic forms are facilitated. It supersedes all the electronic structure such as microfilm, microfiche, floppy etc.

(ii) Digital Video Discs (DVD)
It is next generation of optical disc storage technology; this novel technology has many reference applications for storing gigabytes of bibliographic full texts and multimedia database. Double sided, double layered DVD can hold about 17 GB of data.

(iii) Internet
Introduction of Internet makes a complete change in the form of information resources. Internet has become the backbone of the information superhighway. This new forma of information resource is to facilitate the effective transfer of information and data in the form of audio, text and video in real-time across computer network and makes the services available to everyone.

(iv) Local Area Network
Local Area Network establishes a distributed network environment that finds a number of applications in various areas such as resource sharing, document distribution, office automation, distributed computing etc.

Education & Training
All library staff should be encouraged to participate in a program of continuous professional development. For all levels of the library & information service it is of paramount that staff are kept up to date with new developments, maintain professional standards, extend their personal network of contacts, address any gaps or deficiencies in their skills, and acquire new expertise.

New developments in information & communication technologies are rapidly expanding our information environment and also the range of skills required to exploit them. The Library & Information Science education in India in general has failed to come to grips with the

implications of information age. The library science has lagged behind technological developments in many ways. Application of new information technology has led to the need for different kinds of professionals who are in a position to apply these technologies. They require different kinds of abilities based on knowledge, skills, attitude & experience.

In India, over the last one decade efforts are being carried out to change the education of librarians in response to the changing information environment and the needs of society. In recent years, most programs of education in library science have broadened this scope to include the different segments of information science and technology. The use of modern computers as a basis for creating, packaging, producing, disseminating, acquiring, organising and retrieving information has become a fact of life. Education on in Library & Information Science now prepairs people to serve as effective information specialists or professionals, as well as effective librarians.

The library & Information professionals of today cannot afford to ignore such developments. The library & information science curriculum is not adequate to prepare professionals to adapt to evolutionary forces converting us from a print on paper to electronic society. The library & information professionals can succeed only if the present system of education is overhauled. Education and training centres and professional organisations should make efforts to standardise the courses keeping in view the present needs.

Many of universities and institutions today are giving a lot of emphasis on specialized courses and trainings on library automation and networking, digital library, internet for library and information professionals, design and development of websites, content development in electronic environment.

Changing Role of LIS Professionals

The traditional functions and services of the library are undergoing dramatic changes & the new concept of library is emerging. Library and Information professionals are likely to have more responsibilities far beyond those they have at present. It seems evident that the survival of the library profession depends on its ability and willingness to change its emphasis and image. The profession can only survive if its focus shifts to and emphasis on the technical expertise of its practitioners.

The important role of professionals in the present context would be:

(i) Assessing and interpreting user needs & tailoring the services accordingly

(ii) Accessing on-line databases
(iii) Providing end user training
(iv) Processing and disseminating information using multi-media technology
(v) Design, development and maintenance of databases
(vi) Providing counseling services
(vii) Strengthening & updating technological skills.

The mission of library and Information Science profession is to extend and enhance the quality of information service in a multiculture, technology based and global society as stated below:

- To provide a strong and flexible education program that is responsive to both the immediate and long-range needs of professionals
- To provide an educational environment which fosters effective teaching and learning
- To provide competent information professionals who can facilitate the flow of information in a rapidly changing society
- To contribute to advancement of theory and practice through systematic and continuing research and publication
- To provide continuing education opportunities that assist information professionals in maintaining their professional competence and responding effectively to the information needs of the clients they serve.
- To contribute to professional practice and the activities of professional organisations interested in the provision of information in society through continuing professional service.

In India, the library and information courses are being offered in number of Universities which address modern information issues. There is lot of variations in course contents. In order to standardise a need based course contents, attempts have been made by UGC and other professional organizations. In view of the changes in the global information scenario, the effective professional curriculum in Library and Information Science emphasize on capacity building or competency development.

There is no doubt that librarianship is becoming more complex and more demanding. Machine-readable databases and access to these have greatly increased the capabilities of the libraries to provide a high level of information searching skills. The effective exploitation of vast amount of online resources depends on the professional knowledge and techniques to search them. This ability in turn requires some knowledge of indexing policies and practices of procedures for vocabulary control as well as familiarity with alternative search strategies. In computers and communication, new capabilities & applications constantly emerge.

The emerging situation not only leads to increased communication and understanding between faculty & library staff but also opens doors for cooperative efforts. If we can accept the reality that a library and library education are in inextricably tied to a common future of success or failure, we would be able to reduce the barriers and make us perceive our agenda as distinct. The ultimate beneficiaries of this partnership will be beyond the profession itself, the users whom our profession seeks to serve. The obstacles to partnership are far surpassed by the rewards which will include the existence of the libraries as viable organization in 21st century.

Conclusion

The importance of information and communication technology to librarians in the twenty-first century has been recognized. However, only in the academic sector (University/college libraresa) we have seen real evidence that there has been significant investment both in infrastructure and training to support librarians in their new role. Resource sharing networks offer access to potential users vast amount of educational resources as well as to new types of social and political participation. But all of these are merely rhetoric if there is not a strategic development plan to ensure that the infrastructure is in place and the skills to use and manage the technology are developed.

The present scenario has posed major challenges to library and information professionals, whose prime function is to satisfy the complex and increasing demands for information products & services. Time is over, when the librarians and information professionals used to remain satisfied with functions aimed at acquiring, organizing and providing information/ material, only when there was a demand. The profession today is being geared to aim at some thing beyond that. New subjects are emerging continuously and related user demands have been complexed. Nature of demand is being affected by the convergence of multi-dimensional subjects. As such professionals face a lot of problem to satisfy them. To cope with the situation LIS professionals will have to access to enormous amounts of information through online.

No doubt, the convergence of computers and communication technologies has thrown new challenges and opportunities before library and information professionals of universities and colleges. Professionals have to change their role keeping in view the faster rate of growth of information and knowledge that even before. New technology is calling for organisational change in the traditional academic library. This period of transition demands that academic librarians develop a new understanding and expectation of working in the digital environment.

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Semantic Web: How Does it Work?

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ABSTRACT

This paper made an attempt to trace out the basics of Semantic Web. The more importance given in this paper is that how the semantic Web will function and basic elements and construct related with it. At the end of the paper steps in build up the Semantic Web have been presented.

Keywords: Semantic Web, WWW Consortium, RDF, and Notation.

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Understanding Knowledge Sharing in Changing Context of Digital Environment: A Systematic Approach

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ABSTARCT

Knowledge is widely recognized as a critical organizational resources 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. We are now shifting from information society to knowledge-based society, where we are not so much bothering about the visible or tangible information but deeply thinking about intangible information i.e. knowledge. In this knowledge-based society the main strategic resources are knowledge. And knowledge is the fuel, which is driving today the technology, economy, and the society itself. In this changing context there must have systematic way to capture, process, store and ultimately share knowledge for the development of an organization as well as society. Present Paper attempt to highlight the principles, efforts and barriers of knowledge sharing in Digital Environment

Keywords: Knowledge, Knowledge Sharing, Knowledge Sharing Efforts, KQML, KIF, Knowledge Management

Introduction

Knowledge is defined variously as (i) facts, information, and skills acquired by a person through experience or education; the theoretical or practical understanding of a subject, (ii) what is known in a particular field or in total; facts and information or (iii) awareness or familiarity gained by experience of a fact or situation. Philosophical debates in general start with Plato's formulation of knowledge as "justified true belief". There is however no single agreed definition of knowledge

presently, nor any prospect of one, and there remain numerous competing theories.There are different types of knowledge available in an organization, which required to be shared. Before managing we have to understand the categories of knowledge. These are as follows:

1) **Explicit knowledge:** Explicit knowledge is what we encounter in books, formulas, and rules and can easily pass along from one person to another. Conventional knowledge gathering and learning techniques are geared towards this type of knowledge. It is crisp and factual and can be encoded into operating procedures and guidelines. These are traditional form of knowledge and are available in the documented form. It is also called declarative or sequential knowledge.

2) **Tacit knowledge:** In real-world we encounter a different type of knowledge, tacit knowledge. This knowledge is the know-how gained through years of on-the-job experiential learning by experts in the field. It is usually acquired by hit-and trial and by observing episodes from a diverse set of experiences. It is also acquired by apprenticeship under more seasoned experts. Unlike explicit knowledge, tacit knowledge is not easy to capture, quantify. This is a type of personal knowledge, which is in human brain, which is hard to formalize and is often too difficult to communicate and manage. This type of knowledge is very much important in knowledge sharing process.

   Tacit knowledge is an art-form. Yet, it is practiced by many professionals: doctors, lawyers, engineers, plant-operators; and at all levels: operational, tactical, and strategic. When these tacit-knowledge workers leave, employers lose unsaid amounts of intellectual capital. When knowledge engineering methods, which are meant for explicit knowledge elicitation, capture, and storage, are used for tacit knowledge they are unable to yield results. MindModeler is a tool and method, based on cutting edge research on psychology and artificial intelligence, which overcomes these barriers. It accesses two primary areas of the mind: the semantic memory and the episodic memory and elicits information from them. The semantic memory is the area where we keep knowledge about factors and the relationships between those factors. The episodic memory is that area of the mind where we store information about past instances. The MindModeler takes this information and builds robust mathematical models from it. These models can then be used as representations of the tacit knowledge of expert's expertise. Once computerized, the user interface allows interactive manipulations on these models namely:

- What-if analyses: what will be the outcome of changing multiple causes or stimuli? - a type of simulation
- Goal-seeking: how to achieve a desired objective under constraints?
- Categorizations: What factors behave similarly in the model
- 2-D and 3-D Graphing: What are the relationships of the factors w.r.t. each other over their operating ranges?

From these interactions, sometimes new knowledge is also surfaced which was not apparent to the expert unless he was able to see it in living color in front of him.The tacit knowledge is sometimes called implicit or simultaneous knowledge. The tacit knowledge is of two types:

(i) **Embodied knowledge:** It cannot be detached or separated from its knower, may also exist across a group of people.

(ii) **Embedded knowledge:** It resides in the process/things (e.g. sculpture) created by individuals.

Knowledge sharing is the process of communicating knowledge. It is well defined with the help of the diagram (Fig-1).

Knowledge Sharing: The Real Life Situation

Every company, organisation and centers has somewhat isolated "pockets" of knowledge that are represented by employees throughout the organization's various departments and workgroups. These pockets usually don't stray too far beyond their own small circles. But there may

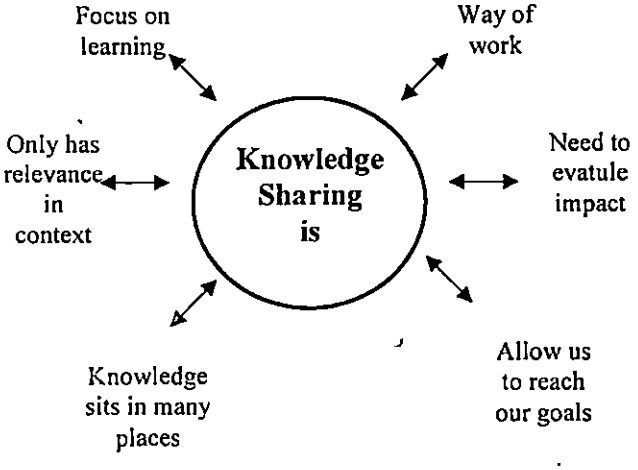


Fig-1: Knowledge sharing

very well be a large portion of the corporate population who will also benefit from this expertise and knowledge — unfortunately; they may never know it exists. Employees from other departments or remote offices could be climbing the walls trying to figure out a problem when the answers already exist from within the organization. And as employees of the same company, you would think that there should be a mechanism for the dissemination of this information. This is where knowledge-sharing systems come into play. Knowledge sharing has always taken place informally and manifests itself in many forms — whether you're aware of it or not. It happens when you pass a colleague in the hallway and asks them their opinion on a problem; when you solicit user feedback on a project or topic; when you're in roundtable meetings with colleagues. Knowledge is passed from mouth to mouth with little permanent record. And when knowledge bearers leave an organization, they take all their expertise with them. The only hope is that they imparted enough of their knowledge onto the remaining staff so that they can continue to carry on this information/knowledge life cycle. Knowledge sharing systems don't have to start from scratch either; the knowledge already exists in the form of the knowledge pockets I mentioned earlier. Developers only need to develop a framework in which to consolidate, manage, and publish all this information. The goal here is to allow an organization to tap into the collective knowledge of its employees in a centralized environment with a distributed model of knowledge management.

Why Sharing Knowledge in Digital Environment

Knowledge is power and sharing it can build even more capability for the person sharing and the organization. Yet, this concept can be a hard sell to those who have been raised on the belief that giving away their knowledge is surrendering their power. The big challenge is to mine the tacit knowledge through providing an access method. The idea behind collaboration is that sharing knowledge leads to the co-creation of new actionable knowledge that leads solution development. The key issue is getting people to think of themselves as part of a larger, collaborative community. However, changing people's behavior doesn't come easily, especially if they've been used to working independently. Today, the creation and application of new knowledge is essential to the survival of almost all businesses. There are many reasons. They include: -

- **Intangible products** - ideas, processes, and information are taking a growing share of global trade from the traditional, tangible goods of the manufacturing economy.
- **New Knowledge**-Increasingly the only sustainable competitive advantage is continuous innovation. In other words the application of new knowledge.

- **Increasing turn over of staff**- People don't take a job for life any more. When someone leaves an organization their knowledge walks out of the door with them.
- **Awareness**-Our problem as an organization is that we don't know what we know". Large global or even small geographically dispersed organizations do not know what they know. Expertise learnt and applied in one part of the organization is not leveraged in another.
- **Accelerating change** - technology, business and social. As things change so does our knowledge base erode – in some businesses, as much of 50% of what you knew 5 years ago is probably obsolete today.

Knowledge Sharing Vs Knowledge Management : Where We are Going

Many practitioners of knowledge management increasingly see "knowledge sharing" as a better description of what they are about than "knowledge management". Advantages of "knowledge sharing" as a term include its commonsense comprehensibility, along with a certain degree of inter-activity implicit in any sharing. Drawbacks of "knowledge sharing" include the possibility that even "sharing" is insufficiently interactive, and that it implies (falsely) that the existence of knowledge precedes the sharing process, thereby (wrongly) separating knowledge management from "knowledge creation" and "innovation" and "research". It also could be taken to imply that the activity stops when knowledge has been communicated and has not yet been applied, when it is obvious that the application of knowledge is what the activity should be about. These drawbacks can be overcome by using a whole phrase "knowledge creation, sharing and application" although then the advantages of brevity and simplicity are lost. As a shorthand term, "knowledge sharing" has advantages over "knowledge management" which some would argue is a contradiction in terms, being a hangover from an industrial era when control modes of thinking were dominant. Thus knowledge is not just an explicit tangible "thing", like information, but information combined with experience, context, interpretation and reflection. Knowledge involves the full person, integrating the elements of both thinking and feeling. Hence some object to the implicit suggestion in the use of the term "knowledge management" that knowledge can be so managed, as revealing a fundamental misunderstanding of the nature of knowledge.

Others would prefer to emphasize "learning", since the real challenge in implementing knowledge management is less in the "sending" and more in the "receiving", particularly the processes of sense making,

understanding, and being able to act upon the information available. Overall, whatever the term employed to describe it, knowledge management is increasingly seen, not merely as the latest management fashion, but as signaling the development of a more organic and holistic way of understanding and exploiting the role of knowledge in the processes of managing and doing work, and an authentic guide for individuals and organizations in coping with the increasingly complex and shifting environment of the modern market economy.

Knowledge Sharing : Some Principles

The following list gives an idea of the types of things that have been included in various strategies. Simple statements like these make explicit the types of behaviors that the organization desires. Importantly, such principles must be customized for each setting and they generally work best when co-created rather than delivered from on high. The principles of Knowledge sharing are as follows:

- **Encourage questions**-Encourage people to ask questions, and recognize them when they do. Create opportunities for open and rigorous dialogue that allows assumptions to be explored and debated.
- **Go to the source-** Knowledge deteriorates as it is transmitted through a hierarchy. Wherever possible find the source and have a conversation with them.
- **Share**- Share what you know and help others to learn.
- **Relationships**-Value relationships and understanding between all divisions and invest in the development of these relationships.
- **Have we done this before?-** Build on what has been done rather than creating something from the ground up. Managers should ask, 'have we done this before?' when approached with ideas and issues.
- **Collaborate**-Link up with people outside your area to see if they are doing something your area can use. Form teams to collaborate on projects/tasks.
- **Value diversity**- Get new ideas and fresh perspectives into play. Teams work best when the people within them are diverse in both background and approach.
- **Synthesize**-Try to combine ideas from different fields.
- **Be approachable**- Approachability and accessibility have major impacts on knowledge sharing and communication. All staff, especially senior managers, need to be approachable and ensure all staff have the context they need to be successful in their roles.

- **Learn**- Learn before, learn during and learn after. Take time to reflect on what's happened and discuss this with your colleagues. Learn from experience Help others learn and grow. View mistakes and near misses as learning opportunities.
- **Be a team player**- Promote cooperation and trust; participate openly and actively in team projects, task forces and networks; uphold the team's ideas and proposals. Bring credit on yourself by acknowledging the contribution of others.
- **Empathize**- Consider things from the perspective of others. When you communicate, remember that people look at events in different ways and the value of your message is determined by the receiver, not by the sender.
- **Not only information**-We are talking about sharing knowledge and information – not just information.
- **Business Objective**-The purpose of knowledge sharing is to help an organization as a whole to meet its business objectives. We are not doing it for its own sake.
- **Productive**-Learning to make knowledge productive is as important if not more important than sharing knowledge.
- **Culture**-Changing a culture is tough. Not only does it mean change – which has always been tough – it means seeing the world in a different way. It means revealing our hidden paradigms like the tacit acceptance that "knowledge is power".

The Knowledge Cycle

In traditional organizations, knowledge tends to flow along organizational lines, from the top down. But that pattern seldom results in making knowledge available in a timely fashion and where it's needed the most. In organizations with managed knowledge, information can flow across organizational lines, reaching the people who can use it in ways that best promote the organization's goals and that enhance service to the customer at the same time.

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How this happens can be understood by examining the four basic elements of the knowledge management cycle: find/create, organize, share, and use/reuse. Under "find/create," especially as it operates in a transportation organization, knowledge is gained through a variety of means, including publications, conferences and meetings, project experiences, research, and industry expertise. In the next step in the cycle, "organize," the knowledge is filtered and catalogued, and links to the outside are created. Then the information is shared for wide availability, making use of high-tech computer tools such as the Internet and other techniques such as conferences, journal articles, and the natural communication channels created in a collaborative work environment.

To help carry out the "organize" and "share" functions in a specific community of people having a common interest, many experts recommend a knowledge manager. This person has the task of soliciting good practices, indexing and cataloguing new information as it comes in, and serving as an information broker by assisting people to obtain the information they need. The knowledge manager can also serve as an advocate for knowledge-sharing practices within and beyond his or her specific community of practice.

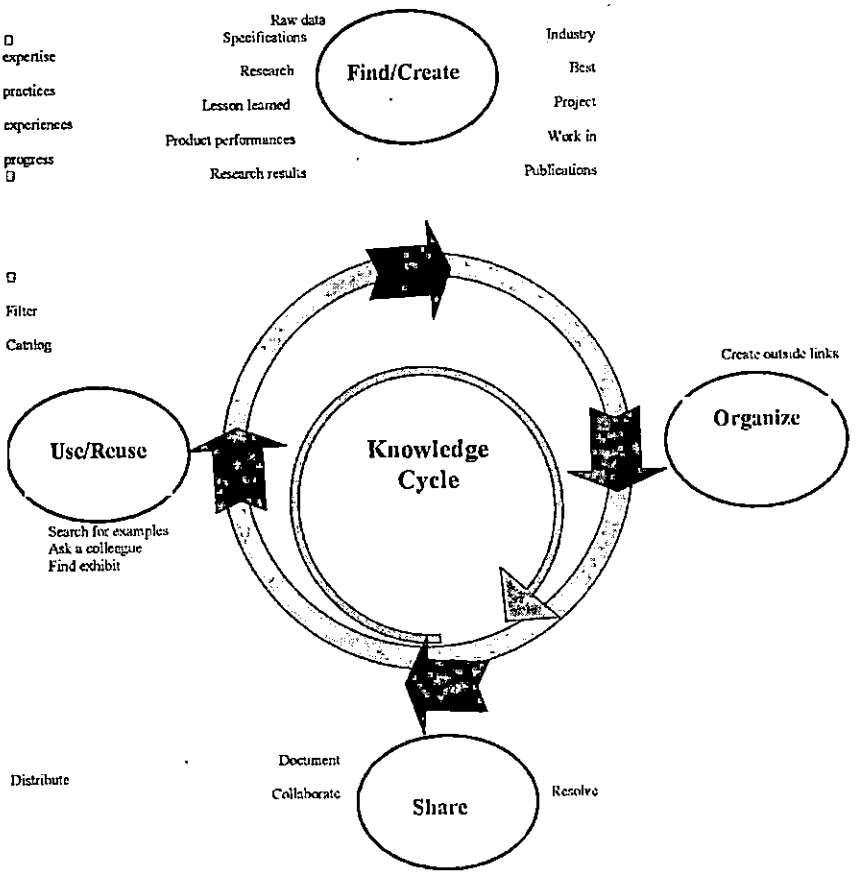


Fig-2: Cycle of knowledge

The final stage of the knowledge management cycle, "use/reuse," involves both informal contacts and access to reports, good practices, success stories, and other forms of communication, including exhibits, demonstrations, and training sessions. Much of this knowledge can be made available to a wide audience through the Internet. This is the step in which knowledge is applied and reapplied to solve real-world issues, such as building better bridges, operating roadways more efficiently, and improving highway safety. Of course, these results are then captured as part of the lessons learned for use as the knowledge cycle begins again.

The Role of ICT in Knowledge Sharing

Some people will argue that you do not need technology to implement a Knowledge Management programme. To some extent they are right - Knowledge Management is fundamentally about people – not

technology. But it is also true that there is absolutely no way that you can share knowledge effectively within an organization – even a small one, never mind a large geographically dispersed one without using information and communication technology. Technology plays a crucial transformational role and is a key part of changing the corporate culture to knowledge sharing one. In many ways it is technology that has made knowledge sharing a reality – in the past it was impossible to share knowledge or work collaboratively with co-workers around the globe. Today it is a reality. Information audit can effectively be done with the help of modern technology. Technology is not all good however. If implemented well and if people are trained and educated in its use, knowledge sharing technology is good. Not only can you find the information and knowledge you need quickly and effectively but you can post your knowledge on the system for access by others in the organization - be they at the next desk or on the other side of the world. Building new knowledge-based systems today usually entails constructing new knowledge bases from scratch. It could instead be done by assembling reusable components. System developers would then only need to worry about creating the specialized knowledge.This new system would interoperate with existing systems, using them to perform some of its reasoning. In this way, declarative knowledge, problem- solving techniques, and reasoning services could all be shared among systems.

The Knowledge Sharing Effort (KSE)

The **Knowledge Sharing Effort** (KSE) was initiated in 1990 by the Defense Advanced Research Projects Agency, an agency of the United States Department of Defense. It enjoyed the participation of dozens of researchers from both academia and industry. Its goal was to develop techniques, methodologies and software tools for knowledge sharing and knowledge reuse, at design, implementation, or execution time. The central concept of the KSE was that knowledge sharing requires communication, which in turn, requires a common language; the KSE focused on defining that common language. In the KSE model, software systems are viewed as (virtual) knowledge bases that exchange propositions using a language that expresses various complex attitudes (e.g., believing, asserting, wondering, desiring, etc.) about these propositions. The ARPA-sponsored Knowledge Sharing Effort is developing methodology and software for the sharing and reuse of knowledge. Much of this is very relevant for building agent-based systems, such as:

KQML -- Knowledge Query and Manipulation Language

KQML is a language and protocol for exchanging information and knowledge. KQML can be used as a language for an application program to interact with an intelligent system or for two or more intelligent

systems to share knowledge in support of cooperative problem solving. It focuses on an extensible set of performatives, which defines the permissible operations that agents may attempt on each other's knowledge and goal stores. The performatives comprise a substrate on which to develop higher-level models of inter-agent interaction such as contract nets and negotiation. In addition, KQML provides a basic architecture for knowledge sharing through a special class of agent called communication facilitators which coordinate the interactions of other agents The ideas which underlie the evolving design of KQML are currently being explored through experimental prototype systems which are being used to support several test beds in such areas as concurrent engineering, intelligent design and intelligent planning and scheduling.

KIF -- Knowledge Interchange Format

Knowledge Interchange Format (KIF) is a computer-oriented language for the interchange of knowledge among disparate programs. It has declarative semantics it is logically comprehensive. it provides for the representation of knowledge about the representation of knowledge; it provides for the representation of nonmonotonic reasoning rules; and it provides for the definition of objects, functions, and relations.

Factor Affecting Knowledge Sharing Process

In the knowledge sharing process, there may possibly be three types of barriers. These are individual, organizational and technological. The different barriers are listed below.

Individual knowledge sharing barriers

- **Lack of time**-general lack of time to share knowledge, and time to identify colleagues in need of specific knowledge;
- **Fear**-apprehension of fear that sharing may reduce or jeopardize people's job security;
- **Awareness**-low awareness and realization of the value and benefit of possessed knowledge to others;
- **Domination**-dominance in sharing explicit over tacit knowledge such as know-how and experience that requires hands-on learning, observation, dialogue and interactive problem solving;
- **Usability**-use of strong hierarchy, position-based status, and formal power
- **Past mistake**-insufficient capture, evaluation, feedback, communication, and tolerance of past mistakes that would enhance individual and organizational learning effects;
- **Experience**-differences in experience levels;

- **Time**-lack of contact time and interaction between knowledge sources and recipients;
- **Communication**-poor verbal/written communication and interpersonal skills;
- **Age**-age differences;
- **Gender**-gender differences;
- **Social application**-lack of social network;
- **Education**-differences in education levels;
- **Ownership**-taking ownership of intellectual property due to fear of not receiving just recognition and accreditation from managers and colleagues;
- **People**-lack of trust in people because they misuse knowledge or take unjust credit for it;
- **Accuracy**-lack of trust in the accuracy and credibility of knowledge due to the source; and
- **Cultural differences**-differences in national culture or ethnic background; and values and beliefs associated with it (language is part of this).

Organisational Knowledge Sharing barriers

- **Integration of KM strategy and sharing initiatives** into the company's goals and strategic approach is missing or unclear;
- **Lack of leadership** and managerial direction in terms of clearly communicating the benefits and values of knowledge sharing practices;
- **Shortage of formal and informal spaces** to share, reflect and generate (new) knowledge;
- **Lack of transparent rewards** and recognition systems that would motivate people to share more of their knowledge;
- **Existing corporate culture** does not provide sufficient support for sharing practices;
- **Deficiency of company** resources that would provide adequate sharing opportunities;
- **External competitiveness** within business units or functional areas and between subsidiaries can be high .

- **Communication and knowledge flows** are restricted into certain directions (e.g. top-down);
- **Physical work environment** and layout of work areas restrict effect sharing practices;
- **Internal competitiveness** within business units, functional areas, and subsidiaries can be high;
- **Hierarchical organization** structure inhibits or slows down most sharing practices; and
- **Size of business** units often is not small enough and unmanageable to enhance contact and facilitate ease of sharing.

Technological knowledge sharing barriers

- **Lack of integration of IT systems** and processes impedes on the way people do things;
- **Lack of technical support** (internal and external) and immediate maintenance of integrated IT systems obstructs work routines and communication flows;
- **Unrealistic expectations of employees** as to what technology can do and cannot do;
- **Lack of compatibility** between diverse IT systems and processes;
- **Mismatch** between individuals' need requirements and integrated IT systems and processes restrict sharing practices;
- **Reluctance to use IT systems** due to lack of familiarity and experience with them;
- **Lack of training** regarding employee familiarization of new IT systems and processes; and
- **Lack of communication** and demonstration of all advantages of any new system over existing ones.

Conclusion

Knowledge sharing is the ultimate aim of knowledge management work. But question is there- why should people give up their hard-won knowledge, when it is one of their key sources of personal advantage? In some organizations, sharing is natural. In others the old dictum "knowledge is power" reigns. In practical field it is observed that knowledgeable people do like to share their expertise - just listen to them in the bar after work. It's just something about their work environment that discourages this natural inclination. Understanding these barriers and

individual motivations is the first step towards creating knowledge sharing environment. How can we overcome such barriers? Certainly address the issues of organizational structure and inadequate technology. But focus will be given to the three Cs of Culture, Co-opetition (a blend of co-ooperation and competition), and Commitment. The knowledge can not be share but what situation we are working that can be share.

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University Library web pages are the promoter and marketing channel for development of lifelong learning process

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ABSTRACT

The author focused the University Library's web page as a promoter and marketing channel through which the end users can get the information through online databases, subject gateways, products and services, Research Projects, useful linking to the resources available on net. Out of total 234 universities including Agricultural, Deemed, IIT's and Law Schools 71 universities were selected for the study affiliated to UGC and specifically provided links on Internet. Library web pages were explored to study the linking provided by the Universities.

Introduction

Lifelong learning is the concept that "It's never too soon or too late for learning", a philosophy that has taken root in a whole host of different organisations. Lifelong learning is attitudinal; that one can and should be open to new ideas, decisions, skills or behaviors. Lifelong learning throws the axiom "You can't teach an old dog new tricks" out the door. Lifelong learning sees citizens provided with learning opportunities at all ages and in numerous contexts: at work, at home and through leisure activities, not just through formal channels such as school and higher education. Lifelong learning is the final outcome of Information Literacy.

A Web page or webpage is a resource of information that is suitable for the World Wide Web and can be accessed through a web browser. This information is usually in HTML or XHTML format, and may provide navigation to other web pages via hypertext links. Marketing is a social process which satisfies consumers' wants. The term includes advertising, distribution and selling of a product or service. It is also concerned with

anticipating the customers' future needs and wants, often through market research.

The evaluation of website or web pages is based on the assumptions that website developer is aware of the needs of their user communities and that this knowledge is used in the planning and design of website. Therefore, researcher expects to find a majority of new information providers and services, establishing the websites or web pages as an important gateway to knowledge. Technology for creating a website is relatively inexpensive and easily learned. Access to this information is worldwide, instantaneous, and increasingly available to more and more individuals. In the library context, web page can be used as a strategic tool to improve awareness, distribute and disseminate digital products and services, and it is a communicational channel to increase and retain relationship with users. Lifelong learning is assisted with the web page as it bridges the learner and the library.

Market and Potential Market of a University Library

The market of the University library consists of various segments;

a. Academic staff members, who engage in teaching of various subject disciplines, conduct research and maintain scholarly projects to develop their respective profession.

b. Undergraduates, postgraduate students and their students study in various courses conducted by the university.

c. Nonacademic staff

d. Other people such as researchers, professionals, school children and general public outside the university.

Needs, Wants and Demand

Needs, wants and demand of the library are centered on

a. academic and educational requirements such as bibliographic information, textbooks, full text in digital formats, reference and reading space, information consultancy and facilities for learning environment.

b. Information related to researches and inventions

c. Tools and facilities for entertainment, leisure and social activities.

d. Information required for day-to-day life such as finding opportunities, know-how technology and community information.

Strengths and Opportunities of University Libraries

a. Availability of resources collections covering various disciplines practiced in the university.

b. Availability of professional staff with different subject areas and the paraprofessional staff to help with the dissemination of desired information.

c. Possibility of obtaining funds under comprehensive project proposals.

d. Infrastructure facilities and links with expertise.

e. Information skills of the staff.

Possible Strategic Applications to Retain the Community as Lifelong Learners

a. Increase the resource collection with relevancy and quality of content to meet the demand of the focused group.

b. Increase the access to resources through catalogue, full-text databases and other means of technology

c. Establish timely, active and comprehensive reference services

d. Facilitate with community information services focused on university community as well as out side people.

e. Enhance e-access facilities to reach the library.

f. Create environment to make the library as a regular part of the community. Implement full time libraries open 24 hours. Extend services targeting specific segments such as disabilities.

g. Establish outreach programme such as adult education, family education, skills development workshops, homework club, literary circle etc. in collaboration with other departments of the university.

h. Apply innovative ICT in the production, distribution and promotion process of the library.

i. Improve awareness through various tools and means target on different segments programmes and other promotional activities.

j. Extension of e-marketing.

Objective

The allied objectives were as follow:

1. To study the university web pages providing main links.
2. To study the hyperlinks providing information.

3. To focus on the library link providing the information about the sources and services.
4. To highlight the information regarding the e-journals, online journals and consortia
5. To study the useful links provided on he web pages related to the resources on the net.
6. To study the partnership of the university with the academicians, industrialists, practicing managers and administrators to participate in discussion and help on various emerging issues besides identification of thrust areas for joint programmes of Research and development between industries and universities.

Scope & Method of the study:
There were total 234 universities including Agricultural, Deemed, IIT's and Law Schools. Out of which only 71 universities were selected for the study affiliated to UGC and specifically provided links on Internet. Library web pages were explored to study the linking provided by the library.

Availability of the following factors in the web pages was explored in this paper:

a. General information regarding the respective library such as mission, objectives, contact details, policy, procedures etc.
b. Products of the library such e-catalogue, e-publications, bulletins, digital archives, full text papers, databases, free access facilities, downloading, registration for free services.
c. Promotional strategies such as newsletters, coupons, advertisements.
d. Skills development programmes and training
e. Innovations
f. Reference services and facilities to information communication through Live-Chat, e-mail conversations, e-conference and other techniques.
g. Referral services and links to other resources such as link to other Homepages, subject gateways, databases, e-courses, intermediary support etc.
h. Out reach programmes and focused products viz. Adult education, services for disabilities, homework club, family education, entertainment and skills development.
i. Customer retention though feedback, negotiations, suggestions etc.

j. Technical support such as software download, font, trouble shooting etc.

k. Aesthetic presence of the site.

Findings and Conclusion

1. All university libraries had included general information such as University & Campuses, Academic departments, Administration Departments and services, Mission, objectives, contact details, history, procedures, courses offered, affiliated colleges, Library, University publications, employment information, News announcement and FAQ etc in their homepage.
2. Almost of university libraries have recognised that the Online Public Access Catalogue was the main important, few provided access to the Ph.D. theses database.
3. Majority of the libraries has facilitated with access to E-journals and databases obtained through Consortia.
4. Format of information was mainly centered on text base. Majority of pages maintained in a single text file with hyperlinks to access points in the page.
5. Most of the libraries web pages contain OPAC.
6. Most of the libraries web pages provided links to the commercial Subject gateways. Not a single University library tried to provide the subject gateways prepared by their own subject experts.
7. Though the link of e-journals and online journals are provided, but it is limited to their own users and in their campus.
8. UGC and other funding agencies provide the funds for conducting Major Research Projects and Minor Research projects but these projects are not accessible to the end users.
9. Link to the Institutional Repository found absent, which is important as the university libraries has potential in the form of faculty members, research scholars and archives and ample of material in e-format.
10. Few University Libraries provides access to the useful resources on the net and Open J-gate service.

Web page can be used as a strategic tool to improve awareness, distribute and disseminate digital products and services, and it is a communicational channel to increase and retain relationship with users. Lifelong learning is assisted with the web page as it bridges the learner and the library.

University Libraries should provide the links of Institutional Repositories, which will provide services to faculty, researchers, and administrators who want to archive research, historic, and creative materials. The open access and open archives movement, the need for changes in scholarly communication to remove barriers to access, and the increasing awareness that universities and research institutions are losing valuable digital and print materials have begun driving the establishment of institutional repositories.

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Brains Business in Libraries World

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ABSTRACT

In this customer era, Brain Business has major significance in the Libraries World, because of its economic value. Information is an intellectual asset, social need and recognized as an international commodity. Modern organizations are adopting the knowledge based management change for the value added products/services. Marketing of information is encompassed with multilayer phased manner process. In this competitive world Marketing of information system dances to the tune of the customers. The success of the brains business depends upon the customer satisfaction and modern marketing of information approaches. Therefore, information marketing manager should be act as "think liking a customer and act like an owner" for cope with the tune of the customers

Key Words: Customer satisfaction, customer care, marketing strategies, marketing mix and Profit in Loss.

Introduction

In this Customer Era, Society is shifted form the industrial based to knowledge based economy. Every man and organization needs and used information in the daily activities in one way or another way. So, information is a fifth one of the basic needs and strategic resource for better living and quality development of the society.

Information is recognized as a commodity and wealth of the Nation. Information has major significance with its economic value like traditional assets such as land, money, machines etc., in the socio-economic and political development of the Nations. Knowledge based library organizations are recognized as information industries and

information is a major product/service. Marketing of information system of the information industries is dances to the tune of the customers, therefore, there is a need to develop the customer driven marketing system

In this direction, Brains Business of libraries is change into "information global village" through connecting the world Brains with the Brains Networks and leads to develop the knowledge based society. Brains Business is a marketing of information function and encompassed with multilayer process in a phased manner.
Success of the Brains Business in the libraries world is depends upon the customer satisfaction, application of modern marketing approaches and ability of information marketing manager.

Information Industries:
Information Industries may be individual or organizations with profit or non profit motive. Libraries are marketing their products/services through designing service packages and software programmes. The word Information Industries consist of two elements such as information and industries.

Information:
Information is a processed data and intangible asset. Basically, knowledge may be categorized as:

- **Tacit knowledge:** Tacit knowledge is an informal, personal or individual. knowledge gained with experience and observations.
- **Explicit knowledge:** is a formal and codified.

Industries

Information organizations are recognized as industries and they may be individual or organizations. Information is a major input having with lion share. Information industries are as follows:

- Publishers
- Professional Consultants
- Information Brokers
- Educational Institutions
- Broad Casting
- Telecommunication
- Film Industries
- Data Banks

- Libraries
- Translation Centers
- Reprographic Centers
- Network Agencies etc.,

Information Distributed Channels

Information is transferable thorough multi dimensional channels to the end users. The major information channels are as follows:

- News papers
- Broad Casting agencies
- Telecasting industries
- Network agencies
- Libraries
- Off line channel and
- Online channel etc.,

Brains Business

Marketing of Information is a function of libraries with multilayer process and phased manner. Success of the information marketing is depends upon the customer satisfaction. In this regard, libraries should be focus towards design and develop of the customer driven marketing systems and approaches.

According to Kotalr "Marketing is a process of planning and executing the conception, pricing, promotion and distribution of goods/services and ideas to create exchanges with target groups the satisfy customer and organizational objectives.

Marketing Objectives:

Formulation of objectives is one of the major elements of the information marketing. It should be consider the users needs and value of information for achieving the organizational tasks and satisfy the customers in a better way. Typical objectives are as follows:

- To identity and satisfy the customers.
- To retain the customers
- To capture the new customer
- To maintain and develop the customers relations
- To mobilize the financial resources

- To safe guard the interest and benefits of the stake holders
- To improve the image of the organization
- To develop the knowledge based society organization

Types of Marketing:

Marketing may broadly categorize into two types:

Geographical limitations

According to geographical limitations market may be categorized domestic (India) and global marketing.

Information product/service seekers

According to information seekers market may be categorized into internal and external marketing. Library staff is treated as internal customers; they are need for marketing orientation and sales of products/services. Internal marketing consists of appropriate programmes and mechanisms, which is need to develop the productivity ,competency and good relations with external customer(end users) for effective marketing. The external marketing is promoting, customer care, customer relation customer audit etc.

Challenges and Problems:

Marketing of information is a complex function influenced by various internal and external variables. The internal and external forces are controllable and uncontrollable variables respectively. Before marketing planning, there is need to identify the same for make use of opportunities for effective information marketing.

External Variables:

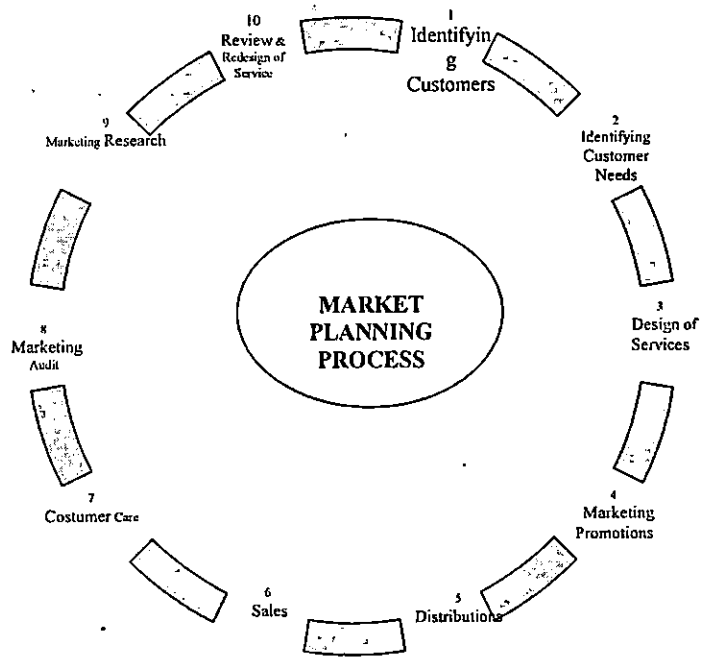
- Socio-economic and political (SEP)
- Information and communication technology (ICT)
- Liberalization , privatization and globalization (LPG)
- Regulatory authorities
- Information explosion
- Escalating of information prices
- Changing the needs of the customers
- Changing the forms of the information
- Language barriers
- Geographical limitations
- Private lending sectors
- Customer culture
- Competitors

Internal Variables:

- Lack of marketing knowledge
- Lack of competency
- Lack of training
- Financial constrains

Marketing Planning

Marketing Plan is a blue print for the marketing activates of an organization for specified future period of time. Marketing planning process consist of multilayer with phased manner.



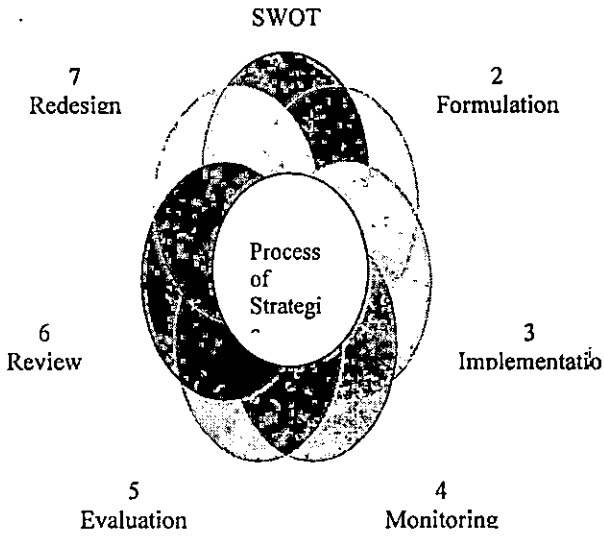
The below factors **"3C"** should be considered for designing the effective marketing plan.

- Customer: Customer orientation, customer care, customer relation and customer audit
- Commodity: Commodity price quality and brand image
- Competitor: In house and outhouse competitor

Marketing Strategies:

Strategy is a universal, dynamic and double edged sharpen powerful tool to proactive the marketing management system. Strategies are group of ideas or plans and helpful to improve the marketing performance in a most economic way.

Strategic Marketing Planning Process



Internal Marketing Strategies:

- Creating good working environment
- Marketing orientation
- Developing the competency
- Empowering the front line staff
- Provide ICT facilities
- Timely allocation resources
- To develop the integrated communication system

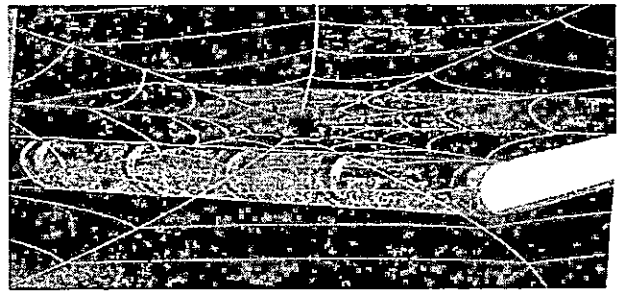
External Marketing strategies:

- Information pollution control
- Tie up with network Agencies
- Design the tailor made services
- Website creation
- Developed network based services
- Provide adequate information services
- Strong distribution networks
- Web based marketing services
- Providing internet facilities

Modern Marketing Approaches:

In the changing marketing environment, modern libraries should be change their marketing approaches for improve the performance in terms of Customer satisfaction, Customer value, safe guard the interest and benefits of the stake holders and image of the library organizations through the application of drivers such as ICT, Marketing Mix, Economic theory Strategic and philosophical approaches and used the control devices such as steering control, phase control etc.

ICT driven Marketing Approach:



- **Web based information services:** In this people knowledge society information is scattered through out the world. Web based information network is only the tool to connect the world minds for brains business.
- **Intranet and internet facilities:** private lending information centers are major competitors in this modern electronic information age. So, libraries should be consider the survival and development strategies towards establishment of intranet and internet, both are powerful electronic devices, which are break down the geographical limitations and connect the information seekers with a single wire.

  Intranet is helpful for the internal customer marketing information resources and Internet is helpful for marketing the information at the corner and remote areas of the society.
- **ICT communication:** communication systems such as E- mail and Response of voice system are effective drivers to develop the customer relation and speedy service at the customer desks.
- **To develop adequate retrieval techniques:** web based search techniques should adopted for the effective information marketing.
- **Website of the organization:** Libraries won website will create the electronic marketing for their information products/services.

Strategic Driven Marketing Approaches:

- **To promote Mahavitharan programme:** Strongly and highly integrated distribution units (departmental libraries) change the customers from unit information customers to universal information customer. This leads to speedy and effective services to the customers on time.
- **Icon:** Icon is a symbol, which is most effective device for improve the brand image create the unique identification of the information product/service in the customers market.

Customer Driven Marketing Approach:

- **Marketing Ambassadors:** Customers are the real marketing ambassadors for information product/services in the market through **"Mouth to Mouth"** and **"Heart to Heart"** drivers, which is most effective than advertisement and electronic media. So, there should be take care for motivated the customers towards achieve the task.
- **Customer Service before and after sales:** Customer service before and after sales improve customer satisfaction and retain.
- **Customer Supplementary Values:** Customers are usually expected the supplementary values other than regular information services. This is most effective marketing strategy. So, libraries should effort to provide the supplementary values as follows:
  Security Measures: for the customers and their belongings
  Amenities: such as drinking water, toilet and other facilities
- **Own Marketing environment:** In this competitive world, libraries should be rethink and effort towards create the own marketing environment through developing of unique identified and different form the other libraries product/ service packages.

Philosophical Driven Marketing Approach:

Philosophical driven marketing approach develops the customer faith and confidence on the organization and its service; and leads the long term profits to the organization. The philosophical approach prefers the long run survival and development of the organization in the market with the driven of **"Loss in profit"**. Example if libraries replaced by the good product/service for the defective product/service leads loss to the organization presently. But it develops faith on the organization and its products for the long time. So, it is leads retain the customers and future profits.

Marketing Mix:

Marketing mix is a traditional concept and powerful approach for determine the price and price value of the services. Fantastic 4Ps and

extended 3Ps are the elements of the marketing mix. Blending of marketing mix enable the organization for satisfy the customers with customer value products/services. 4Ps are product, price, place, promotion; and extended 3Ps are people, place and physical evidence.

Economic theory (demand & supply):
Economic theory of demand and supply determines price of product/service and it is helpful for the equilibrium of demand and supply of services in the customer market.

Borderless Brains Marketing:
Borderless Brain Business is a complex one. In this Present days, the Single Borderless Brain can function and sharing of its information at the two work places at a time with the help of information and communication technology. So ICT is a strategic tool in the marketing of information. The following factors should be considered for the success of borderless brains business.

- Customers Culture of the world people
- Customers local needs
- Customers behavior and
- Customer's traditions.

So, Borderless Brains Business people should be **"Global thinking and local acting"**

Ethical and Social Marketing:
Ethical values create the healthy information marketing environment; ethical values are social culture, best practices and fair marketing culture etc. Information industries are having social responsibilities for develop the people's knowledge society. In this regard, as a social organization libraries should effort to make free flow of information for the development of people's society. **"Where knowledge is free- there is development" Green Marketing:** Modern Libraries should be involve in the people's knowledge society for ecological safety through knowledge empowerment and awareness about environment, health and education etc,

Information Marketing Manager:
Success of the brains business is depends up on the customer satisfaction, customer relation, customer care, Customer retention, modern marketing approaches and ability of Information Marketing Manager. So, information marketing manager should be **"thinking like a customer and act like an owner"**; and able to audit the customer needs and recommend for the design of need and value based service packages.

Conclusion

Brains Business is a buzzword. Libraries are distributed the right information to the right users in the real time through multi dimensional marketing channels, which leads to change the people's knowledge marketing world such as "Unit Information Customer to Universal Information Customer" marketing and enables the libraries economically sound for survival and development in this competitive world.

National Knowledge Commission having major significance in the development of knowledge based society. Therefore, encouragement and support is needed for the formulation of fair marketing regulations for the bright brains business.

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Distance Education: New Technologies and E-Learning Trends

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ABSTRACT

Web-based learning, e-learning and teaching is rapidly growing area in education. Traditional forms of Distance Education are being transformed as the Internet becomes the new medium for communication. E-learning course delivery can offer a vibrant learning environment created through different teaching strategies, activities, and technologies. This paper briefly outlines some of the literature relevant to this new educational milieu providing insight into the planning issues in Distance Education, use of technology, new learning trends, and design of web-based learning. This paper also describes the developments and experimentation of institutions on e-learning concepts, activities, issues, and challenges and also suggests financial support to the experimentation of e-learning partnerships, strengthening infrastructure etc.

Keywords: Distance Education, e-learning.

Introduction

Education is the pre-requisite for all-round development of any Nation. Educational objectives are to be emphasized in any form of education. Education should liberate people from bondage, ignorance, and backwardness; Education should aim at developing a new type of humanity highly humane, cultured and integrated; Education should be a harmonizing force to relate the individual, environment and cosmos in a total harmony; Education should be a powerful carrier of the best of the heritage and it should aim at transmitting to the new generations the

lessons of the accumulated experiences of the past for further progress in the present and the future.

Every program requires for its implementation highly educated, trained with skills and motivated personnel. The Education Policy of any Country need to emphasis on inclusiveness of its entire population with extension of Distance Education, people living in remote rural areas, where several of them cannot afford to get enrolled in regular institutions in the towns and cities. Distance Education also enables those who do not posses formal requisite qualification to receive further education. Further, Distance education mode provides an opportunity to learn while earn. Distance Education should focus towards reaching to the un-reached and education to the doorsteps of general public. The left outs, socially under-privileged, physically handicapped and dropouts immensely benefit from facilities offered by Distance Education. Under this system a student is free to study at his or her own pace, style and convenience.

Distance Education

Distance education is strategic to the 21st century Education System. While the first and second generations of Distance Education were delivered through print and broadcast media, the third generation of Distance Education requires interactivity. Interactive technologies from the convergence of telecommunications and computers span distance but also shorten time.

Distance Education provides students with access, independent of place and/or time, to learning programs and resources, including interaction among faculty and students, through synchronous and/or asynchronous technologies. This asynchronous interaction is rapidly becoming an integral extension of the face-to-face classroom. So distance education can now be viewed as "connected education" that stretches from the campuses around the world.

A higher education institution is not a 21st century organization that can respond quickly or serve lifelong learners with a high degree of flexibility. The work demands relevant, accessible education, and the institutions that are willing to reach out to new markets and a new generation of learners will be successful in coming years. While campus-based education will continue to be the first choice but at some period in students' lives, these same individuals may opt for distance learning alternatives as part of life long learning.

The Higher Education sector looks to the Open University System world over along with the regular Universities to lead the way in progressing

distance education in the digital age. The Universities' policies should cover sharing its best practices to involve in different types of collaborations.

Planning Issues in Distance Education

A number of issues need to be addressed regardless of the model of distance education that is adopted in the Universities.

Logistic issues

- When setting up a system for distributing learning materials, it is critical that all students are treated equally. Students must have the materials they need to complete assignments, to participate in group or class sessions and to benefit from instructor feedback.
- This support may be achieved with one or a combination of the following: courier, overnight delivery, express mail, and electronic file transfer. Students should always keep a copy of the assignments they complete, such as papers or projects.
- If faculty chooses to give written examinations, students will need access to an examination site. The designated Coordinators check student photo IDs to verify the identity of the test-taker and monitor the process to ensure that the same conditions apply in all locations.
- Security of examinations is an issue from the time each examination paper leaves the instructor's hands until it is delivered back to the instructor for evaluation. Before and after the examinations are conducted, they should be handled only by authorized personnel.

Student Support Service

- Students who do not come to the campus need access to academic advising services. Student contact with trained academic advisors is crucial because both the students. The institution need to be careful that information given to students is appropriate and accurate.
- There must be easily accessible, authoritative sources of information about nonacademic matters. Students should be informed as to whom to contact about specific types of questions or concerns.
- Faculty members have office hours during which time they are available to discuss with individual students. A mechanism must be identified to enable the off-campus students to contact faculty members.
- Traditional course delivery method has easy access to campus-based resources such as library holdings, science laboratories,

and computer software and hardware. In Distance Education, it is essential that faculty and administrators work together to think about students, who may not have ready access to all the campus-based resources.

Faculty involvement

- Faculty members are likely to be more effective if they understand their role properly in Distance Education. They need to know the capabilities of the technologies available to them to enable them to use these tools effectively to meet their instructional objectives.
- Orientation and training should be scheduled well in advance of the beginning of the semester to give faculty sufficient time to redesign, modify, or adapt their courses and assignments for the new delivery mode.
- Traditional higher education institutions have few built-in incentives to encourage faculty to become involved in distance education activities. Institutions should establish some faculty incentives that recognize the additional time faculty may spend in training and in planning an effective distance education course.
- To adapt their courses to new modes of delivery, faculty may benefit from having access to a variety of resources. Types of support might include instructional design, video production, graphics production, access to authoring tools, and other computer-based resources.
- The recruitment and selection of good distance education faculty is critical to the success of the program. Faculties who volunteer to participate in new modes of delivery are usually more successful and also experience greater satisfaction.

Evaluation issues

- The faculty evaluation form needs to be modified to cover useful information about faculty effectiveness in a distance education environment. Information about personal characteristics of successful instructors should be included into future planning and hiring decisions. Information about effective instructional strategies should be included in faculty training and support materials.
- The technical systems and administrative support systems should be evaluated by the students, and the faculty. In designing the evaluation materials, effort should be made to separate issues related to the technical and administrative systems from those related to individual faculty performance; faculty evaluation

normally rests with academic units, whereas systems evaluation rests with non-academic units:

- Evaluation of the faculty orientation and training process should be done each time the sessions are offered and the results should be included into the ongoing refinement of the sessions and materials.

Laboratory Experiences

- One of the most challenging aspects of distance education is to provide students who are not on campus with experiences that are equivalent to the regular students who have access to fully equipped laboratories. The initial step is for faculty to determine how crucial hands-on experience in a laboratory situation is in ensuring that students achieve the desired learning or is there any alternative method. When alternative methods to lab experiences are not suitable, one or more of the following solutions might be appropriate.
- One option is to conduct lab experiments at one location on an interactive video network. Students at all sites actively participate by conferring on the steps to be followed, and by observing, interpreting data, and suggesting follow-up activities.
- Off-the-shelf computer simulations are increasingly available in some of the countries. Depending on the cost and the hardware requirements, students might either purchase simulations as part of their course materials or travel alone or in groups to a library or off-campus location to work, where computer simulations facility is available.
- Sometimes the students may travel to a central location with laboratory facilities to complete an intensive lab module for several days or weeks. Alternatively, they might travel to decentralized locations i.e., study centers or regional centers to do lab assignments over a week or several weekends.

Technology and Distance Education

Oral transmission of knowledge was the method of instruction used in education before the invention of printing. The introduction of postal services enabled the students to get their instructions by mail at their places of residence. Later on, modern technologies were developed and these could be applied in the field of education first and then in Distance education. New techniques and equipments like telephone; radio, video, satellite communication, TV and computers are now being used to impart speedy and effective instruction. Self-learning process needs support of Information Technology. As we see multimedia instructional approach has more success in distance education. Learner gets the feeling of being

in a classroom. The expert interaction can be an opportunity to the learner even when he is involved in self-learning.

Developments in technology, especially the Internet and World Wide Web, have increased the range of opportunities for universities to reach distance learners and to offer increasingly interactive learning methods. At the same time, it is widely observed that demand from the lifelong learning market for education and information is growing dramatically. Higher Education must respond to the trends in the global Information Age, economy and its competitive work environment, along with demographic factors. Institutions need to demonstrate that the distance education experiences match the competencies needed in the workplace, and students' critical thinking and information skills will be among the most critical attributes.

Rapid innovation in information and communications technology (ICT) is transforming the way we work, the way we interact, the way we learn, and the way we live. In the education sector, e-learning increases access to education by making it possible for students to fit their education into traditional lifestyles and work schedules and choose from a wider-range of courses and learning opportunities. E-learning uses ICT to overcome barriers of traditional learning. Multimedia technology in education makes it possible to illustrate and teach complex processes. Computer courseware can be effectively designed using a systems approach as well as integrating appropriate instructional systems design principles.

E-Learning Trends

E-learning refers to the use of information and communications technology (ICT) to enhance and/or support learning. It covers a wide range of systems, from students using e-mail and accessing course work online while following a course on campus to the programs offered entirely online. E-learning can be divided into several different types. In all cases, a campus-based institution offers the courses, but using e-learning using the Internet or other online networks.

Information available on the Internet indicate that web-supplemented courses focus on classroom-based teaching but include putting a course outline and lecture notes online, use of e-mail and links to online resources. Web based courses require students to use the Internet for key elements of the programs such as online discussions, assessments, or online project or collaborative work without significant reduction in classroom time. Online discussions, assessments, or project or collaborative work replace some face-to-face teaching and learning. But when courses are offered fully online (Web based), students can choose the courses offered by a university in one city from another city, country

or in different time zones. Students taking-up e-learning are growing, but at most campus-based institutions, whole web based and fully online account less than the total enrolments.

E-Learning Activities

Information available on the Internet and the Institutions offering e-learning programs reveal that most e-learning activities are related to units, of a course, reflecting the e-learning as supplementary to on-campus courses at initial (basic) level. Full programs with relevant online materials are more common at advanced level in specialized areas to enable the learners to combine work and study. Internet reveals that Information Technology and business management as the most commonly cited disciplines making significant use of some form of e-learning.

In the developed countries, Universities are more interested in improving their on-campus programs by using e-learning to offer more flexibility and content. Institutions worldwide have adopted learning management systems (LMS) –software developed for administration and teaching. This software enables the institutions to treat enrolment data electronically, offer electronic access to course materials and carry out assessments as well as offering online interaction between faculty and students. But there is still a gap between LMS adoption and its use for teaching. Two leading commercial vendors of LMS software (Blackboard and WebCT) are significant; development of in-house software and the use of "open source" software freely available are new trends.

Although the multiplication of software platforms for e-learning reflects the novelty, and dynamism of LMS, it might also represent a wasteful duplication of effort. It might also correspond to an over-emphasis on the technological infrastructure, when the real challenge lies in making innovative and effective use of the functionalities offered to faculty and students.

E-Learning Issues:

Educational institutions offer e-learning method to improve the quality of teaching and learning in the distance mode. E-learning is still to revolutionize learning and teaching, although it offers fascinating experiments. The current limitation of online learning is because of low adoption of content management systems, where electronic content is split into "learning objects" that can be manipulated and combined for multiple pedagogic purposes.

We can say that the learning object model is the most prominent revolutionary approach to date. A learning object can be described as an electronic tool or resource that can be used, re-used and re-designed in different contexts, for different purposes and by different academic sectors.

Some faculty members may not like to use third party materials, as well as re-use because of copyright concerns. Although institutions pay a lot of attention to learning objects, these tools need further development. In fact, ICT has more impact on administrative services such as admissions, registration, fee payment and purchasing than on the fundamentals of classroom teaching and learning. Even if ICT has not revolutionized the classrooms, at least it is changing the learning experience of students by relaxing time and space constraints as well as providing easier access to online information resources, an achievement that should not be underestimated.

E-learning Challenges:

Universities are now thinking about the potential contribution of e-learning to their organizational future. In some countries, key barriers remain, infrastructure and funding, but the pedagogic value of e-learning and staff development are probably the most challenging. The Institutions need to recruit a broader range of staff, such as technological experts, to complement academic staff. Another challenge is persuading current faculty members to use and develop e-learning content. The general concept of staff development is seen as key to sustainable e-learning.

New technologies also bring resistance in implementation and E-learning requires initial acceptance by the faculty. Resistance to e-learning by faculty members can be due to the limitations of e-learning and the available tools. It can also be lack of motivation to carry out what is basically an additional task, since e-learning mostly supplements, as on today, rather than replaces classroom-based teaching, coupled with insufficient literacy either in ICT in general or in e-learning applications in particular.

E-learning and the sharing of information might also conflict to some extent with the professional culture of academics, based on autonomy and a reward system often based on research. Concerns about intellectual property rights may also pose a problem. Building a community of e-learning within and across institutions and knowledge management processes related to e-learning, are crucial for e-learning development process. Partnerships are a key characteristic of e-learning that could help institutions to share knowledge, and good practices, and achieve

benefits such as advanced technology and educational quality in addition to enhanced presence and lower costs. Several institutions, for example the Worldwide Universities Network and Commonwealth of Learning in UK and Stanford University e-learning partnership in USA and many more, are involved in partnerships covering activities such as e-learning infrastructure; learning management systems and applications; creating e-learning materials; developing joint programs; collaborating for research; sharing best practices; and sharing costs of hardware and software.

Partnerships also raise potential issues. One is whether e-learning materials should be made available to third parties free or for a fee. Another one is the attitude towards outsourcing of e-learning activities. Partnerships and networking could still be used more effectively to enhance the diffusion of knowledge and good practices at the sectoral level.

Many universities expect that e-learning will help reduce costs but there is no significant evidence on the Internet to this myth. The experienced institutions may be positive about cost impact of e-learning in the medium run. There are several possible ways for e-learning to become a less expensive model compared to conventional face-to-face or distance education: using some online provision to replace on-campus teaching, rather than duplicating it; facilitating increased peer or automated learning; using standard or pre-existing or open source software; drawing on the open standards and learning objects model to increase material re-use and sharing; and greater course standardization. In any case, re-organization should involve decrease in course development costs, an increase in the student and staff ratio or savings due to less use of facilities such as classrooms.

The funding remains a prominent feature of e-learning development because e-learning is a novel activity that needs continued experimentation and research. Many institutions need to make provision for normal funding, often through a combination of government funding, internal funds and student fees, especially as external funding sometimes raises the problem of sustainability.

Conclusions

State or national governments should play a significant role in the strategic direction and funding of higher education and of e-learning. Even in countries where institutions have significant autonomy and governments are not expected to play a direct part in institutional management, governments influence the functioning of institutions by means of strategic funding or on some policy issues.

E-learning is still a novel activity and it has improved the overall student experience in distance mode, and the governments should provide funding to enable the Institutions to reach to the un-reached using technology. E-learning can be used to improve Distance Education and increase access, as part of a lifelong learning policy apart from enhancing the student experiences on campus. In most countries, the basic infrastructure still needs further development and governments need to focus on this. In the developed world where the infrastructure is in place, governments now need to focus on the social, organizational and legal aspects in order to foster further development of e-learning. E-learning tools are available; the problem is that students and faculty do not use them enough, often simply through ignorance. Practical and experimental knowledge of e-learning is too often scattered within and across institutions, and even successful practices and interesting experiences have limited impact and visibility.

Governments could help by encouraging the dissemination of best practices to stimulate innovation, avoid wasteful duplication of efforts, and scale up successful experiments; encouraging appropriate staff development, in order to ensure progress at institutional level; supporting research and development on learning objects and other promising innovations such as open educational resources or the use of virtual simulation tools, and ensuring their relevance for students and faculty; exploring the issues surrounding intellectual property in e-learning; and promoting a dialogue between IT providers and institutions to plan for public-private partnerships, in order to keep costs at a reasonable level.

The active engagement of institutions is indeed vital for further growth of e-learning. Most importantly, governments and institutions should adopt a suitable timeframe for development.

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Financial Management of College Libraries

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ABSTRACT

Present article deals with finance, financial management and its objectives, importance, and role in non-profit making organizations. Discusses college library, its finance, and financial management. Explains new approaches in financial management. Concludes with suggestion regarding financial activities of college libraries

Introduction

Every organisation has a set of goals to be achieved and these cannot be achieved without finance. As machine cannot work without oil and lubricants, same is case of college libraries which cannot work trouble free without finance. Finances are indispensable for every human endeavour and success in planning of all public projects is often proportionate to the amount of finance available and the manner in which it is utilised. Finance is the power which runs all engines, individuals, institutions, organizations. It has become the sun of modern world and all activities of growth and development revolve around it. It is the yardstick of growth and development. Finance influences the lives of all and affects all rational decisions.

Finance

Finance is one of the most important elements of management. It mainly involves in raising of funds and their effective utilisation keeping in view the overall objectives of the organisation. This requires great caution and wisdom on the part of the management. The management makes use of various financial techniques, devices etc. from administrating the financial affairs of the organisation in most effective, efficient and beneficial manner.

"Money makes the mare go". This common saying beautifully depicts the wisdom of Indian society and importance attached to finance. Kautilya, the great Indian philosopher, reiterates the importance of finance in his piece of advice, "All undertakings depend upon finance,

hence foremost attention should be paid to the treasury". It is said that Lyod George once remarked that, "Government is finance".

Financial Management

Financial management is the study of principles and practices involved in the financial operations of an institution, industry or state. College libraries are no exception to this. It deals with the problems of acquisition; distribution and utilisation of funds; balancing of revenue and expenditure; general control; and evaluation of financial affairs comes under the purview of financial management[2].

Financial management deals with the situation that require selection of specific assets as well as the problem of size and growth of an organisation. The analysis of these decisions is based upon the expected sources of funds and their effective and efficient use and their impact upon the objectives of the organisation. It concerns with the proper management of the financial matters of the organisation. The financial manager must see that the funds are procured in such a manner that the risk, control considerations are properly balanced in a given situation and there is optimum utilisation of funds. It is that activity which concerns with the planning and controlling of the organisation's resources.

Objectives of Financial Management

There are so many objectives of the financial management. Some of the important objectives are :

(a) Maximum utilisation of resources; (b) Growth and survival of organisation; (c) To get the best results; (d) To provide service at least cost; (e) Welfare of the employees of the organisation and benefit of the maxim number[3].

Importance Of Financial Management

Financial management is essential to fulfil the following requirements of the organisation:

a) It helps the organisation in achieving the set goals;

b) It helps in advance planning and raising of funds for performing the operations of the organisation;

c) It helps in taking wise decisions for the proper and effective utilisation of the resources;

d) It helps in proper allocation of funds required for the activities to be performed for efficient working of the organisation;

e) It helps in judicious utilisation of funds avoiding unnecessary expenditure and wastage of limited resources;

f) It ensures the regular supply of funds required by the organisation for performance of activities of day-to-day routine;

g) It ensures the economic utilisation and channelisation of resource, so that there is little wastage and limited resources can be put to optimum use for the benefit of maximum number of users of the organisation;

h) It ensure the control of the cash flows. The financial managers must know among other things, how much cash will be 'tied up' for emergent requirements of the organisation;

i) It helps in retrospective analysis of operating period for the purpose of evaluation of the wisdom and efficiency of financial planning which helps in improving the standards, techniques and procedures of financial control;

j) It helps in the designing and implementation of certain plans. Plans aims at estimating of requirements of the present and future and how these requirements will be met; and

k) It helps in handling the day to day routine financial matters and solving the complex problems regarding the financial activities of the organisation.

Role of Financial Management Non-Profit Making Organizations

Financial management plays very important role in non-profit making organisations. A non-profit making organisation may not be keen in earning the profit, but it need to cut down its cost and the use of funds in the manner that maximum number may get the benefit. It is essential to get good results and to stop the wastage of funds. College libraries fall in the category of non-profit making organisation as they are the spending and service institutions.

College Library

A college and for that purpose, any institution of higher learning is rightly described as a community where teachers and scholars are the head, students are the body and the library is the heart. If the body is to perform its functions properly and efficiently its heart must be well developed and strong in its functioning. College library forms an important and integral part of the teaching process in the institution. The college library has been described by various educationists as "Nerve centre of the institution", "Apex of the entire academic life", "Temple of learning" and "Head and Heart of educational institution" etc. due to its role in supplementing the learning and teaching process of the institution.

College Library Finance

Finances are essential for running any institution properly and college library is no exception to it. As college library is a service institution, the authorities should guarantee stable and adequate financial support for rendering satisfactory and efficient services to the college community. Money play a vital role in all walks of life. No scheme or plan can meet any appreciable success in the absence of adequate funds.

College library heavily depends upon adequate regular financial support for :

i) Promoting good library services ;

ii) Efficient library organisation and management;

iii) Organising its activities, programmers etc.;

iv) All round and up-to-date collection required by the users for their academic needs;

v) Smooth and proper functioning;

vi) Acquisition of computerised reading materials

vii) Purchase of hardware and software for computerised library services etc.

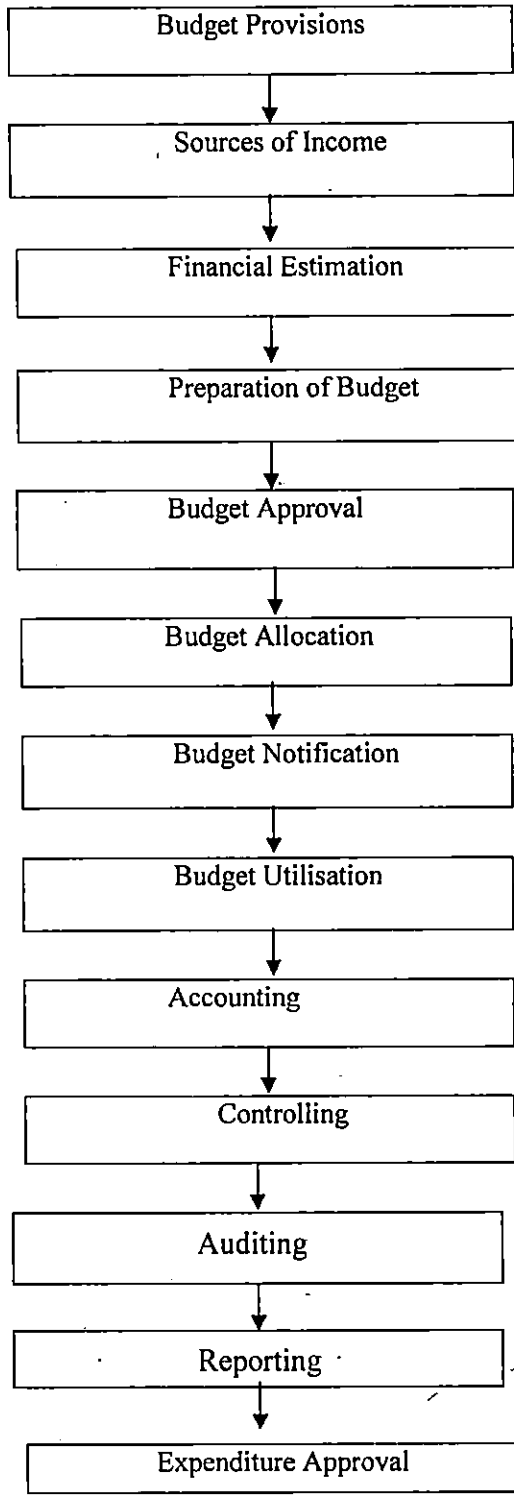
viii) Employing well motivating, qualified and trained staff in sufficient number;

ix) Preservation, transmission of existing knowledge and creation of new knowledge; and

x) To cope up with the challenges posed by advances in information and communication technology, the staff which is well equipped with the knowledge of computers, CD-ROM, micrographics, online searching and various techniques of information storage and retrieval will be employed[4].

Financial Management of College Library

Step by step financial management of college library is depicted in the flow chart 4.2


Budget Provisions
Sources of Income
Financial Estimation
Preparation of Budget
Budget Approval
Budget Allocation
Budget Notification
Budget Utilisation
Accounting
Controlling
Auditing
Reporting
Expenditure Approval

The flow chart 4.2 depicts the financial management of college library step by step as under:

I. Budget provisions are made for the college library;
II. All sources of income are taken into account;
III. Financial estimation is made using one of the methods Per Capita, Proportional, Method of Details;
IV. The budget is prepared for the library;
V. The budget is approved from competent authority viz. Library Committee/ Principal/Governing Body;
VI. The budget is allocated to different Heads of Expenditure;
VII. The budget allocated for Book Purchase Fund is notified in writing to Teacher-in-Charges of the concerned subjects;
VIII. The budget is utilized within stipulated period i.e. within financial year;
IX. Accounting is done by keeping various financial records;
X. Controlling is done by balancing income and expenditure and the funds allocated to one head not to be utilized for any other head;
XI. Reporting is done after the end of financial year; and
XII. The expenditure of the library is got approved by the competent authority viz. Library Committee/Principal/Governing Body.

Financial Management Process of College Libraries

The process of financial management includes Planning, Organizing, Budgeting, Finance Control, Evaluation and Reporting shown in the figure 4.3

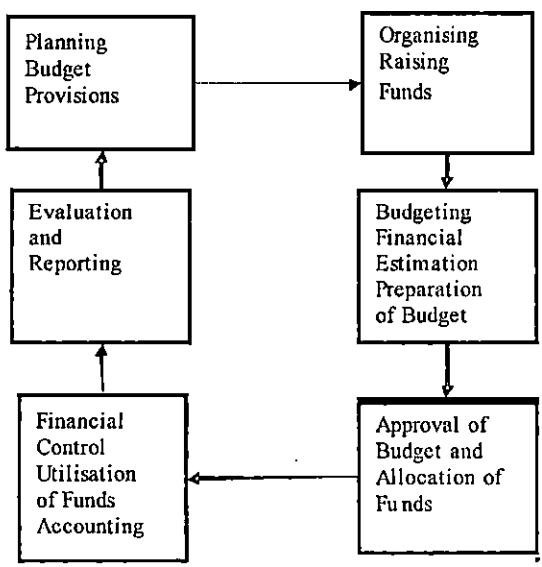


Figure 4.3: Process of Financial Management in College Libraries.

PLANNING

First function of the Finance Manager is to plan and forecast, i.e., determining the goals and ideals of the library. Planning presupposes the assessment of the existing conditions and relevant causes. The solutions are suggested for removing the defects. In library planning the budget provisions are made for existing activities as well as for future activities.

ORGANISATION

Organisation means such a structure of authority to be established as may be capable of achieving the set goals. This structure is needed to bring together all the resources including staff members in such a scientific way that the work is done most efficiently and smoothly. The organisation as function of the Library Finance Manager includes raising of funds for the existing activities as well as for the future activities of the college library.

ACQUISITION OF FUNDS

Acquisition of funds concerns with the raising of capital funds required for library material, staff salary, building, fittings, equipments, machinery, and many such needs as to include expenses on AMC and PMC, etc. The main sources of income of college libraries are as follows[5]:

The Sources of library finance or revenue for College Libraries are:

- Grants received from the concerned or college as allocated in the University or College budget
- Grants from University Grants commission
- Grants from Government
- Grants from a foundation or any other agency
- Endowments, if any
- Donations
- Library fee from students, research scholars and special members
- Charges for services and fines
- Reading room fee
- Sale of publications
- Sale of scrap like newspapers, magazines, discarded books etc.

BUDGETING

Balancing of revenue and expenditure is the result of the budgeting function of the Library Finance Manager. Budgeting is a technique for estimating the requirements for the coming year. Budget is a financial

tool for planning for future. It is an estimate of revenue and expenditure.. The library expenditure need to be planned in advance with proper estimation by applying either of the methods, such as, per capita, proportional method, so that the adequate and balanced funds be allocated to various activities and programmes. Librarians keep in mind the users' needs, services to be provided on continuous basis, future development programme and activities while preparing the budget of the library.

The budgetary estimates are prepared with full justifications and well in time so that the same is got sanctioned from the authorities easily and in time.

APPROVAL OF BUDGET

After preparation of library budget the same is got approved by the Competent Authority, i.e., Library Committee/ Principal/ Governing Body.

ALLOCATION OF FUNDS

Allocations of funds for expenditure under other different heads i.e. salaries of the staff, binding; heating, lighting and cooling; postage; stationery and other contingencies, AMC and PMC etc. need to be allocated according to prevailing norms and standards propounded by various experts. The budget allocations are notified to the respective heads of departments of various subjects so that the purchases are made well in time.

Distribution of funds deals with equitable allocation of funds for spending on different types of reading material covering various subject areas. Books on science and technology are costlier than language books, costly reference books become out of date very faster in some subject areas. All such factors should be kept in mind while allocating funds to various subjects.

Financial Control

Budgetary control enables the proper and judicious utilisation of funds; maintenance of proper accounts and financial records like funds allocation register, bill register, cash book, ledger, paid voucher files, tender files, order files etc. for audit purposes. The funds be utilised in such a manner that majority of readers derive maximum benefit in using the library, and unnecessary expenditure and wastage be avoided. Unnecessary duplication should be avoided and the funds thus saved could be better spent on purchasing new alternative reading material covering additional subject areas. The allocated funds be utilised within stipulated period and for the items for which these are allocated.

Evaluation & Reporting

Evaluation of financial matters concerns with the analysis of financial operations and activities, and adjustment of funds required urgently and on priority basis. These adjustments are made strictly in accordance with the financial statutes, procedures and rules. Evaluation is essential for the measurement of performance of different units of the library.

If there is any deviation from the set goals found, the decisions in financial matters be reviewed for the optimum and wise utilisation of limited funds. Financial reporting concerns with preparation of balance sheet, expenditure statements of the ending financial year and presenting the same for information and approval of the competent authority of the parent organisation.

New Approaches in Financial Management

Two new approaches emerged in the field of financial management, which are very useful in solving the problems of financial management. Also by charging the services and products of library, the image of library will change from non-profit organization to profit making organization. So these two new approaches are[6]:

Outsourcing

If a library does not want to use its own internal resources, it can hire an external organization that specializes in providing these services to do the work. The process of turning over to external resources is called outsourcing.

As we know the cost of information systems function has risen rapidly, librarians are seeking ways to control those costs and are treating information technology as a capital investment. Instead of an operating cost of the library. One option for controlling these costs is to outsource.

When to use outsourcing

When there is limited opportunity for the library to distinguish itself competitive through a particular application or series of application.

- When the predictability of uninterrupted information systems service is not very important.
- When outsourcing does not strip the library of the technical know-how required for future information system innovation.
- When the library's existing capabilities are limited, ineffective or technically inferior.

Managing Outsourcing

To obtain value from outsourcing, library need to make sure the process is properly managed. Segmenting the library's range of information systems activities into pieces that potentially can be outsourced makes

the problem more manageable and also helps libraries match an outsourcer with the appropriate job.

The library should have a working relationship of trust with an outsourcing vendor. The vendor should' understand the library's services and works as a partner, adapting agreements to meet the library's changing needs.

Libraries should design outsourcing contracts carefully so that the outsourcing services can be adjusted if the nature of the work changes. Libraries should constantly re-evaluate their vendors and decisions to outsource in light of changing work conditions and the growing pool of available outsourcing services.

Moblisation of Sources

The source of revenue varies from library to library. Resource Mobilization means to supplement the present resources by additional means viz.

- Gifts
- Grants
- Endowments

These will be implemented in the following ways:

- Encouraging students to donate a book to the library on their birthday, in memory of their beloved ones.
- Help in constructing library building byway of gift of land, money, material, etc.
- Endowments, gifts, grants, etc. for purchase of books, furniture etc.

Resource Mobilization is totally dependent upon the attitude of library authorities because they have to actively participate in this process. They have to encourage the users and develop a feeling of ownership in users towards the library because this feeling in return will encourage of the library.

Suggestions Regarding Financial Activities of College Libraries

There are some important and necessary guidelines are to be followed regarding financial activities in the college libraries for effective and efficient financial management. The guidelines regarding various financial activities are as follows:

(i) The Librarian, being the best judge of users' requirements, should activity be involved in book selection procedure with other subject experts;

(ii) Financial powers of the librarian should be broad based and clearly defined;

(iii) Librarian should have the financial authority for utilization of the allocated budget for the betterment and development of the library;

(iv) Model policy for college libraries for weeding out of less used, unused books from longtime should be formulated;

(v) Financial powers should be given as per level of grade of the librarian as per govt. rules which will help in creative development and planning of the library;

(vi) Books required by users should be purchased;

(vii) Internet and telephone facilities should be provided to the librarian;

(viii) E-Books for visually handicapped users should be provided by multimedia;

(ix) Book selection policy should be based on selection of best books for the benefit of maximum users;

(x) Users' study will help in best utilization of resources;

(xi) There should be streamlined and model policy for resource sharing amongst the libraries;

(xii) Libraries should be automated by providing information technology environment;

(xiii) Computer literate and well qualified library staff be required for automated library services;

(xiv) Norms of staffing pattern decided by U.G.C. should be followed for provision of library staff;

(xv) In computerized libraries special training must be provided to existing library staff for handling specialized services/ activities in the libraries;

(xvi) U.G.C. / State Govt. should provided adequate grants for library automation, purchase of books and journals;

(xvii) Library and Reading Room fee should be introduced in colleges where it does not exit and be credited to library budget;

(xviii) Proper budget should be prepared for college libraries;

(xix) U.G.C. should provide at least Rs. 200/- per students and Rs. 400/- per teacher as recurring grant to all college libraries;

(xx) U.G.C. and state govt. should provide the recurring grant for library automation and its maintenance afterward for better and effective library services; and

(xxi) Total Quality Management (TQM) technique should be applied for the management of library resources.

Distribution of Funds

Distribution of funds implies allocation of funds to various heads of expenditure in the college library. Library staff's salaries expenditure records are kept in college office. The college library allocates funds with following percentage to following important main heads of expenditure are shown in table 6.1 (a).

Sr. No.	Head of Expenditure	%	S.No.	Periodicals Subscription.	%
i)	Books	70	1.	Subject Periodicals	
ii)	Periodicals	15	a)	Foreign Periodicals	45
iii)	Binding	05	b)	Indian periodicals	40
iv)	Furniture and Equipments	04	2.	Magazines for light reading	10
v)	Contingencies	04	3.	Newspapers	05
vi)	Miscellaneous	02			
Total		100	Total		100

Colleges having Science, Commerce and Arts Faculties			Colleges having Commerce and Arts Faculties		
S. N.	Subjects	%	S.N.	Subjects	%
1	Sciences	40	1	Social Sciences	50
2	Social Sciences	30	2	Humanities	30
3	Humanities	15	3	Commerce	10
4	Commerce	08	4	Reference & Generalia	10
5	Reference & Generalia	07			
Total		100	Total		100

Criteria for Allocation of Book Purchase Funds

The book purchase fund should be allocated to various disciplines taught in the college; considering number of students, number of teachers, average cost of books, Honours and Post-Graduate Courses. Allocation of book purchase fund should be equitable to each discipline. The following criteria for allocation of book purchase fund be adopted in college library. Table 6.2 (a) Shows the allocation of books purchase funds based on above factors:

Sr. No.	Colleges having Science, Commerce and Arts Faculties	%	Sr. No.	Colleges having Commerce and Arts Faculties	%
i)	Equitable amount to each subject.	02	i)	Equitable amount to each subject.	04
ii)	Honours Courses in each subject.	02	ii)	Honours Courses in each subject.	03
iii)	Post Graduate Courses in each subject.	01	iii)	Post Graduate Courses in each subject.	01
iv)	Higher average cost for each subject.	02	iv)	Higher average cost for each subject.	00
v)	Reference & Generalia	06	v)	Reference & Generalia	10

College having 18 subjects, 15 Honours Courses and 14 Post Gradute Courses			College having 13 subjects, 10 Honours Courses and 8 Post Gradute Courses		
Sr. No.	Allocation	%	Sr. No.	Allocation	%
i)	18 subjects Equitable	36	i)	13 subjects Equitable Allocation.	52
ii)	Allocation.	30	ii)	10 Honours Courses	30
iii)	15 Honours	14	ii)	8 P.G. Courses	08
iv)	Courses 14 P.G. Courses	14	iv)	0 subjects Higher Average Cost	00
v)	7 subjects Higher Average Cost Reference & Generalia	06	v)	Reference & Generalia	10
Total		100	Total		100

Book Purchase Budget Allocation of Kirori Mal College Library (University of Delhi), Delhi

On the basis of the above-mentioned factors the case study of Kirori Mal College Library, Delhi depicts the following criteria (Formula) for the allocation of book purchase funds to various disciplines is described in the following table 6.2 (b)

Sl. No.	Subject/ Discipline	Allocation	Sl. No.	Subject/ Discipline	Allocation
1.	Physics	08%	11.	Political Science	06%
2.	Chemistry	08%	12.	Commerce	08%
3.	Mathematics	08%	13.	Hindi	05%

4.	Botany	05.5%	14.	English	08%
5.	Zoology	05.5%	15..	Geography	04.5%
6.	Mathematical Statistics	03%	16.	Philosophy	02%
7.	Analytical chemistry	01.5%	17.	Sanskrit	02.5%
8.	Computer Science	03%	18.	Urdu	02%
9.	Economics	06%	19.	Bengali	01%
10	History	06%	20.	Generalia	06.5%
Total					100%

Conclusion

Financial management plays very important role in non-profit making organisations. A non-profit making organisation may not aim at earning the profits, but it is under heavy obligation for best utilization of its financial resources, which is a public fund and the organization is accountable to the public or the society. College libraries fall in the category of non-profit making organization, and hence, proper management of their financial resources requires most sincere and careful approach of the Finance Manager.

Financial management is applied to the college libraries for smooth, effective and efficient working. It deals with the acquisition; distribution and utilisation of funds; balancing of revenue and expenditure; the general control and evaluation of financial affairs of the library. The task of finding money, investing funds, managing property, preparing and getting the sanction for the budget and other financial matters are the responsibility of central executive authority of the parent organisation to which the library belongs. The estimating financial requirements; preparation of a budget for its functions, activities and programmes; managing the funds appropriated and spending within specific period; maintaining accounts; and finally preparing a report is the responsibility of the College Librarian. The principles of effective control, regularity and farsightedness; economy; and flexibility are useful in operating and managing finances in the libraries. There are statutory financial rules and procedures laid down by the executive authorities, which need to be followed by the library managers in administering the financial operations.

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Innovative Role of Professional Associations to Promote Information Profession and Professionals in India

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Introduction

All the organizations, institutions, associations or professional societies are established with a specific vision and mission. For example, the main mission of the colleges is to educate the society; main goal of the corporate organizations is to get maximum benefits with in the limited resources; the mission of the hospitals is to make healthy community; main mission of the libraries is to provide and disseminate knowledge to the community etc. Similarly, the associations and professional bodies also work in the direction to achieve their mission. In India, most of the professional associations or societies are registered under societies registration act (India) XXI of 1860. These professional bodies are the powerful forces representing the voice of the professional community to solve the problems related to welfare, status, working culture, physical facilities, education and training including research and development activities. Associations and Societies also motivate to the professionals for further advancement and career development by providing various opportunities by giving awards, certificates, fellowships, etc.

Objectives of the Associations

The objectives of professional associations and societies are mainly common for furtherance and advancement of information profession and information professionals. These are:-

1. Strengthen and improve the quality of library and information services.
2. Encourage and promote the systematic acquisition, organization, management and dissemination of knowledge.
3. Raise the professional standard, efficiency and status of information professionals.
4. Organize and conduct events of interest to the members such as annual convention, lecture series, debates, competitions, workshops, seminars, training courses and regular courses etc. according to the changing environment and need based of the information professionals.
5. Publishing research publications, literature, bulletins and newsletters.
6. Promote research in Library and information Science.
7. Encourage cooperation and linkage among members and information centers.
8. Serve as an advocate for members on matters of common interest.
9. Support professional development programs.
10. Collaboration with other national and international professional bodies.

Major Associations

There are so many library and information science associations in India. Few are of the National level; few are of the State level and few are specific and dealing with special discipline.

National Associations

Indian Library Association (ILA):

The Indian library association, a premier association of all library and information professionals in India. To be precise, it was established in the year 1933. ILA has been on the forefront throughout these years looking forward towards achieving the goals and objectives set forth by its founders.

ILA right from its inception in right earnest has identified itself with the library movement in the country. In the course of tie, it has also worked for the upliftment of professionals' education and cadre-based status, by providing the necessary training and education avenues. It has made consistent efforts to provide an opportunity for all the library and information science professionals at all professional and semiprofessional levels from all the four corners of the country to participate in its activities. One such activity is organizing Annual conferences of the ILA in different parts of the country. Furtherance of library profession with a very active agenda consisting of continuing

education programmes, establishing interaction among the fellow professionals publication, consultancy help to the libraries at remote area where the information access and updating of knowledge would difficult. For this purpose, ILA has created the functionaries as sectional committees of University Libraries, College Libraries, Government Department Libraries, School Libraries, Academic Status and Parity, Public Libraries, Library and Information Science, Education Projects and Consultancy. These Sectional Committees consist of working librarian and experts in the subject including the teachers in Library and Information Science.

Medical Library Association of India (MLAI):
Medical Library Association of India was registered in 1981 as a professional body under the societies registration act (India) 1860. This Association has been playing an instrumental role in educating and improving the medical librarianship standards in the country. There are over 1000 medical libraries in the country and most of the librarians have been richly benefited with the information activities being discussed at MLAI for the last quarter century. The Association has over 500 members and a very large number of professionals are making headway in improving the medical information map of the country. The association has been organizing its annual convention, training courses, seminars, symposium, lectures on emerging trends etc.

Indian Association of Special Libraries & Information Centres (IASLIC):
India Association of Special Libraries and Information Centres (IASLIC) was formally established in 1955. The IASLIC is governed by a Council, which is the pivot of the general body members composed of 32 elected members. The Council formulates policies and programmes of work to be executed by the Executive and Finance Committee. The association has been organizing its annual convention, training courses, seminars, symposium, lectures on emerging trends. IASLIC has organized its activities primarily into the following programmes;

- Education programme ;
- Library documentation and information services programme ;
- Reprography and translation services programme ;
- Cooperation and coordination of libraries programme and
- Publication programme.

Society for Information Science (SIS):
The society for Information Science (SIS) was formed during 1976 with the aims; To promote interchange of information in the discipline of information science and its subdivision amongst the specialists and

between specialists and the public; To encourage and assist the professionals to maintain the integrity and competence of the profession and to foster a sense of partnership among the professionals engaged in this field. The Society is firmly committed to provide a congenial environment for interaction among information innovation industry, technology management and services, which are socially relevant in the interest of the Nation.

Since 1981, the society has been regularly organizing its annual conventions and conferences with a view to bring together professionals from various sub disciplines of information science on a common platform so that they could share their views, experiences and achievements to enrich their knowledge and enhance their professional competence.

Satinder Kaur Ramdev Memorial Trust for Advancement of Librarianship (SATKAL):

Trust, by the name of 'Satinder Kaur Ramdev Memorial Trust for Advancement of Librarianship' (acronym SATKAL), was founded with its headquarters at the Punjab University Library, Chandigarth in April 2000, by Mr. Jagindar Singh Ramdev, the first Deputy Librarian of the Punjab University, in the name of his late wife, Mrs. Satinder Kaur Ramdev. While the overall objective of the trust is Advancement of librarianship, its activities comprise of the following:-

- Promote research and librarianship by giving scholarships/stipends to deserving students and in-service library professionals;
  Launch/sponsor/publish/distribute library related literature;
- Organize Library competitions, including Ranganathan Quiz;
- Organize Annual lectures, library related seminars, training programmes and workshops;
- Provide financial assistance to needy retired librarians/ their dependants;

Society for the Advancement of Library and Information Science (SALIS):

The acronym"SALIS' stands for Society for the Advancement of Library and Information Science. Like-minded library professionals established SALIS as a registered professional association in March 2002. The primary focus is to provide need-based service to the profession and to work for the advancement of library and information science profession and professionals in India. The current focus of SALIS is to reach the un-reached LIS professionals with rural settings in order to minimize the

digital divide. It is also contemplating to open few more regional chapters in India.

SALIS is periodically conducting Continuing Education Programmes, lectures or courses on emerging areas, bringing out publications, seminars, workshops, quiz programme, debate, competition etc.

Raja Ram Mohan Roy Library Foundation (RRRLF):
The Raja Ram Mohan Roy Library Foundation is a Central Autonomous Body under the Department of Culture, Government of India, set up for promoting and furthering the cause of Public Library movement and development in India.

Indian Association of Teachers of Library and Information Science (IATLIS):
This association is an unique association of the information professionals who are involved in teaching area. The main objective of this association is to share its view regarding any changes or modifications in curriculum of Library and information Science. IATLIS also conduct National Seminar, workshop and meetings time to time.

Regional Associations
Regional or State Library associations also actively involved for the advancement and development of the profession and professional in their respective regions. And also conduct various training courses, seminars, workshops and other activities to increase the competency of the professionals. Few selected associations are:

Bengal Library Association:
Bengal Library Association formerly known as All Bengal Library Association was established in 1925 under the President ship of Poet Rabindranath Tagore. The major activities of the Association are: Propagating the importance of library and information services for individuals and for the society and developing awareness for the library and information services; Suggesting measures for improvement and expansion of library services or all categories of libraries in the state; Organizing movement for improvement of the service conditions and proper pay and status of the library workers; Organizing training courses, refresher courses, workshops etc. and publishing books, periodicals, reports etc pertaining to library science and library services. It is also running following courses:-

(a) Certificate course in Library Science since 1937
(b) Special course on Computer Application in Library Services
(c) Refresher course for working librarians.

Chandigarh Librarians Association (CLA):
Chandigarh Librarians Association (CLA) organizes seminar, lectures, week competitions, Panel discussion to promote the professionals working in school libraries, public libraries or any govt. library.

Delhi State Booksellers and Publishers Association (DSBPA), NEW DELHI:
Delhi State Booksellers' & Publishers' Association came into being by force of circumstances. It was as early as 1942 (during the II World War) when the government of India promulgated an ordinance called "Antiprofiteering" ordinance. Under this ordinance the trade people were allowed just 15% margin of profit, over the landed cost. It has acted as office of the secretary GOC for about 4 decades. Today, DSBPA is recognized by all Government Departments, Universities and its affiliated colleges. It has many objectives but the main objective is to setup the guidelines for marketing the publications.

Delhi Library Association (DLA):
Delhi Library Association was funded on 10th March 1939 and registered under the societies act during 1944. The main aim of the association is to promote library movement in Delhi state through education, trainings, advocacy, consultancy and research and coordination with other similar organizations.

DLA the tremendous success it has achieved by conducting training courses since 1955. The DLA Certificate in Library Science is very popular and is attracting a large number of admissions to Delhi Library Association courses every year.

Delhi library Association has been very active in organizing seminars, conferences, and special lecture time to time to.

Rajasthan Library Association (RLA)
Rajasthan Library Association also actively involved promoting library professional and organizing its annual conference and other meetings time to time.

Madras Library Association (MALA):
With the initiative and efforts of Mr. K.V. Krishnaswamy Aiyar and Dr. S.R. Ranganathan, the Madras Library Association (MALA) was founded on 31st January 1928 with the objective to promote library movement and creation of general awareness, especially among the rural public, of the benefits of using books and libraries. To achieve the goal, it has been organizing continuing education programmes, discussion

groups, workshops, conferences, seminars, lectures, film shows, exhibitions etc.

Punjab Library Association (PLA):

PLA is one of the earliest library association formed in India. Its roots can be traced back in the pre-independence era to the year 1916. Another first of this PLA was the publication of a manual entitled 'Punjab Library Primer' in the year 1916. This manual was published by PLA to give practical training to the new entrants to the profession, which was still in its infancy in India. Other firsts of PLA include starting of a first journal in library science in India entitled' Modern Librarian' in 1930. Later the journal was taken over by the Indian Library Association. Dewey College of Librarianship was also started by PLA in 1937. Partition of Punjab in 1947 caused a severe blow to the rich libraries in Punjab, the library community, and the PLA.

This is a state level professional and voluntary body without profit motive to promote library movement in Punjab through education, trainings, advocacy, consultancy and research. PLA has been actively advocating issues facing the library and information work profession at large and problems faced by members with the authorities concerned regarding status, salary, working conditions and qualifications of library staff.

Uttar Pradesh Library Association (UPLA):

Uttar Pradesh Library Association is also one of the oldest associations of Uttar Pradesh State. UPLA has been conducting various courses in Library and Information Science and also organize seminars, training courses, conventions and conferences, debates etc. at various cities of Uttar Pradesh. UPLA is running certificate course in Library and Information Science at 13 branches, namely Allahabad, Dehradun, Kanpur, Ghaziabad Lucknow, Moradabad Varansi, Jhansi, Roorkee, Agra, Nainital, Gorkhpur and Faizabad.

Librarians' Cultural Forum of India:

Librarians' Cultural Forum of India is a Delhi based association. It has instituted two scholarship for physically handicapped students one each for BLISc and MLISc cources.

Special Associations

Bombay Science Librarians Associations.

To constitute the **Bombay Science Librarians Associations,** the initiative was taken by the librarians of Bhabha Atomic Research Centre (B.A.R.C.), Department of Chemical Technology, Bombay University

(U.D.C.T.), Indian Institute of Technology (I.I.T.), Bombay and Tata Institute of Fundamental Research (T.I.F.R.). They started meeting frequently to discuss and explore the possibilities of developing closer ties than routine inter-library loan. As a result of these efforts, the Bombay Science Librarian's Association (BOSLA) was formed in October 1975. Since than, the association conducting seminars, debates etc periodically and also publishing a newsletter.

All Kerala Library and Information Science Degree Holders Association (KLDA)

KLDA is an association with different tastes for librarians of different tastes and take care of all the matters related to state wide networks of libraries in Kerala State, for betterment in school libraries and school librarians etc.

Kerala Video Library Association

Kerala Video Library Association (KVLA) has fully endorsed the views of the film chaber in its tussle with the association of Malayalam Movie Actors and seeking immediate intervention to check video piracy and to obtain license.

Other Associations

Some of the associations are constituted but either not registered under any constitution/act or are in the process. Out of these associations, few are actively involved for the development of information profession as well as professionals in their respective states or in India. These associations are: - Indian Association for Medical Informatics; Assam Library Association; Academy of Library Science and Documentation; Punjab College Librarians Association; Haryana Library Associations, Kurukshtra; Uttaranchal Library Association; Manipur Library Association; Tamil Nadu Library Association; Guwahati Library Association, Guwahati etc.

How The Associations Promote Professionals?

To promote, encourage and motivate the Library and Information Science professionals for their further advancement and development, these associations have been playing an exemplary role and provide various platforms at different level and different places in India. Associations also have instituted various awards, fellowships, stipends and other assistance in the form of finance, certificates, citation, shawls, memento etc. to honour and encourage the information professionals. Some awards are of national level and some are of states level. For National level awards, any professional from any part of India are eligible and for states level, only the candidate belongs to that particular states is eligible.

Indian Library Association (ILA)

The Indian Library Association (ILA) is premier association in India and instituted various awards to encourage the professionals. These awards are:-

ILA-Kaula-Best Librarian Award

The Award, instituted by Prof. P.N. Kaula Endowment for library and Information Science, Guntur (AP) for the professionals in the field of LIS in India. The award carries a shawl, citation and memento.

ILA-Vendanaikee Fellowship

The ILA-Vedanaikee Fellowship was instituted by Mrs. V.K. Sundaram, formerly Reader, DLIS, University of Delhi. The award is to be given to a candidate who has secured highest per cent of marks in the qualifying examination on the basis of which the candidate has been admitted to the BLISc course in the University of Delhi. The Award is to be given annually in Cash of Rs.1000/-only.

ILA-SM Ganguly Award

The Award is meant for the bet school library in the country. The libraries of high/higher secondary schools are eligible if they fulfill the following criteria: a) The applicant school may be an institution recognized/aided or run by the state government; b) The library is administered by a full time librarian possessing at least a BLISc degree; c) The library must be located in separate room of its own and provide at least lending services to all classes in regular and systematic manner; and d) a school library shall not get the award twice within five years.

ILA -CD Sharma Award

The award is meant for the author of the best paper written and presented during All-India library Conference of ILA. The Award was instituted by Mrs. Kamla Sharma w/o Dr. C.D. Sharma in memory of her late husband. It consists of presentation of books worth Rs.1000/-

ILA -A. G. MOTIWALE AWARD

The Award is meant for the young author of the best paper written and presented during All-India Library Conference of ILA. Author must be below the age of 24 years. The award was instituted by Mrs. Sushila Motiwale w/o late Dr. A.G. Motiwale. It consists of cash award of Rs.500/-

ILA-PV VERGHESE AWARD

The award has been instituted by Shri P.V. Verghese and is meant to be given to the author of the best paper published in ILA Bulletin in a year. It consists of cash award of Rs.500/-

IIA - Dr. LM Padhya Best University Library Award
The Award instituted by Mrs. Kantaaben L. Padhya in memory of her Late husband Dr. LM Padhya retired as University Librarian, from Smt. Hansa Mehta Library, of the Maharaja Sayajirao University of Baroda, Gujarat. The award carries a shawl, citation and memento.

IIA-Dr.P S G Kumar Life-Time Achievement Award
The Award carries a shawl, citations and memento. To receive this award, to and fro, 3 Tier AC Train fare reimbursed by the ILA.

Medical Library Association of India (MLAI)
The ***MLAI – S.J. Kulkarni Award*** instituted by MLAI in 1997 is a great honor for the entire medical librarians in the country. Another award is ***G.M. Kumar Best Paper Award*** of the Association which really encourage the librarians to write better paper. ***Life Time Achievement Award*** and the ***MLAI Fellowship*** Award which are also introduced are really boosting the morale of a good librarian and these awards, if successfully complied with will go a long way in the annals of medical librarianship in the country.

Indian Association of Special Libraries & Information Centres (IASLIC):
IASLIC has instituted a national level ***S.M. Ganguly-IASLIC award*** for the librarian of the year sponsored by Late S.M. Ganguly founder member of IASLIC Librarian.

Society for Information Science (SIS):
The society awards ***Fellowships*** to individuals in recognition of their out standing contribution in their profession. So far 4 individuals have been awarded fellowship by the Society. SIS Executive committee will select the fellows through search committees.

The Society also instituted, ***The Young Information Scientist Award*** in 1989 in the memory of Late Shri A.S. Raizada, Founder Secretary of SIS, to Young Information Scientists for their outstanding contribution in their profession. So for 7 Young Information Scientists have been awarded Raizada Memorial Award.

Satinder Kaur Ramdev Memorial Trust for Advancement of Librarianship (SATKAL):
SATKAL has Instituted following four Awards namely:- ***Punjab National Librarian Award; Young Librarian Award; Woman Librarian Award and School Librarian Award.***

Each of these Awards includes a memento, a shawl and the citation, which is presented to the Awardees in recognition of their contributions in the field of Librarianship.

Society for the Advancement of Library and Information Science (SALIS):
SALIS has instituted a national level '***Dr. Harish Chandra-Sushila Chandra Best Librarian Award'***, sponsored by Dr. Harish Chandra, Librarian, Indian Institute of Technology, Chennai to encourage the information professionals.

Also Instituted States level awards namely ***AutoLib-Tamilnadu-Best Librarian Award*** and ***AutoLib-Tamilnadu-Best Young Librarian Award.***

Raja Ram Mohan Roy Library Foundation
Raja Ram Mohan Roy Library Foundation provides National Level ***RRRLF Fellowship*** to any Senior professional in recognition of his/her meritorious services and significant contributions to the world of knowledge in general and library cultural in the country.

Indian Association of Teachers of Library and Information Science (IATLIS):
IATLIS has instituted ***IATLIS – Smt. N. Ratna Rao Best Women Teacher/Professional Award*** and given to any Sr. Library professional during IATLIS National Seminar.

Rajasthan Library Association (RLA):
RLA also instituted ***Dr. C.D. Sharma Memorial Award*** and given to Information professional for significant contribution. The award carries a Silver Memento, a Citation, a Shawl, a Shrifal (Coconut) and Rupees one thousand one hundred in cash.

Delhi State Booksellers and Publishers Association (DSBPA), NEW DELHI
Delhi State Booksellers and Publishers Association every year honors librarians for their contribution of their field. The association has instituted two awards namely- ***Best Librarians Award and Best College Librarian Award.*** The association presented a Memento to the awardees.

Librarians' Cultural Forum of India:
Librarians' Cultural Forum of India, Delhi has instituted two ***Scholarships*** for physically handicapped students one each for BLISc and MLISc courses. The name of Scholarship is Raj Grover Library Science Scholarship and given by Mrs, Raj Grover.

Conclusion

Institution of awards, prizes, fellowships stipends etc., really motivate and changing the attitude of the professionals and developing the regard for professional activities. Though, mostly Indian associations are facing financial problems and thrive only on membership fees, sales of publications and registration fees at the time of organizing any conference, seminar or workshop etc. However, the reputed associations like ILA, IASLIC, MLAI, SIS, SALIS, and SATKAL are creating various opportunities and avenues for the development and advancement of the information professionals to come forward.

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Knowledge Management in Libraries

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ABSTRACT

Knowledge management is a process of capturing, organizing, and storing knowledge and experience of individual workers and groups within an organization and making this information available to others in the organization. Since knowledge has become the vital force for social development, so the people's demand for information and knowledge are increasing rapidly. This has provided a good environment for library development. In the past the word knowledge management may not be very familiar in the field of library sciences, as many librarians think that knowledge management is concerned only with the business activities, in terms of profits, returns or investment only. But now a day's knowledge management has become a very important factor in improving the services and know-how that libraries need to cope up in the information driven society of 21st century. Varies tools and technologies of knowledge management can provide great help to librarian in dissemination of information to its clients.

Introduction

Knowledge management refers to the process of acquiring, organizing, storing, sharing and using knowledge by various organizations. In recent years, there has been a surge of interest in knowledge management worldwide. Knowledge management is not only processing information through new techniques and methods, but it is a long term program, starting from a strategic commitment and involving a correct analysis of knowledge, finally integrating various well adapted techniques and tools. In its most basic form, it is all about converting the available raw data into understandable information.

What is Knowledge

Knowledge is something that covers truths and beliefs, perspectives and concepts, judgments and expectations. It is infect the information conserved by an individual at one extreme and the humanity as the whole at the other extreme.

Plato defines knowledge as "justified, true belief".
Oxford English dictionary defines knowledge "as awareness, familiarity, person's range of information, understanding of subject and sum of what is known.".

Forms of Knowledge

- Tacit
- Explicit

Tacit knowledge is knowledge that an individual is unable to express and thereby convert into information. It can only be transmitted via training or gained through personal experience.
Explicit knowledge is knowledge that individuals are able to express fairly, easily using language or other forms of communications. It also means storing information and documents that can be shared and re-used, for example manuals, research reports.

What is Knowledge Management

Knowledge management is the systematic process of finding, selecting, organizing, distilling and presenting information in a way that improves user's comprehension in a specific area of interest. It helps an organization to gain insight and understanding from its own experience. Specific knowledge management activities help to focus the organization on acquiring, storing and utilizing knowledge for such things as problem solving, dynamic learning, strategic planning and decision making.

Definition

Knowledge management is the name of a concept in which an organization including libraries consciously and comprehensively gathers, organizes shares and analyzes its knowledge in terms of resources, documents and people skills.

According to A.T Raman," Knowledge management basically involves creation, dissemination, renewal, and application of knowledge towards organizational sustenance and survival."
Karl Wig defines knowledge management as "Art of creating value from organizations intangible assets".

BASIC FUNCTIONS OF KNOWLEDGE MANAGEMENT

The main objective of knowledge management is "The right information to the right user at the right moment." So we can say that knowledge management is an organizational strategy which help clients to delve deeper into their own databases, methods of working, organizational culture, people strategies, organization goals etc.

Four basic functions of Knowledge Management are

- Externalization
- Internalization
- Intermediation
- Cognition

Externalization: It is a process of capturing knowledge in repository and organizing it according to classification framework. It uses technologies to capture knowledge and store it online, e.g. imaging systems and databases.

Internalization: Internalization is a process of extracting knowledge from the external repository and filtering it to identify what is relevant to the knowledge seeker.

Intermediation: It matches a knowledge seeker with the best source of knowledge available. By tracking the experiences and interests of individuals, intermediation can link people who need to explore certain knowledge with people who appeared to harbor knowledge in that area.

Cognition: It is application of knowledge that has been exchange through the preceding three functions and is the ultimate goal of knowledge Management.

Technologies / Tools of Knowledge Management

There is a necessity to create learning organizations as to implement knowledge management initiatives. A knowledge management initiative is best taken up if an organization finds value in building a comprehensive knowledge base for an organization including libraries to enable better application, sharing and managing of knowledge across the various entities within and outside the organization including libraries. There is one thing that can transform knowledge management from a conceptual entity to absolute reality – it is technology. Some technologies that get associated with knowledge management are the following:

- Internet
- Data warehousing
- Data mining
- Artificial intelligence and expert systems
- Information retrieval
- Document management
- Collaboration
- Data base management systems

Internet

In simple words, internet is a network of computers connected to each other. The emergence of internet technology has enabled knowledge management to acquire the kind of formidable possibilities that were previously not feasible. It enable users to access a wide range of data, including text, video, audio, graphics, databases, maps, and other data types. Reference librarian with the specialized knowledge and by viewing various cites on internet can produce a "research guide" in a particular area and thus provides the user with exact information. Secondly he can search and select useful websites and knowledge sources from the internet and can include them in OPAC by using hard links, and thus saves the time of user.

Data Warehousing

Data warehouses are databases that provide users with clean, consistent, and relevant data. Clean refers to the idea that the data is correct. Consistency results in there being only one version of data. Relevant implies that data is organized so that they can be used to answer questions at the tactical and strategic level. Inmon has defined the data warehouse as a "subject oriented, integrated, time variant, non volatile collection of data in support of organization decision making process." It does not have any pre-conceived objectives except to provide and integrated view of all (organizations including libraries) related data. The knowledge acquired must be accumulated and converged into knowledge warehouses of libraries. The preference of information technologies in the field of knowledge storage is not only in quantity, but also in sorting, retrieval and security of information.

Data Mining

Data Mining is a technology that runs hand in hand with hand warehousing. While data warehousing merely helps to aggregate all the data within the library from multiple sources, it is the data mining technology that actually helps to find patterns and co-relates within all this data, leading to knowledge discovery.

In earlier years, traditional methods like reporting and query were used for data analysis.

With library management systems moving to web-based catalogue access, it becomes easier to combine published and informal information. In this information era almost all the major libraries have software's like TECHLIB, LIBSYS, SOLE etc which help users to view library collection

Artificial Intelligence & Expert Systems:

The expert system technology helps to translate knowledge in people's heads into a set of rules that could be stored within the expert system applications, which could then be used by the "non experts" too. Knowledge management in libraries starts from knowledge acquisition. Scope of knowledge acquisition widens by application of or using information technologies, as it rises knowledge acquiring speed and reduces knowledge acquision cost. It is very difficult to do such tasks by using human brain, so the best possible way is to link knowledge sources and knowledge workers by computer networks in libraries.

Information Retrieval

An information retrieval system help users to find documents that can best satisfy their need for information. The term information retrieval is primarily associated with text retrieval. The three major areas of concern in the field of information retrieval are the representation of the individual's information needs, representation of the meaning of the texts/ documents, and comparison of the two to find the most suitable match.

For the effective and quick information retrieval there are varieties of tools available. These tools help the users to find information easily and quickly.

Information Retrieval Tools

A networking is a process of connecting a variety of computers and other devices. One of the first aspects to be considered before implementing a knowledge solution is the networking infrastructure that a library has. It can be a combination of LAN's, WAN's, Legacy networks and Internet / Intranet / Extranet. The extent and nature of knowledge sharing is directly dependent on the good connectivity than a library has. One cannot contemplate video conferencing, for instance, if there are significant bandwidth constrains. In this context a good intranet assumed significant in not only providing the basic infrastructure but also in insuring the use of technologies conforming to open standards that are inter operatable.

Web Publishing & Hypertext

When we talk about sharing information in libraries through web , it becomes extremely important to author and publish these documents in standard formats that are viewer friendly. It should be possible to put the context together in such a manner that authorized users on the web can browse it. Moreover, it should serve as a link to related documents on the same or other sites. Otherwise one has to resort to the rather cumbersome process of sending or downloading content from point A to point B, through mechanisms like E-mail or FTP.

Search Engines & Text Mining

The function of text mining is to discover hidden patterns with in documents, to classify the documents based on these patterns and to summarizes information from the same. Such tools are of significant value for reference librarian in case of information retrieval and dissemination.

Document Management

Document Management tools are an important category of tools in the context of knowledge management. Rather then being a technology category by themselves, they use multiple technologies to provide a wide range of functionality with respect to creation, maintenance and retrieval of documents. Since the focus in most knowledge management solutions are on unstructured content, document management is an absolute necessity. Most of these tools provide a combination of functions, that provide maintenance of document repositories at the core, but gradually provide a varied combination (depending on a tool) of other affiliated functionalities like document creation, indexing search & retrieval.

Collaboration

Knowledge management is all about bringing people together to tap their expertise and judgment. For this purpose collaboration in either the physical or virtual sense is mandatory. In any organization including libraries the best form of collaboration is the people coming together physically. Collaboration uses different technologies like messaging, chats, discussion groups, audio conferencing, video conferencing etc. Depending on the nature of the requirement, the network infrastructure, bandwidth and cost consideration, a suitable mode of collaboration can be determined for libraries. So, collaboration in terms of good network infrastructure is a great boon to the librarians.

Database Management System

Today many libraries "manage" their "knowledge" resources with Groupware. Groupware is a software application used to create and organize databases that are distributed and shared throughout an entire institution. Earlier libraries develop their own system for storing and retrieving information and records. By the early eighties, commercial products began to appear that offered advantages to application developers. Soon database management system became important. They help to undertake all the activities of a library management system by providing the basic storage and retrieval technology. The library application software is simply the software that permits an organization to send and receives data from the database management system. It is important that the database which you choose for your library should work well (reliably, efficiently and flexibly), can respond to the up-

coming changes in the computer and information handling world and is commercially viable.

Characteristics of Knowledge Management in Libraries

The society and commercial world is changing in terms of knowledge and economy and to cope up with this change libraries have also to change their functions and duties. In the field of knowledge management libraries as learning institutes should provide a strong leadership. The role of libraries in 21st century will be of information centre and knowledge centre. The most important aim of any type of library whether academic, public or special in knowledge management is to share knowledge with others and to expand the access of information and knowledge for its users. There are some areas, given below in which if knowledge management be introduced can bring fruitful changes.

Knowledge Resource Management

With the tremendous increase in knowledge, libraries need to develop their resources to access and share strategies in electronic and digital formats. Though there are certain constrains in terms of limited funding, space, staff, technology but libraries must analyze the user needs and develop co-operative acquisition plan to meet these needs. Secondly, an integrated OPAC should be developed, which deals with printed and electronic resources of knowledge and it should be regularly checked, reviewed and updated. Thirdly, website of every library should be there and it should serve as a portal for all sources of selective and relevant information. Portal means collecting a variety of useful information resources into a single web page so as to help users to find exact and precise information.

Resource Sharing and Networking

Right from the past, resource sharing has remained an important function of libraries. The resource sharing can be done in many ways but the best is the concept of consortia. In consortia several libraries of a particular region join together and form a network to share each other resources. Best example is OCLC (Online computer library center) and OHIO LINK. The success of any consortia depends upon the participation and co-operation of all the members of consortia and that too without selfishness.

Human Resource Management

All types of libraries have traditional human resource management functions like recruitment of staff, training and development of staff, benefits, health and safety of staff etc. It is important for libraries to encourage its staff to update their skills and competencies in this changing environment of information. Librarians need to respond to

these changes in order to better serve the needs of their clients. For doing this an organizational culture for sharing of knowledge and expertise should be established by giving appropriate incentives. An organizational culture indicates co-operation, sharing and innovation within the staff and it can be done by strong leadership. The libraries should provide training and continuing education to all its staff members. More over special interest groups and chat rooms should be created that innovates human resource management in libraries.

Knowledge Innovation Management

The main function of knowledge management in libraries is to promote knowledge innovation. Knowledge innovation culture is different from traditional library culture and it has several specific factors like working environment, resources etc which effect the development of knowledge innovation culture in libraries. It is necessary to create environment that is beneficial to knowledge innovation and to enhance trust and co-operation within staff, and to create a kind of learning culture, to build knowledge management innovation in libraries.

Conclusion

In today's world, there is a well-accepted continuum from learning to knowledge management. Knowledge management offers potential benefits for the development of libraries and library staff. It enables learning activities to happen on a just-in-time, just-where-needed basis, with facilities to examine & measure performance of the learners as well as librarians too. Knowledge management is associated more with the capture, storage, classification and dissemination of knowledge. In present era of information and knowledge explosion librarians need to encourage the capabilities and knowledge of its staff and create an environment in which their knowledge can be utilized and shared efficiently. As we move deeper into the new millennium and knowledge processes, tools and technologies get involved at every stage of libraries interactions. Knowledge management will provide the library, with a capability level, that will prove a major source of competitive advantage in the new informative society. Librarians should work together with IT professionals to develop an appropriate knowledge management system.

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Knowledge Retrieval Methods and their Accessibility: A Survey of Leading Libraries of Manipur

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ABSTRACT

Libraries of this emerging knowledge era are supposed to play a major role, as knowledge centres in rendering services to the varied group of users. Such role is equally applicable in all types of library organizations. Accessibility to the existing systems of libraries depends on the knowledge retrieval methods adopted by them. Keeping this in view the present study attempts to assess the situation in 48(forty-eight) different types of libraries of Manipur. Besides this, 321 (Three Hundred and Twenty One) users of these libraries have also been taken into account to understand how far the methods and techniques followed by these libraries are acceptable to them in the process of access to knowledge resources.

Key words: Libraries; Manipur; Knowledge Retrieval Methods; Accessibility.

Introduction

A number of libraries of various types at different levels are in existence in Manipur. They follow different Knowledge Retrieval Methods ranging from the manual to the techniques emerged in digital environment. In order to analyse the effectiveness and efficiency of such different methods and tools being adopted by 48(forty-eight) leading libraries in the state of Manipur, the survey was carried out covering 321(three hundred and twenty one) users of different categories. The libraries include; School - 11; College- 24; University- 2; Public- 4 and Special -

7. The sample characteristics, on the other hand, concerning users comprises of 178 male and 143 female, the total users covered being 321. Of this total number of users, 294 (91.6%) are found to be registered members of their respective institutional libraries and the remaining 27(8.4%) are unregistered, mostly being public library users. Majority of them, 273 (85%) are students and research scholars, followed by working professionals including teachers, 41 (12.8%) and others, 7 (2.2%).

Objectives of the Study

The objectives of the study are

- To survey the different knowledge retrieval methods and techniques followed by the libraries;
- To assess the level of awareness of the users community on these methods and techniques ;
- To ascertain how far the users are benefited with the system in accessing the knowledge resources;
- To aware of the problems encountered by the users in accessing the knowledge resources through the prevailing methods and techniques; and
- To draw suggestions and opinions from the users and the LIS professionals working in the libraries.

Methodology

Two types of semi structurally designed questionnaires were distributed among the libraries and the users community to collect data for the study. The questionnaires returned by the library (48 in numbers) and users (321 in numbers) after duly filled in were taken into consideration for analysis and interpretation. Besides these, interview with library professionals, users, academicians were also held. Verification of library records and holdings, observation of library activities were also made during the process of collection of data for the study.

Knowledge Retrieval Methods and Tools

The different types of libraries under consideration are found to adopt different types of knowledge retrieval methods and other techniques.

Retrieval Methods

The knowledge retrieval methods adopted by the libraries are shown under table below:

Table 1: Retrieval Methods adopted by libraries

N= 48

Sl. No.	Methods	Yes (%)	No. (%)	Total (%)
01	Classification	37(77%)	11(23%)	48 (100%)
02	Cataloguing	22(46%)	26(54%)	48 (100%)
03	Bibliography	9(19%)	3981%)	48 (100%)

04	List of addition	18(37%)	30(63%)	48 (100%)
05	Current awareness service	11(23%)	37(77%)	48 (100%)
06	SDI Service	8(17%)	40(83%)	48 (100%)
07	Indexing journal	6(12%)	41(86%)	48 (100%)
08	Abstracting journal	6(12%)	42(88%)	48 (100%)
09	Review journal	5(10%)	43(90%)	48 (100%)
10	Publisher's catalogue	9(18%)	39(82%)	48 (100%)
11	Book imprint	7(14%)	41(86%)	48 (100%)
12	Union catalogue	2(4%)	46(96%)	48 (100%)
13	Centralized catalogue	2(4%)	46(96%)	48 (100%)
14	Cooperative cataloguing	5(10%	43(90%)	48 (100%)
15	Open Access System	20(42%)	28(58%)	48 (100%)
16	National bibliography	4(8%)	44(92%)	48 (100%)
17	Computer Networking	6(12%)	42(88%)	48 (100%)
18	Internet Surfing	6(12%)	42(88%)	48 (100%)
19	E mail	7(14%)	41(86%)	48 (100%)
20	Fax	3(6%)	45(94%)	48 (100%)
21	Teleconferencing	3(6%)	45(94%)	48 (100%)
22	Video conferencing	1(2%)	47(98%)	48 (100%)
23	Index to documents	4(8%)	44(92%)	48 (100%)
24	OPAC	1(2%)	47(98%)	48 (100%)

Source: Returned Questionnaire

Of the various methods of knowledge retrieval as adopted by the libraries, except "Classification" (77%) rest of the methods are found to be adopted very less, almost far below the desired rate, which are out of expectation. As the table 1 indicates, the knowledge retrieval methods adopted by the libraries of Manipur are not satisfactory at all. It can be presumed that they cannot disseminate desired information to the users systematically.

Retrieval Tools

The knowledge retrieval tools used by the different types of libraries of the state can be observed as the table 2 below shows:

Table2: Retrieval Tools

N = 48

Sl. No.	Tools	Yes (%)	No. (%)	Total (%)
01	Classification Scheme	27(56%)	21(44%)	48(100%)
02	Simple classification	10(21%)	38(79%)	48(100%)
03	Catalogue code	21(44%)	27(56%)	48(100%)
04	Sears list of subject heading	8(17%)	40(83%)	48(100%)
05	POPSI	Nil	Nil	Nil
06	PRECIS	Nil	Nil	Nil
07	MARC	01(2%)	47(98%)	48(100%)
08	Computer	16(33%)	32(67%)	48(100%)
09	Fax machine	01(2%)	47(98%)	48(100%)

10	Tape record	3(6%)	45(94%)	48(100%)
11	Other indexing technique	Nil	Nil	Nil
12	Photocopying machine	14(29%)	34(74%)	48(100%)
13	Bar code	Nil	Nil	Nil

Source: Returned Questionnaire

In case of retrieval tools also, except adoption of classification tools (56%) and catalogue code (44%), use of other tools are found to be almost negligible. The above table gives us the clue that POPSIS, PRECIS, other indexing techniques and bar code system are not adopted by any library in the state.

Preferred Methods and Tools

Some of the Library and Information Science professionals engaged in these libraries expressed their views on the most useful and effective methods and tools for retrieval purpose as noted below:

a) Cataloguing (Title added entry and author added entry)
b) Classification, Cataloguing, SDI, CAS, Computer, Internet
c) Classification, Cataloguing, Open Access, Reprography
d) Classification scheme, Catalogue code
e) Classification, Cataloguing, Computer, CAS, E mail, Sears's list, MARC, Reprography
f) Classification, Cataloguing

Accessibility to the Methods and Tools

As observed by the users under study the following retrieval methods are found to be adopted in the libraries which are accessible by them to browse information resources.

Retrieval Methods

The retrieval methods adopted by the libraries as observed by the users are shown under table 3 below:

Table 3: Retrieval Methods as observed by the users

N= 321

Sl. No.	Methods	Users response	Percentage
01	Classification	301	93.8%
02	Cataloguing	316	98.4%
03	Bibliography	Nil	Nil
04	List of new additions	11	3.4%
05	Accession Register	296	92.2%
06	Index to holdings	Nil	Nil
07	Reprography (Photocopying method)	251	78.2%
08	Shelf list	32	9.4%
09	Abstract of documents	29	9%
10	OPAC	24	7.5%

11	Retrieval through WWW	51	15.9%
12	Internet Surfing	63	19.6%

Source: Returned Questionnaire

The above table indicates rate of responses of users against the methods adopted. It is seen that most of the users access to information resources through cataloguing, 316(98.4%) followed by classification, 301 (93.8%), Accession Registrar, 296 (92.2%), reprography, 251 (78.2%) and so on.

Different Systems

Different system followed in the library as observed by users communityis understood from the table 4 below:

Table 4: Different System

N = 321

Sl. No.	System	Users response	Percentage
01	Closed Access	156	48.6%
02	Open Access	173	53.9%
03	Close-Open-Access	206	64.2%
04	Subject arrangement of racks	211	65.7%
05	Classified arrangement of books	63	19.6%
06	Language wise arrangement of books	63	19.6%
07	Issue and return of books by card system	306	95.3%
08	Issue and return of books by register system	321	100%

Source: Returned Questionnaire

The users under study are familiar with issue and return works through register system (100%) and by card system (95.3%), subject arrangement of racks (65.7%), close-open-access system (64.2%) and so on.

Users' Satisfaction:

The level of satisfaction of the users on various knowledge retrieval methods and facilities can be understood from the following tables.

Level of Satisfaction on Methods:

As the table 5.shows, users are satisfied with mostly classification, cataloguing and reprography, the level of user's satisfaction, on the other methods being almost negligible.

Table 5: Level of Users' Satisfaction on methods

N = 321

Sl. No.	Methods	Level of Satisfaction		
		To a great extent	To some extent	Not at all
01	Classification	104(92.4%)	169(52.6%)	48(15%)
02	Cataloguing	191(59.5%)	109(34%)	21(6.5%)
03	Bibliography compiled by the library	-	10 (3.1%)	311 (96.9%)
04	Accession Register	-	33 (10.3%)	288 (89.7%)
05	List of new additions	-	19 (5.9%)	302(94.1%)
06	Reprography	183 (57%)	129 (40.2%)	9 (2.8%)
07	Index to holdings	9 (2.8%)	22 (6.9%)	290 (90.3%)
08	Abstract of documents	-	17 (5.3%)	304 (94.7%)
09	Shelf lists	7 (2.2%)	20 (6.2%)	294 (91.61%)
10	OPAC	4 (1.2%)	29 (9.1%)	288 (89.7%)
11	Retrieval through WWW	24 (7.5%)	13 (4%)	284(88.5%)
12	Internet surfing	51 (15.9%)	39 (12.1%)	231(72%)
13	Networking	17 (5.3%)	23 (7.2%)	281 (87.51%)

Source: Returned Questionnaire

Level of Satisfaction on Facilities

The level of satisfaction of the users on the facilities being provided by the libraries concerning knowledge retrieval activities are shown table 6 below:

Table 6: Users Satisfaction on Library Facilities

N = 321

Sl. No.	Facility	Level of Satisfaction		
		To a great extent	To some extant	Not at all
01	Readers' Ticket	74 (23.05%)	190 (59.19%)	57 (17.76%)
02	Inter Library Loan	4 (1.25%)	67 (20.87%)	250 (77.88%)
03	Book loan for home use	83 (25.86%)	101 (31.46%)	137 (42.68%)
04	Internet searching	6 (1.87%)	54 (16.82%)	261 (81.31%)
05	Networking facility	4 (1.25%)	17 (5.29%)	300 (93.46%)
06	Reprography	26(8.10%)	73 (22.74%)	222(69.16%)

Source: Returned Questionnaire

As the table shows, except reader's ticket and book loan for home use, the remaining facilities of the libraries are not satisfactory to the users.

Problems and Difficulties:

The users under study encounter a number of problems and difficulties in the use of the library through the knowledge retrieval methods adopted. Of the 321 users 294 (91.6%) responded that they encounter problems and difficulties mainly include :- Loan period of books; Lack of journal/ periodicals; Lack of internet facilities; Lack of networking facilities; Difficulty in locating specific collection/ resources;etc.Methods adopted for retrieving knowledge are difficult to understand. Their extent of problems encountered is shown in the following table7. Majority of the users do not understand the retrieval methods to some extent. The prevailing system is not conducive to them.

Table 7: Extent of Problems

N = 321

Sl. No.	Problems	Extent of Problems		
		To a great extent	To some extent	Not al all
01	Could not understand the retrieval method	41 (12.8%)	203 (63.2%)	77 (24%)
02	Staff are not cooperative	29 (9%)	173 (53.9%)	119 (37.1%)
03	System is not conducive	79(24.6%)	194 (60.4%)	48 (15%)
04	Stack arrangement	53 (16.5%)	101 (31.5%)	167 (52%)
05	Could not locate material readily	101 (31.5%)	173 (53.9%)	47 (14.6%)
06	Rendered services are not effective	100 (31.2%)	184 (57.3%)	37 (11.5%)
07	There is no reader's guide	74 (23.1%)	117 (36.4%)	130 (40.5%)
08	Lack of knowledge of computer handling	69 (21.5%)	103 (32.1%)	149 (46.4%)

Source: Returned Questionnaire

And also they have problems in locating desired information and the rendered services are not found to be effective.

Suggestions and Opinions

Towards improving the existing knowledge retrieval methods adopted in the libraries, the users also expressed their opinions and suggestions as enumerated below:

- Most of the methods are not aware by users, as such awareness programmes should be organized by the library from time to time to foster use of the resources of the libraries.

- Proper inter-library loan system should be implemented in the libraries to facilitate the users get documents/resources they need.
- Basic training on the handling of computer particularly for access to internet should be given by the libraries so that users can browse the internet resources.
- Access mechanism to information resources should be made understandable to the users so that information can be retrieved easily.
- Libraries should maintain list of new additions to the libraries to keep in touch with the new changes and developments in the concerned fields.
- Bibliographies on different subjects should be compiled by the libraries based on the resources available in the libraries.
- Guidance service can be introduced to guide the users in the process of retrieval of information.

General Findings

The major general findings of the study can be summed up as below:

- Difference is observed in adopting knowledge retrieval methods and techniques among different types of libraries, use of traditional methods being common;
- Majority of the libraries under discussion yet to start modernization programme of their library activities ;
- Most of the users are not found to be aware of the traditional as well as new methods adopted by the libraries;
- Users communities are not satisfied with the prevailing knowledge retrieval methods in their process of access to the knowledge resources available; and
- Modernisation of library system, introduction of new e-based services for the effective delivery of knowledge has become a need for the libraries in the knowledge era.

Conclusion

The present piece of research finding indicates us a number of clues on the knowledge retrieval methods being adopted in some leading libraries in Manipur. These methods play a vital role in the process of access to resources available in the libraries for retrieving the knowledge/ information to serve various purposes of the users' community. The same has a direct impact on fulfilling the demands of the users. Making them fully satisfied with the use of information resources by retrieving information through a number of methods should be the major goal of the library. Implementation of the suggestions as endorsed by the users, thus, requires to be made, in this regard.

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Management and Evaluation of Library Services

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ABSTRACT

After entering in new millennium, libraries are experiencing unprecedented rates of change, both internally and from external sources. A changing user population, technology enhancement, transformation of the scholarly communication system, digital libraries, new approaches to Management and a renewed commitment to planning and assessment throughout the organization are propelling the new library environment. The library as fixed space is no longer a constant, and there are many alternative sources of information. All these factors converge to wide spread interest in library planning, evaluation and outcomes assessment. Advances in computer technology take place fast and frequently. The library world is moving into network-based environment. Communication is the essence of the environment. Fast transmission, retrieval and dissemination of information are the norm. The web environment has changed our paradigms. We are on the threshold of a client-server environment, which promises much improved flexibility to users through MIS.

Introduction

It is not enough simply to develop measures and to collect statistics related to library networked resources and services. Indeed, as state legislatures increasingly tie budgets to performance and regional accreditation boards begin emphasizing the need to articulate outcomes, it is important for research libraries to decide what their outcomes should be and to determine how to connect measures and statistics to these outcomes at both the library and the university levels. The study process began with a review of literature concerning library and institutional assessment to understand better what other efforts had accomplished,

with an eye toward finding documented linkages between library outputs and institutional outcomes. We found that while the problem was clearly defined and its significance well appreciated and often noted in the literature, there has been little work towards actually identifying linkages and developing models that libraries could use to determine how best to measure their impact on the outcomes of the universities they support. This article discusses a process framework for approaching the issues and practices of institutional outcomes evaluation in academic and research libraries; and raises continuing questions and issues that should be considered at individual libraries and in future research, particularly with respect to the organization's cultural context where outcomes assessment occurs.

Methodologies for Institutional Outcomes Framework Development:

Content Analysis
Gather various documents to review development of current outcomes-oriented requirements, strategic plans, activities, and future directions at a variety of institutions, including project participants.

Policy Analysis
Identification and review of policy instruments adopted or under consideration by accreditation bodies, with a focus on institutional outcomes assessment requirements. Findings helped to inform an understanding of regional and national trends in an area critical to all institutions of higher education.

Site Visits
Extensive interactions and observations of institutions selected for in-depth study. Findings are critical to contextualizing and integrating insights gained from individual case documents and interviews, as well as for making significant refinements to the process framework.

Discussion Forum
The study team conducts a number of discussion groups and individual interviews regarding issues related to institutional outcomes and the role of such outcomes in terms of library planning and evaluation. The following list provides a brief summary of the key issues raise during these meetings that have ongoing significance:

• *Clarifying Outcomes versus Goals*. There is a need to resolve definitional issues and to differentiate the notion of institutional outcomes from goals and objectives.

• *Need for Specifying Clear, Meaningful Outcomes Statements.* Use of institutional outcomes statements should be adequately defined and/or operationalized.

• *Whether One-to-One Linkages Can Be Established between the Library and Institutional Outcomes.* There was considerable skepticism that specific individual activities of the library could be linked in a direct or significant manner to specific institutional outcomes. For many instances the library's role would be more indirect or as a supporting service that only contributed to institutional outcomes along with a variety of factors.

• *Concern about Linking Library Inputs to Institutional Outcomes.* One participant noted that she worked at a university library with a relatively small collection count/size. Nevertheless, the university was ranked in the top twenty of all institutions receiving federally funded research grants. Direct relationships between library input and process measures and institutional outcomes should not be "backfire" on library administrators if such relationships were inverse. More library inputs (however defined) would naturally improve the accomplishment of institutional outcomes should be carefully considered before being put forth to university administration.

• *Making Appropriate Comparisons and Identifying Peers.* Comparing a specific institution in terms of accomplishing certain outcomes may not make sense unless there is an agreed-upon peer group. The following concern should be resolved "will institutional outcomes become another 'tool' to compare one university to another—oftentimes with unintended, undesirable results?"

• *Importance of Process in Setting Institutional Outcomes.* There was a general sense that libraries should develop a process to identify and operationalize library outcomes that contribute to institutional outcomes. The library is critical in informing the University of Institutional Outcomes to which the library meaningfully and demonstrably contributes. Setting such a process is an important method for informing key stakeholders in the university of both the library's institutional role and ensuring that the outcomes to which the library has (or may have) links are appropriate in context.

• *Importance of Situational/Institutional Factors.* A useful outcomes model ultimately should recognize the wide range of situational and institutional factors that might affect the role of the library in the development of and impact on institutional outcomes at a particular campus. Situational and institutional factors that may be relevant include:

• Different missions of the university, including missions that might evolve from state legislatures and other external factors;

• Process by which resources are allocated across campus;

• Importance placed on institutional outcomes and how they are defined at a particular institution;

• Culture and traditions for roles and responsibilities of faculty, etc.;

• The physical location of the university, especially in terms of an urban versus non-urban setting;

• Organizational structure and governance structures of both the library and the larger institution;

• Planning process used in the library and at the institution;

• Role and extent of branch and/or departmental libraries on campus;
• Faculty involvement in library governance through a faculty senate library committee, etc.;

• Technological infrastructure and management of that infrastructure in both the library and the larger institution, and;

• "Responsibility-based budgeting" of units in which each unit accounts for its own income versus expenditures.

Clearly, there are likely to be a significant number of additional situational and institutional factors that would vary from university to university. The degree to which any model can take into consideration the range of situational and institutional factors may be problematic.

•*Point-of-View Toward Outcomes from Different Stakeholder Groups.* What might constitute institutional outcomes, or *appropriate* institutional outcomes, will vary from one group to another (legislators, administrators, directors, faculty, trustees, students, etc.). It could be that the outcomes from the library (as agreed-upon by library staff and administration) may or may not be those seen by university administration as important or appropriate. Is there some type of hierarchy of outcomes from different units in the institution as opposed to the institution overall? The key to setting meaningful and effective *institutional* outcomes is that they should be end results that *all* units of the institution have a stake in achieving—not just the library.

• *If/Then Models to Depict Libraries and Institutional Outcomes.* There was some support for developing multiple models for depicting the various possible situations and relationships between libraries and institutional outcomes. To pursue this possibility would require a better understanding and operational description of specific situational and institutional factors that *could* affect the way in which the library is associated with institutional outcomes.

• *Possible Candidates of Outcomes.* It would be useful to identify a set of possible institutional outcomes from which an institution might select local outcomes of interest.

• *Joint Activities/Roles Between the Library and Other Institutional Units.* Direct linkages from the library to a specific institutional outcome might be difficult to identify and measure. The possibility of identifying *groups* of institutional units that might all be working toward a specific institutional outcome. Such might be a better approach for the library to be linked to outcomes rather than considering a library activity as a single factor in producing an outcome. The discussions should reveal (a) where there is sufficient understanding of institutional outcomes, and (b) the relationship of institutional outcomes to library activities and outcomes. Discussion about (c), how an outcomes focus should be used in planning/evaluation of library services, requires much additional thought and research.

Site Visit

Site Visit should explore issues from both institutional and library perspectives, the visits focus on better understanding the manner in which each university:

(a) Sets its strategic direction with both institutional and library outcomes of interest;
(b) Articulates those outcomes and the results desired;
(c) Assesses whether the desired outcomes have been achieved; and
(d) Uses outcomes-related concerns and data in decision-making.

The team conducts a number of in-depth interviews and group discussions, with both a variety of line and administrative librarians, as well as with senior university planning officers. In addition, they were able to review and discuss a wide range of relevant documents, many of which were collected for further review and analysis. Finally, they might benefit from observing library activities at both locations. The study team may gain great insights into both institutions from very helpful informants who were without exception extremely generous with their time and contributions. The study of these institutions, separately or

together, was not an end in itself, and neither was in any way evaluated. Rather, both should select as two rather different organizations within the same state university system, providing an excellent opportunity for making comparisons and identifying contrasts. While the teams themselves are arranged in a structure with some formalities that have evolved (and continue to evolve), and the Director operates within the larger structure of the university, every individual staff member has the opportunity and is expected to participate—at one time or another—in virtually every facet of library operations. One of the hallmarks of this approach is the overt empowerment of each individual with corresponding responsibilities, and mutual reliance on everyone else exercising his or her team-based power responsibly. What is more, everyone interviews or observes—regardless of regular job duties or position—was mindful of and conversant with the full array of the library's strategic and operational issues, including budget details, short-term objectives, and long-term goals. As with all human endeavors, there are always inefficiencies and uncertainties. Along with many instances of routine progress made through unusually egalitarian methods, the team may observes a fair amount of time expended on inter- and intra team monitoring and adjustments, orienting and reorienting. This was not necessarily counterproductive, but it appeared that the absence of explicit goals, directions, and standards from the top down resulted in much confusion over the need to generate such from the bottom up. By and large the uncertainties and confusion were viewed as an investment in a continuously learning organization where every individual, ideally, is highly knowledgeable and focused on quality customer service and the organization's greater good (i.e., the university's outcomes of interest). A more rigid structure with well-established and clearly communicated goals, directions, and standards can be quite empowering for employees at any level, albeit in a different sense from that of a flat organization. Line employees can focus on their particular jobs and not on being an integral part of managing the organization. Moreover, the organization's managers are mindful of the university's mission, values, and outcomes of interest, which are conveyed throughout the library even if every line employee is not conscious of it. The key insight regarding the outcomes framework development that arose out of the site visits was that, notwithstanding the obvious—and in ways profound—differences, universities invest a very high importance in the library directors. The directors' role and the way they exercise it is not to the exclusion of the importance of other library staff, for all interact in one way or another with various campus customers and stakeholders, and the staff are at the heart of the day-to-day operations. But the directors are the public and official champions of the library on campus among other directors, the provost, and the president. The administrators at universities apparently convey to the library an appreciation (or assumption) of the library's role

in contributing to the larger institutional values, and rely on the library directors to present the achievements and contributions of their libraries in a manner the directors deem appropriate. Thus, our understanding is that the library directors are free to present the library to senior administrators and peers in whatever manner argues best for what the library does to contribute to its university, without any imposed requirements as to substance. This is highly significant: at present these two very different library organizations are similarly situated vis-à-vis presentation of the library as a whole to the academic community it serves. The directors and associated staff must define the library—and redefine it continually as their local and larger environment evolves; they must make their contributions to their respective communities, ultimately in terms of current outcomes of interest; and they must demonstrate how they are actually contributing to the achievement of desired outcomes. But in the absence of internally imposed measures, and in the absence of widely recognized measures that support such a demonstration, clear linkages between library resources and services—electronic, networked, or otherwise— and the institutional outcomes they must ultimately support, remain unspecified.

Accreditation Review

The major focus was to help illustrate: (1) the need for university research libraries to demonstrate the outcomes of electronic and networked services; (2) the need for such libraries to demonstrate any outcomes apart from electronic and networked services; and (3) the need for research universities to show the connection between the use of electronic and networked services and the fulfillment of their missions/goals. With regard to the need for university research libraries to demonstrate the outcomes of electronic and networked services, the standards and supporting documents contain few references to electronic and/or networked resources and services. Only five instances of the terms *network* and/or *electronic resources and services*—or similar terms such as *electronic bibliographic databases* or *online catalogs*—were found. However, relatively general but related terms like *information resources and services*, *information technology resources and services*, or *information technologies*, were more commonly used in context. This broader terminology clearly includes electronic and networked resources and services, and its increasing importance in accreditation standards underscores the growing expectation that academic libraries demonstrate how these resources and services support student learning and faculty research. Regarding the need for libraries to demonstrate any outcomes apart from electronic and networked services, the emphasis on assessing student learning and other outcomes is generally stronger in those standards that have been revised since 1998 or are currently undergoing revision. Institutions should include in the self-study a review of course

completion, graduation rates, state licensure exam pass rates, and other data as appropriate to the mission of the institution and the programs it offers." Regarding the need to show the connection between the use of electronic and networked services and the fulfillment of missions/goals, we found that while there may not be a need to demonstrate the *outcomes* of electronic and networked resources and services, there is a need to provide evidence that documents the *connections* between their use and fulfillment of the institution's goals. Lindauer also found that university libraries should make more explicit and public the connections among the following:

• How their resources and services support institutional goals (in some of the standards, appraisal of annual institutional goals and progress in their accomplishment is suggested as a type of evidence contributing to institutional effectiveness);

• How their resources and services are used, by whom, and the effects of this use; and

• How their strategic plans and assessment plans support the institution's planning documents and assessment process, and how the findings of the library's assessment activities contribute to the achievement of the institution's mission and goals. The key observations from Lindauer's review (as updated) follow:

• The majority of the outcomes and outcomes-related statements that refer to libraries and information resources are located in sections of the standards that deal with the education program and institutional effectiveness.

• The use of library and information resources is connected to student learning outcomes in six of the documents. Inclusion in course syllabi and integration of library use into the undergraduate curriculum are offered as measurable indicators for assessment purposes in two of the documents.

• The library's role in helping students develop information literacy skills is an important student learning outcome directly referenced in four of the documents and in the "Best Practices for Electronically Offered Degree and Certificate Programs" developed and endorsed by all eight accrediting commissions.

• Assessing student needs, perceptions, and levels of satisfaction with educational support services (i.e., library and learning/information resources and services) and demonstrating that the findings from these

user studies are employed in program improvement are fundamental expectations of all the regional accrediting commissions.

• Appraisal of annual institutional goals and progress in their accomplishment may constitute evidence contributing to institutional outcomes, or in some of the documents the phrase used is "institutional effectiveness."

• All of the standards describe the need for an assessment or evaluation plan to document that the findings are utilized for program improvement. Some of the documents clarify this requirement to mean that each program or unit should have an assessment plan.

• Several of the standards documents refer to the campus climate or the institutional environment that supports teaching and learning. Three specifically connect library and information resources and services to the quality of the learning environment. The implication is that universities libraries should clearly describe their resources and services that directly support the learning environment, how these are used, and what effects they have on students and faculty. The role of accrediting bodies is widely acknowledged but its import cannot be overstated. First, there is the obvious matter of gaining or maintaining accreditation with a regional commission, as the failure to do so would supersede all other organizational concerns. Secondly, their increasing focus on outcomes assessment could be a bellwether for more requirements of systematic outcomes measurement and outcomes based justification from a range of stakeholders, including universities and state legislatures.

Survey of Library Members

The following two lists contain a series of insights and conclusions drawn from the survey as a whole. The first list pertains to the university level, while the second focuses on the university's library. Regarding the university:

• University mission statements tend to be similar. All such statements submitted for the survey contain education, research, and service components.

• Most university strategic plans make some mention of the library, particularly with regard to information technology and electronic resources in support of teaching, research, and learning.

• Several universities have goal statements that either apply to, or otherwise make mention of the library, especially regarding increasing

information literacy of students and supporting academic programs and faculty research.

• The documents reviewed, for the most part, do not contain specific outcome statements per se, but typically state a vision for the university and goals that describe an ideal or future state of the university.

• No document mentioned specific ways to assess programs or units on campus. It may be that this kind of information would be found in other university documents or that assessment tends not to be a high priority on campus, at least not at the institutions which responded.

• At universities where budgets appeared especially constrained, the university seems to be more focused on budget justification. At such a university the library is typically expected to demonstrate how it helps the university toward its mission.

• Communication from the provost (or other senior administrators) articulating specific goals to the library seems to be vital in maintaining a library that can meet the needs of the campus. Respondents who stated that goals were vaguer or not formally articulated seem to have the most difficulty with getting bigger budgets. Regarding the library:

• Almost every library mission statement included in this analysis stated that the library existed to support the teaching, research, and service mission of the university.

• Many libraries' vision statements expressed an increase in the amount of information technology and electronic resources owned and used by the library, and asserted that this would help them serve customers better.

• As the staff at one library pointed out, environment is the most variable factor in strategic planning. Libraries must know their current environment well and be able to plan well for their future environment.

• Many libraries started creating strategic plans in only the last few years, but find them vital for guiding the work they do.

• Many libraries are required to support the goals of the university and use that as a starting point for setting their goals.

• Few libraries have outcomes explicitly stated in their strategic plans. Many, however, do articulate desired states for the library.

• Libraries have to be selective in the resources and services they offer because budgets do not allow them to do and buy everything they want. Some libraries noted that budgets are so low that they have had to cut vital resources (such as journals) and services. These libraries see creating a strong digital collection as a way to offer more access and to share resources with other libraries.

• Libraries are doing many things to support other units on campus. They work to make sure that programs have the necessary information resources, work with new programs to get resources in place, go into classrooms to teach information literacy/research skills, and help faculty create digital collections. Many of these conclusions concern similar topics also identified in the discussion forum findings.

Discussion

Lindauer describes five assessment domains for libraries and connects goals of the university with activities and measures within the library. Assessment domains for the teaching-learning library that she listed include: (1) learning outcomes and enabling instructional outputs; (2) faculty/academic staff teaching effectiveness, scholarly productivity, and professional development; (3) institutional viability and vitality; (4) access, availability, and use of teaching-learning recourses; and (5) infrastructure—human resources, collections, and equipment/facilities. Initial framework depicted a basic process by which an academic research library helps meet the goals of particular departments and functional units within a university, which in turn contribute to institutional goals, while acknowledging that libraries may also contribute more directly. In the early model, this idealized process begins with the university administration. From a standpoint of maintaining viability, vitality and core values, the model reflects goals that match the institution's various academic and support units. From these goals and the needs of the various units, decisions about budget allocations should be made. The library receives funding, gains awareness of the needs of the university generally and of other campus units, and makes decisions about which resources and services to purchase and to offer its patrons. I hypothesized that there is either an explicit or tacit expectation on the part of the library and university administration; an expectation—in the absence of feedback to the contrary—that actual investments in the library and customer use of library resources and services match the values and goals of the institution and meet the needs of other academic units. In the ideal case, benefits result, other units are supported, and the goals of the institution are achieved. Outcomes at the institutional level are measured against values and goals and help shape future goal setting and budgeting decisions. Although it does not show how *particular* services and resources contribute to outcomes, the model does describe

how a library Director or director can begin thinking about targeting library services toward the outcomes of interest to the university, and measure their contributions and impacts more effectively in actual outcomes. Libraries' contributions to actual university outcomes will typically be indirect and/or partial; thus, actual outcomes at the university level will not necessarily give a clear indication of achievement (or not) of success from the library level. Linking measures to outcomes cannot be done without first considering what outcomes are desired and what effects achieving those outcomes could have. Library personnel can then explore surrogate and/or composite measures that are accurate and reliable indicators of actual outcomes of interest. University research libraries are established to support the broad research, education, and service goals fundamental to the mission of the institutions they serve. Beyond helping to fulfill the university mission, a research library must be able to help the larger institution reach its more concrete but shifting goals. These goals may be articulated in strategic planning documents, in conversations with the provost or academic directors, in fulfilling regional accreditation standards, or in state legislation. It is important to be highly aware of these goals and to be able to target library resources, services, and programs to help meet institutional goals. Doing so is critical to the university research library being seen as a vital, contributing part of the university. To address these goals and measure them effectively, it is important to ask three key questions:

1. What is the desired operational state of the university?
2. How can the library help the university achieve this state?
3. How will the library know when it has been successful in helping the library achieve this state?

The first question helps the library better understand its operating environment. Knowing what the university wants to be now and in the future helps library administrators understand what customers need. The second question helps in making decisions about which of the many goals of the university are helpful for the library to focus on. In addition, answering this question helps the library make decisions about what action it must take to contribute to the fulfillment of those goals. Existing services and programs may address them, programs may have to be fine-tuned and resources upgraded, or new programs and resources may need to be developed and acquired. The third question helps the library craft the measures that will provide indications of success. This is extremely important and must be thought about carefully because direct outcomes measurement is often difficult or impossible. It may be necessary to develop several measures that work together to indicate an outcome state or to use surrogate measures such as perception surveys. One approach for developing such measures is described below. The order in which these questions are addressed is also vital. Before

measurements can be derived, library administrators must know what they want to measure and how the library's impact is likely to occur. Without this perspective and focus, outcomes measurement cannot be targeted and loses meaning. In other words, it is very difficult to gain useful insights about outcomes when measures are not designed with outcomes explicitly in mind. Libraries may currently collect measures that can provide some indication of success of a particular program or service provided to customers, such as user satisfaction surveys; however, it is important to think broadly—with the desired state in mind and not simply use the measures on hand because they are easy to collect or because a lot of time and effort has been devoted to collecting them. In most cases, a single measure on its own is not enough to indicate whether a research library is successful in a given area. To accurately assess the success or quality of an academic library, measurement should be implemented at three key levels:

- Resource Level (Inputs);
- Use/Capacity Level (Outputs); and
- Outcomes Level.

The following example illustrates this approach: Imagine that information literacy is a theme for your university. How can you have a meaningful impact in this area? One way might be an effective bibliographic instruction (BI) program that reaches many students. Ask the question, "What would constitute success for our BI program?" Once you have articulated the answer, you can begin to develop measures for the effectiveness of your BI program (i.e., professor perception of student performance before and after BI program, etc.). It is also important to know how many students can be reached with the program, so capacity and use measures are needed as well. Because the program needs staff and materials must be created, it is important to have resource measures that indicate what goes into the program and whether more or different resources influence the effectiveness or success of your program. Here is another example in the networked context: Imagine that your university wants to attract a "world class faculty." There are many ways that the library can have an influence in this area. Capitalizing on resources unique to your university is one way to "brand" your library (and in turn university) as having expertise in a particular field (or many fields). By digitizing collections and making them widely available, the library can attract scholars all over the world to these materials. As a result, scholars will begin to associate these unique resources with your university and may even be attracted to your faculty. There are many ways to measure whether or to what extent there is a linkage. For instance, you could survey new faculty members and ask if they used your library's materials before joining, which materials they used and for what, and whether this influenced their decision to join the faculty.

Resource Level Use/Capacity Level Outcome Level

What do we need to ensure How much is a service, resource, or what are the results of success? What program being used? What a program or process? What funding level is who is using a service, resource, or How successful or appropriate or necessary for a program? Effective is the library? Particular program? Do we need more of a particular why are people using a particular How effective do resource in order to have a more program? Customers perceive effective program? Your programs to be? What beneficial effects are you having on your customers? How could a program be changed to better suit the needs of your customers? In this example, it is important to know who is accessing the collection, and which parts of the collection they are using most often. This can indicate which parts the digital collection users are most interested in and what collections should be more fully developed. Additionally, it would be helpful to know which resources are devoted to creating this digital collection, and if increasing, changing, or upgrading resources has an effect on the desired outcome. Following this approach, however, may lead to the formulation of a wide range of performance measures and statistics. Selection of the precise measures needed to evaluate an electronic resource or service can be especially difficult, even for libraries that have undertaken processes similar to those described above. Therefore, it is important to have a framework to assist in choosing measures to gain insights into the use and uses, management, and reach of networked services and resources in specific areas or across a number of areas.

Challenges Related to the Use of Institutional and Library Outcomes:

Academic libraries should develop a process to identify and to operationalize library outcomes that contribute to institutional outcomes. The library must play a major role in informing the University of Valued Institutional Outcomes to which the library contributes. Setting up such a process is an important method for informing key stakeholders in the University of both the Library's Role in institutional outcomes and ensuring that the institutional outcomes to which the library has (or may have) links are appropriate. At some level, this process will be developed and/or refined collectively by the Library membership and related academic library associations. However, fundamentally the process and implementation is necessarily local, and the need for better orienting internal library operations to external outcomes may be necessary for some institutions. Because each university has different processes for information sharing, decision-making, and mission fulfillment, it is important that each university library identify, understand, and master the established local process. Libraries obviously must work within their particular organizational framework. Therefore, to maximize contributions to university outcomes, the library must orient itself within

its local framework, and apply that situation to its fullest advantage. An important factor that contributes to an understanding of the local situation is sensitivity to the differing points of view of various stakeholder groups. What might constitute institutional outcomes—meaningful and appropriate institutional outcomes—will vary from one group to another (directors, faculty, trustees, students, etc.). It may be that the outcomes from the library (as agreed-upon by library staff and administration) may or may not be those seen by university administration as important or appropriate. Developing a process to address these potentially conflicting stakeholder concerns at the local level is particularly vital.

When this component of the study began, we developed and refined a number of questions for use in structured interviews and discussion forums. They were designed to help the study team explore the general issues and particular circumstances affecting a variety of institutions. However, asking and answering many of the questions will also help libraries when conducting an environmental scan, developing an assessment plan, or otherwise engaging in a strategic planning process. We intend and hope that these questions will help to stimulate the process of outcome-oriented organizational change at all academic libraries and their institutions.

- Is there a culture of assessment at your university? At your library?
- How does your university articulate its core values?
- Are these values clear? Defined? Measurable?
- Are these values clearly articulated in the context of the library?
- Does your university measure itself—its outcomes—in terms of its core values?
- How?
- What measures/statistics/indicators does your university routinely collect?
- How does the analysis of these data reflect the values of the institution?
- How does your university administration use its outcomes data and analysis to hanger and improve its operations?
- How does your university administration use its outcomes data and analysis to articulate need for improvements or changes in the operations of the library?
- How does your library use university outcomes data and analysis to improve the operations of the library?
- Has the culture of assessment remained constant at your university (and at your library), or has it changed relatively recently?

- If it has changed, what were the causes of the changes? Does it change often?
- If it has remained constant, does this reflect rigidity in the thinking of the administration as a whole? Does it reflect helpful stability?
- What does your university expect from the library in terms of contributing to university outcomes?
- Does the university make these expectations clear?
- What do you need to know to make them clearer?
- What does your university expect from the library in terms of reporting data?
- How receptive do you believe your university administration is or would be to library reporting based on outcomes assessment?
- Does your library currently focus on campus wide, university-based outcomes?
- If yes, how does your library determine which outcomes to focus on?
- How are you linking or matching the data you collect with those outcomes?
- How do you identify those relationships?
- Does your library collect data on its outcomes (impacts, effects)—and/or on university outcomes—that occur outside the library's domain?
- If yes, how?
- If no, is it clear how that could be done at your institution?
- What obstacles do you know of—or perceive or expect—regarding collecting university outcome data across the campus?
- How do you see the way you assess your library's performance changing in the next few years?
- Why?
- How should it change?
- Assuming your library does not already do so, if your library were to measure and report its data in terms of university outcomes, would that affect the way the library is viewed and funded by your university's administration?
- If yes, how would it change?
- Why?
- How difficult would it be to effect that change?
- What are the key activities that your library does to support the research, education, and service goals of your university?
- What kind of formal or informal data does the library collect that let you know you are supporting these goals?

- How does this play a part in determining the types of resources and services you offer?
- How could this play a greater role?

The Need for New Perspectives and Additional Research

Although the thrust of this study was on developing statistics and measures for academic and research libraries in the networked environment, the study team also investigated institutional outcomes in higher education and the role of the library in facilitating the accomplishment of such outcomes. The study team's work in this area over the past year underscores the need for new perspectives and assumptions regarding outcome-based assessment and the need to continue research in this area. The framework offered here for approaching such assessment is but a first step. To some degree, the importance placed on institutional and library outcomes vary by institution and by its stakeholders. Some institutions of higher education believe an outcomes-oriented view toward planning and evaluation is essential—others do not. There are widespread views about the usefulness, application, and need for such an approach. Thus, there is a great need for empirical studies that can pursue a number of the topics and issues outlined in this paper. Such studies could demonstrate to what extent and in what manner higher education institutions (including libraries) can be more effective and have a greater impact (however defined) because of an outcome based approach. Finally, it is important to note that an outcomes-based perspective might best be seen as but one of a number of types of approaches to support planning and evaluation in higher education. Traditional input-output models of library operations and associated statistics and measures, goal-based assessment, service quality approaches, expert-based standards, and others can be used *together* as a means for improving the overall performance of institutions of higher education and their various units. Indeed, additional research that explores how best to integrate these and related approaches might be most fruitful to pursue in the future.

Next steps

Evaluation is never completed. The purpose of any program evaluation is to provide data to decision-makers for the improvement or alteration of the program. Further, the first evaluation of any program can do no more than provide a baseline for future evaluations and decisions. Both of these points are true of this evaluation effort. There is therefore work that needs to be done in the future on two fronts: decisions regarding the implementation of recommendations from these evaluations for the Library service, and the establishing of frameworks for future evaluations of Libraries.

Decision-makers must then decide which recommendations from these evaluations to implement, based on these future objectives. Whatever directions and objectives decision-makers determine to be appropriate for the continuation of Library, evaluation will be necessary to determine if Library is accomplishing them. There are three evaluation issues that will be important, regardless of specific directions and objectives taken by Library: self-assessment, cost, and sustainability. While the evaluation team would be happy to continue to work with Library, it is desirable in the long run for Library to develop the capability to perform its own evaluation, both across the entire service and for individual participating libraries. Such self-assessment will require a database that is easily searchable by both Library decision-makers and representatives of participating libraries. A web-based database is desirable for this purpose. Work that will be necessary in the design and implementation of this database will include: determination of the requirements for such a database by the SLNC and participating libraries, and the development of a range of reports in light of these requirements.

If the Library service is to become self-sustaining, it will be necessary to be able to determine the cost of operating the service, both across the entire service and for individual participating libraries. Future evaluation work will therefore be required to develop methodological, data collection, and reporting processes to produce cost-per and cost/benefit indicators. These measures and analyses will allow the determination of the return on investment (ROI), both for the state and for individual participating libraries, from the provision of the Library service. If the Library service is to continue to exist in the long term, it will be necessary to identify the most appropriate model for insuring its sustainability. Future evaluation work will therefore be required to identify requirements for funding, staffing, and other models from participating libraries, state library staff, and others. Work will also be required to identify funding, staffing, and other models currently in use by other statewide services, and to explore the strengths and weaknesses of these models as they might pertain to Library and the conditions and situation in State.

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Marketing of Library Information Products and Services in Indian Libraries

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ABSTRACT

In recent years, libraries in developing countries have taken initiatives to introduce information technology products and services to add value to their services. The advent of new technologies such as dramatic increase of digital storage media; convergence of telecommunication and broadcasting. The availability of wealth of marketing information products accessible through the internet and also increasing reduce cost of information resources in the market place. Make it possible for libraries to introduce information products and services to fulfill information needs of their customers. Libraries should promote the use of information as an integral past of library information products and services.

This paper makes an attempt to identify the need for the marketing. Its characteristics and thereby suggests the information management cycle. That may be designed and employed for introducing the marketing concept. The paper advocates marketing as a tool to vitalize the products and services and to make their optimum uses in modern era.

Introduction

A society that consumes and generates the most knowledge and information is the strongest society. The information industry has grown dramatically in services, revenue, and coherence over the last decade. Though the marketing of information services is a concept of comparatively recent origin, it has now emerged as an important areas for libraries and information centers. Marketing covers those activities that connect the organization to those parts of its outside world that use, buy, sell or influence the outputs it produces and the benefits and services it offers (O' Shaughnessy, 1992). As Kotler points out, organizations such as museums, universities libraries and charities need to market their causes and their products to gain political and social support as well as economic support. One of the major barriers to operating a profitable information business is the lack of business expertise among librarians and information scientists. Marketing is a

comprehensive term that describes all the processes and interactions that result in satisfaction for users and revenue for the information firm.

Libraries and information centers have begun to realize that marketing of information products and services is an integral part of administration, especially as a means for improving user satisfaction and promoting the use of services by current and potential users. Three main factors, namely the information explosion, the technology revolution and escalating library costs are responsible for encouraging the library profession to develop a marketing approach in its operations and services. Some information service managers feel that marketing is inimical to the nature of their activities. But with increased competition in the world of information, marketing is a factor for survival. At the same time, there is a common misconception that promotional activities alone constitute marketing.

Information Management

Information Management is managing the processes of selection, collection building, processing, controlling and dissemination of information in an organization. Information management can help an organization recognize and use the potentials of the resources of information and information technology. (Brenner 2000). Librarians have a significant role to play in Information Management. Considering the Information Management cycle, one can find that librarians have a role to play in almost every step in the information-user matching process.

Information Marketing

Marketing is planning and managing the organization's exchange relations with its clientele. It consists of studying the target market's needs, designing appropriate products and services and using effective pricing, communication and distribution to inform, motivate and serve the market. The American Marketing Association defines marketing as those activities which direct the flow of goods and services, from production to consumption.

The following information marketing concepts are:-

(i) Marketing Activities
(ii) Principles of Marketing Management
(iii) Marketing Techniques
(iv) Marketing Strategy
(v) Creating a Market

Marketing Activities

Market Profiling

Market profiling is an important marketing activity, which is done in obtain marketing information. It is necessary to identify the market scope to formulate appropriate policies. Market profiling should consider:-

- User affordability
- Extent of use
- Relevance of the service to users
- Repeat customers
- User preferences
- Staffing

Product Planning

Product planning is the marketing activity concerned with developing a product that satisfies customers. Management must decide:-

- Who should be the user groups?
- To whom the information services/products should be targeted?
- What should be the services/products that can be produced and marketed to the different target groups?

Pricing

Pricing is the marketing activity that determines the prices of the products basis of costs as well as market factors such as distribution channels, discount structure, competitions' prices, ability or willingness of customers to pay and so on.

The following are questions to ask during pricing:-

- What are the costs involved in the generation of services and resources?
- What factors needs to be considered in arriving at costs?
- Should the information services/products be given free? If so, to whom and why?
- What would be the impact in relation to the value of a product, if given free?
- What should be the criteria for pricing?

Promotion

Promotion is the activity that covers all aids to sales. Promotion stimulates demand and increases sales. Usually promotion moves the product toward the customers. It involves mechanisms that inform the target groups about the products available, services and resources offered by the libraries/information centers.

Questions to ask regarding promotion:

- To whom is the promotional material directed?

- What is the message?
- What promotional mechanisms are available?
- What points are to be considered in the design of a promotional package?
- What is the role of the library staff in promotional activities?

Distribution

Distribution is the marketing activity concerned with distributing the products from the manufacturer to the customer, making the available and easy to buy. Following are the major channels of dissemination:-

- Interpersonal delivery
- Group personal delivery
- Strategic placement
- In-house dissemination
- Local depositories
- Mass media
- Broadcasting
- Mail
- Telephone
- Computer network

Principles of Marketing Management

Modern library services should be based on the following marketing principles:-

- The company must have an active attitude towards the market. It cannot expect customers to by a resource simply because it is produces. The management must actively study the market, persuade customers, promote the product and organize distribution.
- Marketing should be given at least as much importance as other basic functions such as administration, production and finance.
- The marketing function must be "Integrated". This means that the various marketing considerations must be taken into account in the decisions of all the managers, not only those directly concerned with sales.

Marketing Techniques

Management is required to control the application of a range of skills and techniques in marketing, generally derived from practical industrial experience and from modern social sciences such as economics, statistics and applied psychology. Marketing skills and techniques can be divided intor four broad groups:

- Those used in order to obtain data about the market.

- Those used to create and stimulate demand.
- Those used to analyze costs and other marketing factors.
- Other practical skills and techniques.

Marketing Strategy

Not all enterprises can afford to use all the marketing techniques. Furthermore, different situations require different techniques. The marketing manager must be able to select those techniques that are necessary for a particular product in a particular situation. Therefore, successful marketing includes the art of deciding which techniques to use in different situations. Marketing strategy also means selecting various techniques in proper proportion and balance.

Creating a Market

The proper and active use of marketing techniques provides the possibility of creating a market. Here are three examples:

- Increasing the present volume of sales can create a market.
- Creating a market can mean waking up a sleeping market.
- Creating a market can involve creating a demand that did not exist at all.

Thus the products are made and the market is created as a result of effective marketing strategy.

Library Resource vs. Library Services

Customer products are defined as anything that can be offered to a market to satisfy a need. That means products tangible and intangible. Library products include books to peruse or check out, Web access, homework centers, story hours, computer aided instruction. Any one retail store can either specialize in a product or have a product assortment. Libraries can also specialize, but most offer a wide range of products.

When it comes to offering a range of products within one entity, libraries can probably best be compared with shopping malls (no, I did not mean to say bookstores). A shopping mall shares these characteristics with libraries: There's a group of individual departments managed as units (like the children's department, local history and genealogy etc.) and product offerings are based upon an analysis of the community served. Changing norms, such as women working outside the home, burgeoning numbers of children under 5, diversity of ethnic groups, and increased desire for online access, all affect both shopping mall and library products.

Professional Skills for Marketing

Library personnel require the following professional knowledge and skill for marketing information and library services.

- Perception of user needs and ability to obtain feedback from users.
- Technical knowledge, such as ability to use the internet.
- Knowledge of various marketing strategies for promoting information skills.

Difficulties of Marketing Information Services

Factors which characterize the difficulties of marketing information services are:-

- The relatively low level of knowledge and lack of agreement on user requirements wants and needs.
- The subsidized non-market environment in which most scientific and technical information products and services are used.
- The virtual impossibility of estimating the value contributed by information products and services to the efficiency and conduct of research and development and the advancement of scholarly pursuits.
- The general economic un sophistication of those, mostly schooled in the humanities and the non market oriented library school environment, who purchase information products and services.

Hence the subjective concept of information makes marketing difficult. The value of information varies with the purpose and is also time and space dependent-hence, the difficulty in projecting the benefits of marketing information. There is also difficulty in estimating the contribution of information to R & D activity and to the advancement of scholarly pursuits. In addition, the reluctance of librarians and other information professionals to engage in marketing adds to the problems.

Conclusion

The library can be called an information market and the library user is a consumer of information. Information is a vital resource for national development. Increasing realization of the role of information has resulted in the establishment of information system to provide a variety of information services and products. It is an essential step in the planning, designing and use of such services and products for optimal use of information. Library acquisition, organization and dissemination must be based on the modern concept of marketing to achieve reader satisfaction. It must endeavor to nurture culture of customer service to enhance its image in the eyes of the users.

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Measuring Service Quality of Libraries Using 'Servqual'

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ABSTRACT

The quality of any service or product has become the need of the hour. A quality product/service attracts the potential customers and vice versa. A quality product is helpful in enhancing the reputation of the firm and in increasing the market share and profit. In order to enhance or maintained the service quality, periodic assessment is required. The level of service quality is the difference between perceived service and the client's expectation. Gap Analysis is one of the best procedures to help and lead an organization to not only improve their processes, but recognize which processes are in need of improvement. The present paper discusses the quality, quality concept in libraries, ways of measuring service quality, SERVQUAL, Gap model of service quality

Key word: - Library service quality, Servqual.

The Quality

Quality has become the buzzword and symbol of survival and growth in manufacturing and commercial sector and has also raised its wings in information sector. Escalating costs of information products, shrinking budget and increasing fees have enhanced the accountability of university libraries. Application of IT in libraries has extended the scope of library services and accordingly enhanced the expectations of users for high quality information services. All these problems posed serious challenges for efficient information management which calls for immediate concern of university libraries to have a careful investigation of skills, management philosophy, expectations and perceptions of customers. Quality, therefore, is no more an option but an urgent need for survival and growth in the prevailing competitive environment. It is the need of the hour that Library should increase the quality of Library services as per the expectations of its users.

According to Sarkar (1995) "quality of a product or service is the ability of the product or service to meet customers' requirements".

Brophy and Counlling (1997) defined quality as the value of goods and services that meets customer needs and expectations at a cost that represents value. According to American National Standards Institute (ANSI) and American Society for Quality Control (ASQC), "Quality is the totality of features and characteristics of a product or service that bears on its ability to satisfy stated or implied needs." This widely adopted definition of quality instead of being operations focused is customer focused. At the centre of this definition is satisfaction of customer's needs. When a firm's offer is able to meet or exceed customer expectation, the firm has delivered quality.

The Quality Concept in Library

By the 2nd half of 1980s libraries were considered good or bad by its holdings of books and journals, number of professional and non-professional staff, annual budget, etc. These measures were adequate when the primary function of libraries was to acquire books and journals. Pritchard concluded that "the future vitality of libraries in academia will be dependent on whether they can dynamically and continually prove their value to the overall educational endeavor.

The primary focus of a library is service, and service quality is the most studied topic in marketing research during the past decade. The world 'quality' emerges from the latest trend in business and industry but it is closely linked with existing research and practice in the libraries. Library effectiveness – an earlier term for quality has provided an important building block on which advancement in library quality management can be based.

The Element of quality service in libraries is implicit in the 'Five Laws of Library Science' as stated in 1931by Dr. S.R. Ranganathan, who is regarded as the father of Library Science in India. The Fourth Law of Library Science 'Save the time of the Readers' reflects that library users are the axiom of the library service system.

Orr' (1973) in his classic study introduced the concept of 'library goodness' and suggested 'quality' of library service and 'value' of library service as the determinants of library goodness. He further clarified that quality may be understood in the terms of "how good is the library" and value in terms of "what good does it do". Orr presented that

'resources' of a library determine its 'capability'; the 'capability' determines its 'utilization', and the 'utilization' determines its 'beneficial effects', and the 'beneficial effects' in turn determine the 'resources'. The quality of a library may be determined on the basis of resources, capability, and utilization, whereas value is determined on the basis of utilization and beneficial effects. In his opinion 'effectiveness' and 'benefits' were closer in meaning to the term 'quality' and 'value' respectively but in literature effectiveness and benefits were having wider connotations. De Prospo (1973) described library effectiveness as a measure of library collections, facilities and staff. Du Mont pointed out that the service which satisfies to a high degree information and research needs of faculty, students and other users and contributes to the success of educational and development goals of the institutes in an effective manner is known as quality of service. Line doubted the quality/value distinction made by Orr in 1973. He pointed out the involvement of subjectivity element in judging quality and value. He defined four measures: benefits (long-term), effectiveness (short term), cost effectiveness (value for money), cost benefit (long term benefits for money).

Brophy and Coulling pointed out that from effectiveness point of view quality and value are separate but from quality management point of view both the questions of library goodness are not separable because customer can judge both quality and value. Quality and effectiveness are doing right things only, whereas Girja Kumar considered quality as doing things right and total quality as doing right things only. Accordingly, quality or effectiveness is one of the measures of studying library performance. Other measures of total performance or total quality of library are efficiency, cost effectiveness, economy, market penetration, impact, costs, productivity, appraisal, etc. Efficiency means doing thing rightly. It also means getting something done quickly, and at minimum cost.

The system components provide the framework for formulating the definition of quality and quality management. In other words, quality is the ability or capability of library services, products and consultation to meet the requirements of users. Quality management is defining the library user (customer), understanding his requirements, finding out library's capability, and in case of mismatch changing either the customer definition or capability of library and specifying library's requirements to university authorities, external venders and suppliers and internal staff.

Ways of Measuring Service Quality
Service Quality may be measured in three ways

Quality Standards
The library of the University of Central Lancashire is considered as the first library to implement ISO 9000standard. Date and Gokhale (1999) studied the ISO certified libraries in Mumbai and compared the results with that of non-certified libraries and concluded that implementation of quality standards in a library would improve the quality of library services. Verma (2002) in his study concluded that total quality management approaches were preferred to ISO 9000 and is of the view that use of quality standards requires more innovation and initiation.

Benchmarking
Benchmarking is a process of comparing an organization or its services/products with others. By this process an organization may identify, understand and adapt outstanding practices being followed in the other organizations. In benchmarking one organization is considered as standard for a service by the following organization. Organizations study and evaluate the services of similar organization(s) in order to establish best practices. Benchmarking consists of planning, collecting data, analyzing the results, implementing the changes and evaluating the progress.

Consumers' Study
Customers are the best judge for whom the services are provided. If the library users are fully satisfied with the present quality of library services than everything is good and so as the reputation of the library. If the customers are not satisfied with the service quality of the library then the authority may take a decision to identify the major items of the services to be assessed through questionnaire, interviews or observation. One the problem is diagnosed; library may try to bring the level of quality up to the level of user expectations.

SERVQUAL- A Measuring Rod of Service Quality
In the early 1980s, the impetus to measure and evaluate service quality arose from the marketing discipline. A repeated theme in the marketing literature is that service quality, as perceived by consumers, is a function of what customers expect and how well the firm performs in providing the service. Recognizing the centrality of customer perceptions of service quality, academicians sought to devise methods to assess customer views of quality service empirically (Cook and Thompson). Among the most popular assessments tools of service quality is SERVQUAL, an instrument designed by the marketing research team of Parasuraman, Berry and Zeithaml (PB&Z). Through numerous

qualitative studies, they evolved a set of five dimensions which have been consistently ranked by customers to be most important for service quality, regardless of service industry. These dimensions are defined as follows:

Tangibles: appearance of physical facilities, equipment, personnel, and communication materials;

Reliability: ability to perform the promised service dependably and accurately;

Responsiveness: willingness to help customers and provide prompt service;

Assurance: knowledge and courtesy of employees and their ability to convey trust and confidence; and

Empathy: the caring, individualized attention the firm provides to its customers.

The three collaborators concluded that quality could be viewed as the gap between perceived service and expected service, and their work eventually resulted in the Gap Theory of Service Quality, that is,

$$Q = P - E$$

(Where Q = Quality, P and E are Customers' Perceptions and Expectations of particular product/service)

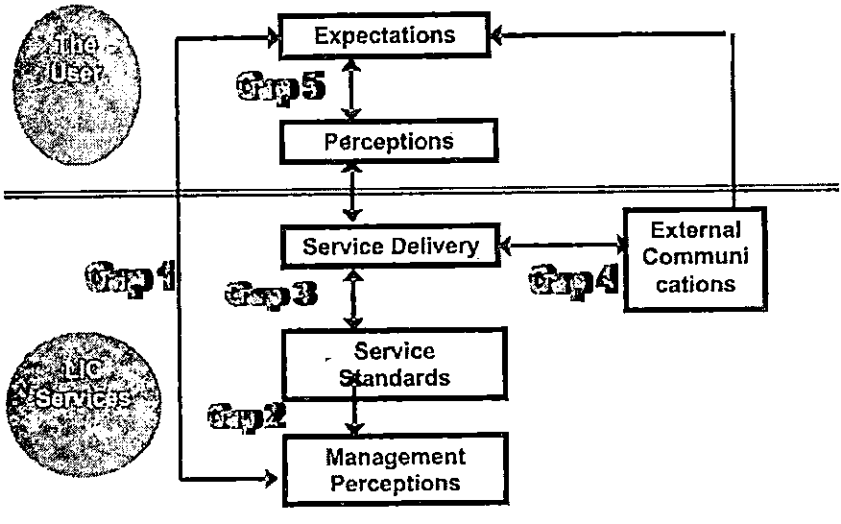


Fig. 1. The Gaps Model of Service Quality

PB&Z identified following five quality gaps:-
Gap 1 : Difference between actual user expectations and management's idea or perception of user expectations;
Gap 2: Mismatch between manager's expectations of service quality and service quality specifications;
Gap 3: Gap between the service quality specifications and the delivery of service;
Gap 4: Differences between service delivery and external communication with the users;
Gap 5: Difference between Expected and Perceived Quality

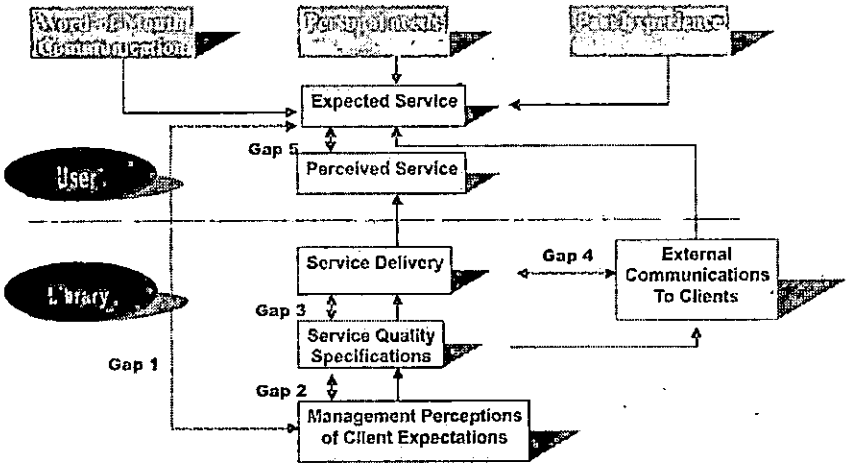


Fig. 2 Conceptual Model of Service Quality

It is a survey instrument to measure the gap between customers' expectation for excellence and their perception of actual service delivered. The SERVQUAL instrument helps service providers to understand both customer expectations and perceptions of specific services, as well as quality improvements over time. It may also help target specific service elements requiring improvement, and training opportunities for staff. Introduced in 1988, SERVQUAL has been used in replication studies in a wide range of service industries: health care, banking, appliance repair, and several other professions including libraries.

PB&Z's customer-based approach for conceptualizing and measuring service quality offers an alternative for defining the quality of library services. It emphasizes the service nature of libraries, in which the traditional collection-based criteria of quality may be part of, but not the entire component, of excellence. Service quality contributes to value experienced by customers. Value becomes an outcome of excellent

service. The SERVQUAL instrument, modified for use in library service settings, provides an outcome measure for managers to gauge their service activities.

Conclusion:

SERVQUAL instrument is being largely used in assessing the service quality of libraries. The SERVQUAL Model and gap analysis will assist Library & Information Professionals in determining the quality of services provided and identify the areas that need urgent improvement.

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Sears List of Subject Headings and Knowledge Organisation in the Internet Era

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Introduction

Vocabulary control is important for providing subject access to information in libraries and databases. Names of subjects called, subject descriptors, must be standardized for use in subject catalogues, otherwise our information retrieval system will be chaotic and inefficient.

The *Sears List of Subject Headings* (popularly called the Sears List) is a tool for assigning standardized subject headings to all types of documents in a general small libraries having upto 20,000 titles in all subjects. In Indian conditions it is suitable for public, college and small university libraries. Research, special and large libraries may not find it adequate or detailed enough for subject cataloguing their collections.

History

It was first designed in 1923 by Minnie Earl Sears (1873-1933), then on the staff of the H. W. Wilson Co., to fulfill the demands of small American libraries for broader subject headings (SHs) for use in their dictionary catalogues. These libraries found *Library of Congress Subject Headings List* (LCSH) too big and specialized. As compared to the LCSH the *Sears List* has simple phrasing. Since then the Sears List has always been published by the H.W. Wilson Company, New York who are its proprietors and copyright holders. Its editor is an employee of the company. Now it is in the nineteenth edition published in 2007. Its new editions are produced regularly to:

- incorporate new subjects and their terms
- restructure the form of old headings based on the changing information needs and information seeking behaviour of the users.

- give new terms to old subject headings based on current usage
- delete the obsolete terms.
- discover new relations between subjects and terms thereof..
-

Many of the new headings are suggested by the working librarians, bibliographic products vendors, and the specialists with the H W Wilson Company. It simply means the new terms are from the recently published literature.

Orientation to the online environment started with the 13th edition (1986). It was the first edition to be created as an online database for editorial use. It started changes in the form of de-inverting the inverted headings to suit searching OPACs and online databases. It is believed that majority of the users search subjects of an electronic database by natural form of their names. For example, "Library, Public" was changed to "Public library", similarly "Chemistry, Organic" was changed to "Organic chemistry". In the 15th edition (1994) edited by, the then newly appointed editor, Dr. Joseph Miller de-inversion process was completed.

Another important change introduced since its 15th edition is its thesaurus format of listing subject headings by using standard thesaural abbreviations, i.e. NT, BT, RT, USE and SA instead of x, xx, etc. Thesaurus format conforms to the ANSI/NISO Standard (American Standards Institution) (1993). Nevertheless, Sears remains a list of subject headings because it is still a general list for pre-coordinated subject headings, whereas a thesaurus is for a specialized subject area for use in post-coordinated subject searching. The current edition is the 19th (2007) edited by Joseph Miller in association with Barbara A Bristow.

Changes in and a brief review of the 19th edition (2007)

Sears' philosophy is to accommodate change while maintaining sound continuity. There are about 440 new SHs in the new edition, though seminal changes are none. New headings are in the areas of computers, IT, politics, popular culture and psychology. Total number of preferred headings is likely to the tune of 8000, yet the number of headings that can be coined or subdivided is, as usual, much larger.

Two major areas of new additions are Islam (very obvious) and graphic novel—latter has thirty headings perhaps formulated from the WilsonWeb Database on Graphic Novels Core Collection. Islam has constantly remained in news since the 9/11 attacks, and many US schools have now introduced curricula on Islamic religion and culture. Some other new headings are: Reality shows, Suicide bombers, Stem cell research, Body piercing and many more drawn from literary warrant. Some other changes are in cancelled or modified headings (p. xlii):

Biological diversity becomes Biodiversity, Native peoples has been replaced by Indigenous peoples. Some headings have been fine tuned, e.g., Fictitious character becomes Fictional character. "Principles ..." has been expanded a bit to formulate headings in some areas, namely, Native Americans, Government policy, and Mythology and folklore.

There seems some omissions. Though Sexual behaviour has been changed to Sex, Sexual behaviour as a subdivision is still there. But no guideline in the main list is given for its proper use. Some subdivisions in the main list do not appear in the separate "List of Subdivisions..." (p. xlv+): Following list is only random:
Bible--Natural history
Food--Fiber content
Photography--Enlarging
Popular music--Writing and publishing

In fact these are very specific and exclusive subdivisions, which have resulted from the de-inversion of all the headings and are not subdivisions in the real sense. As another contention Hindu philosophy should be Indian philosophy—latter term is apt and popular. Legally seeking Hindu philosophy is only a part, of the Indian philosophy. In the Sears Indian philosophy has not even been recognized as a non-preferred term. As other anomaly we can have two synonymous headings, Earth--Satellites and Moon for the same celestial entity. Under Body piercing RT could have been Tattooing and vice-versa. Moon worship and Sun worship have not been related. One wonders which small library will need SH "Napkin folding"; "Table setting and decorations" seems more than sufficient.

Principles of Vocabulary Control
Every system of controlled vocabulary is based on some principles regarding :
1.Choice of preferred headings (i.e. usable descriptors)
2.Levels of specificity of terms (Depth of subject analysis allowed)
3.Form and structure of preferred headings (Grammar of headings).

These issues make principles of the system and grammar of the headings (indexing language). Choice and structure of the headings is determined by user studies and the literary warrant. Level is determined by the strength of collection, level of users and above all by the library policy.

Principles of the Sears List
From the very beginning as a matter of policy, the Sears List has always been based on the principles of the Library of Congress Subject

Headings (LCSH) with certain modifications needed for simplification. The principles of the Sears List are :

1. Direct and specific entry
2. Common usage
3. Uniformity and consistency

It may be noted these are the same principles which C.A. Cutter (1837-1903) gave in his famous *Rules for a Dictionary Catalog* (1873). These principles have been explained in Sears 19 (2007) on pages xvi-xxii

Specific entry

It means a subject should be entered under its most specific heading, not under the class to which it belongs. For example, Rose should be entered under "Rose", not under "flowers". Penguin is entered "Penguins", not under "Birds" or even "Water birds". Similarly, Guide dogs are entered under "Guide dogs" not "dogs". But specificity is a matter of relativity depending upon the strength of collection, levels of the users, and on the policy of the library.

Direct Entry

It means that the specific heading chosen should be entered directly as the lead point, instead of a subdivision. For example, Penguins is entered as such instead of Water birds--Penguins. Similarly use "Barbie doll" instead of Dolls—Barbie doll, Roses instead of Flowers-Roses dolls.

Common Usage

The terms chosen as preferred headings are from common usage. If a word has more than one spellings, then the most popular one is chosen for this purpose. (It may be noted that the Sears uses American spellings drawn Webster and Random House dictionaries. But the Indian libraries should use British spellings). It uses common and popular terms instead of scientific or technical terms or jargon. That is the Sears uses terms current among lay users. For example, it uses "Dinners" instead of "Banquets"; "Birds" instead of "Ornithology"; and "Renaissance" instead of Renascence.

Uniformity

This is the very reason for compiling such tools. It means that a heading once chosen should be consistently and uniformly applied in its scope, meaning and spellings until a decision is taken to the contrary. It, however, does not mean that old terms cannot be changed or deleted, or new terms cannot be added. The Sears continuously does it.

Structure of the Sears List

Sears List is an alphabetical [arranged word by word according to ALA Filing Rules (1980)] general list of standard names of subjects is English language for use in small and medium size libraries. It provides subject headings for the entire range of knowledge. The latest edition (19th, 2007) has the following bibliographic details:

Sears, Minnie Earl. *Sears List of Subject Headings* – 19th ed./ edited by Joseph Miller; associate editor, Barbara A Bristow. New York; Dublin: The H.W. Wilson Company, 2007. li, 823p, ISBN-13:978-0-8242-1076-2. www.hwwilson.com

It is in two parts:

1.Introductory part including the list of about 500 (common) subdivisions.

2.List of subject headings in alphabetical order given in two columns on every page.

Introductory part describes brief history, and principles of the *Sears List*. But essentially it is a sort of an operation manual to use the *List* to select proper SHs. It also provides instructions to divide them further, if needed; and to coin new SHs as per grammar of the Sears List.

List of SHs

Core of the system is the word-by-word alphabetical list of SHs. All the headings are of two types:

1. Non-preferred headings
2. Preferred headings

2.1 Subdivisions used to subdivide a preferred heading

Non-preferred headings

These headings are those, which are not to be used. Such headings are given in light type face print. Each such non-preferred heading is invariably preceded by given the lead "USE", directing us to the preferred heading, e.g.:

Cyclopedias
USE **Encyclopedias and dictionaries**

Cyclotron
Use **Cyclotrons**

Cytology
Use **Cells**

Dairy farming
Use **Dairying**

Obviously the SH following the word USE is always printed in bold face; and a full entry exists for all such headings at proper alphabetical place in the List.

Preferred Headings

Printed in bold type these are the headings, which can be assigned to a document. These headings broadly categorized are: Ideas, Objects, Places, Processes and Relationships. Under with preferred heading is given the full entry with its DDC class number(s) scope or definitional note if any, instruction for its further subdivision, and all the Narrower (NT), Broader (BT), Related (RT) terms and also to other headings "to be [Coined and] added as needed". For example take the following simple entry:

Dairying (May subdiv. geog.) **636.2; 637**
Use for materials on the production and marketing of milk and milk products and for general materials on dairy farming.

UF	Dairies
	Dairy farming
	Dairy industry
BT	**Agriculture**
	Livestock industry
NT	**Dairy cattle**
	Milk

It means the following in practical terms:

- The SH Dairying (printed in bold type face) can be used as a heading.
- "May subdiv. geog" given in the parenthesis means this heading may be subdivided geographically (by a place name), e.g. :

Dairying -	India
Dairying -	Haryana
Dairying -	Karnal

- 636.2 and 637 are its DDC numbers from the Abridged DDC-14 (2004).
- The three terms namely Dairies, Dairy farming and Dairy industry given against the abbreviation UF (Used for) are non-preferred (synonyms) of the heading used. These are equivalent to Dairying in meaning. For this, the cataloguers will have to make *see* references from these terms to the entry terms, that is, from the terms not-used tot he term used e.g. :

Dairies	*see* **Dairying**
Dairy farming	*see* **Dairying**
Dairy industry	*see* **Dairying**

- BT means (hierarchically) Broader Term. Its practical implication is to prepare "see also" entry from broader to narrower term above :

  Agriculture
  see also Dairying
  Livestock industry
  see also Dairying

- NT means Narrower Term. For this we have to make see also references from broader to narrower terms :

  Dairying
  see also *Dairy cattle; Milk*

- RT means related terms. These are the terms at equal level of hierarchy but are related with the entry in some way. Its practical implication is to prepare *see also* entries on reciprocal basis. For example in the entry

  Diagnosis **616.07**

  RT **Pathology**

  So we will prepare the following two entries for the RT :

  Diagnosis
  see also Pathology
  Pathology
  see also Diagnosis

Subdivisions

Strictly speaking preferred headings are of two types. About 500 preferred SHs are used as direct headings as well as subdivisions to other headings. For example, Directories is a heading and also used as a subdivision, e.g.

Directories - History
Mumbai – Directories
Colleges and universities – Directories
Physicians – Directories

Key headings

In the List all subjects are not listed. For some subjects models are given to coin SHs on that pattern. On the basis of these models analogous headings can be coined. Major key (or model) headings (given on page xli) are:

Category		**Model heading**
Author	:	Shakespeare, William, 1564-1616
Country	:	United States
State	:	Ohio
City	:	Chicago (Ill)
Language	:	English language

Literature	:	English literature
Ethnic	:	Native American
Public figures	:	President United States
Wars	:	World war, 1939-1945

It means, if we have a subject pertaining to any country we will look under the United States for a similar SH for that country, and then adapt the heading accordingly. If our subject is

Geography of India

We will look under the United States where an analogous headings is

Unites States – Geography

So our SH will be

India – Geography

Similarly, for

Gazetteer of Haryana

In this case we will look under Ohio, and adapt the heading :

Haryana – Gazetteer

For historical buildings of Delhi, we will look under Chicago, and form the following heading :

Historic buildings – Delhi

For a book on "Style of Shri Prem Chand" we will look under Shakespeare, William to get the following SH :

Prem Chand, 1880-1940 – Technique

Similarly Hindi Grammar will get the heading :

Hindi language – Grammar

Sanskrit *Ucharan* will get the SH

Sanskrit language – Pronunciation

Some suggestion for postulating new key headings

Key headings form a vital part of the system to coin new headings while keeping the volume slim and trim. This small list (p. xli) is frozen for a long time. It is time to identify and designate a few more key headings. Some candidate headings for such elevated positions are obtruding. Bible has seventy headings both preferred and non- preferred, while say the holy Koran has only two, and the Vedas has a single entry. Most of the Biblical phrased headings or subdivisions can smoothly be transferred to other scriptures. On the Biblical analogy we can have SHs like Koran in literature, Koranic cosmology, and Koran—Prophecies. Other heading which can be upgraded seems Napoleon I, Emperor of the French. Need is to identify many more key headings.

Going further it seems every preferred heading is a key heading for its NTs. For example, From the SH Flowers we can derive SHs:

Roses--United States

Roses—Drying

Roses arrangement

Roses in art
Even, Artificial Roses.

As other examples, we can coin Computer games industry from Computer software industry; and Broadcast journalism—objectivity; Reporters and reporters—Objectivity from Journalism. It means what is true of a broader class is equally true of its narrow class, by the principle of phylogeny recapitulates ontogeny.

This will enormously enhance the capacity of the *List* without adding even an iota to its text. Awaited is a single command from editors to authorize this. That is need to is to make this provision explicitly in the "Introduction...".

Subdivisions

Subdivisions are a mean to make a heading more specific and to make class of headings smaller. Some of the SHs are already subdivided, while all the SHs in the list may be further subdivided by any of the about 500 subdivisions given on pages xlv-l of the Sears List-19 to make a headings more specific :

Science	--	Philosophy
Food	--	Fiber contents
Girls	--	Education
Trees	--	India
Education	--	Bibliography
Bible	--	Study and teaching
India	--	History--1857-1947
Architecture	--	20th Century

These subdivisions are either generally applicable to all the SHs or somewhat restricted in use suitable for a given category of headings. It may be noted that though the list of subdivisions is given separately, yet instructions to apply these subdivisions are given for each separately in the main list under that heading. For example, to use "Indexes" which is listed as a subdivision, we go to the main list (p. 384, Sears – 19). There we find the instruction to use it as a subdivision under names of subjects :

English literature – Indexes
India – History - Indexes

As said earlier some headings are both a SH as well as a subdivision. It is due to the growing complexity of subjects and documents. For example, bibliography is a SH as well as a subdivision. There are four types of subdivision :

1. Topical : Birds--Eggs

2. Bibliographical : Hindi language – Dictionaries
3. Geographical : Trees -- India
4. Chronological : India -- History—1857-1947
5. English literature –21st century

Categories Omitted

As said earlier, the Sears is a list/register of headings as well as it provides patterns and instructions to coin headings for new and old subjects. Paradoxically the headings which can be newly formulated from the *Sears* are much more in number than listed there. These unlisted but coinable headings mostly pertain to :

Specific names of individuals, corporate bodies, associations, institutions, commercial organizations, processes, events, natural , and geographical entities (mountains, rivers, lakes etc), flowers, vegetables, fruits, animals and all creatures (living, extinct, or mythical). All these can form subject headings and are to be supplied by the cataloguers as per the instructions. Other category of headings to be coined are by the use of subdivisions taken from pages xliii-l.

We can have the following subject headings though these are not listed in the Sears List :

Kapil Dev	- Biography
Kurukshetra University	- Administration
Prem Chand	- Characters
Taj Mahal	- Maintenance and repair
Urdu language	- Dictionaries
Haryana	- Boundaries
Himalayas	- Geography
Ramayana	- Quotations
Parrots	- Eggs
Maruti Udyog Limited	- Accounting
India	- Bibliography
Sikhs	- Canada
Roses	-Collection and preservation-India

Limitations

It may be noted that the Sears list is designed for American, Christians and Western Culture. It also uses American spellings, for example, "catalog" instead of "catalogue". We can modify to use Indian/British spellings. Content wise for other cultures and countries, it may not be wholly suitable. It has headings which have no relevance in India at the moment, e.g., Only child [families] , Unmarried fathers, Teenage fathers. Sometimes it looks too specialized for a small library, e.g., Napkin folding. On the other hand it does not have headings for Indian subjects

and concepts. There is no heading specific to Caste systems, Satyagraha, Gherao, Gurdwara, *Sati,* Child marriage, Doway deaths, etc. For such subjects the Indian libraries will have to make their own SHs or modify and adapt the existing ones. For example for History of (Sikh) *Gurdwaras* in Punjab, we have to adapt the heading "Ohio-Church history" to get Punjab-Gurdwara history. It makes the SHs work interesting and challenging.

Encouraged by the international use of the Sears List, the H. W. Wilson Company is toying with the idea of published its international companion to suit different countries and cultures.

Further Reading

Satija, M.P. and Haynes, Elizabeth: *User's Guide to the Sears Lists of Subject Headings* Lanham, MD: Scarecrow Press, 2008.

Appendices

2005 Sears additions

Affective disorders
Affirmations
African American dancers
African American educators
African American inventors
African American singers
Air guitar
Apes
Aphasia
Appalachian Region
Arachnids
Asperger's syndrome
Assisted living
Aunts
Baboons
Badgers
Badges
Bathrooms
Bears
Beetles
Cajuns
Caribbean Region
Chickens
Chimpanzees
Chinese New Year
Cinco de Mayo (Holiday)
Cockroaches

Comparative literature/English and German
Comparative literature/German and English
Crickets
Digestive system
Electronic reference services (Libraries)
Entropy
Flannel boards
Gorillas
Grandfathers
Grandmothers
Habeas corpus
Helplessness (Psychology)
Human genome
Icons (Computer graphics)
Iron in the body
Isolationism
Minerals in human nutrition
Minerals in the body
Online journalism
Open access publishing
Self-help techniques
Senior centers
String theory
Suicide bombers
Uncles
Vision in animals
War reparations
Weblogs

2006 additions
401(k) plans
Academy Awards (Motion pictures)
Adults
Adventure travel
Air travel
Alimony
Ambition
Amnesia
Anime
Arson
Art deco
Art nouveau
Attention deficit disorder
Avalanches
Avant-garde (Aesthetics)

Bar mitzvah
Bat mitzvah
Beads
Beauty contests
Belly dance
Betrothal
Bisexuality
Bishops
Blindness
Body piercing
Book clubs (Discussion groups)
Border patrols
Burlesque (Literature)
Burlesque (Theater)
Business consultants
Cancer/Environmental aspects
Canonization
Carbohydrates
Catholic Church/Bishops
Chests
Child actors
Chinese cooking
Cholesterol
Christian-owned business enterprises
Computer animation
Disabilities
Diseases/Causes
Domestic terrorism
Emmy Awards
Environmentally induced diseases
Evacuation of civilians
Exiles
Experimental medicine
Extortion
Grammy Awards
High-carbohydrate diet
Identity theft
Igloos
Internship programs
Interviewing (Journalism)
Invalids
Job interviews
Jupiter (Planet)
Kabuki
LSD (Drug)

Labyrinths
Leprosy
Lifeguards
Loch Ness monster
Low-carbohydrate diet
Low-cholesterol diet
Low-fat diet
Mercury (Planet)
Milky Way
Motion picture theaters
Movement disorders
Nations
Nature and nurture
Neopaganism
Neptune (Planet)
Nineteen eighties
Nineteen fifties
Nineteen forties
Nineteen nineties
Nineteen seventies
Nineteen sixties
Nineteen thirties
Nineteen twenties
Open source software
Phonetic spelling
Pluto (Planet)
Postpartum depression
Reality television programs
Small claims courts
Social status
Spelling
Stem cell research
Teddy bears
Theater/Japan
Troy (Extinct city)
Turkey/Antiquities
Uranus (Planet)
Venus (Planet)
Wikis (Computer science)
Zines

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E-Book: Reshaping the Future of Libraries

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ABSTRACT

Purpose of this paper

This paper shows the development of e-book .The social and technological reason behind this. How the trend is set for the popularizing the concept of e-book. Also argues that library professionals should embrace the opportunities offered by electronic libraries and thereby gain control of their collections and their future. Highlights the power that electronic books (e-books) give traditional libraries to more effectively use their resources to serve their patrons by improving the quality of their collections and access, while saving on the expense of maintaining paper-based books and monographs.

Design/methodology/approach

The literature is scanned to trace the historical development and the case studies are also provided

Findings:

Argues that library professionals should embrace the opportunities offered by electronic libraries and thereby gain control of their collections and their future.

Practical implications (if applicable):

From pragmatic point of views e-book should be popularise among scholars. The cost, multiuse etc. benefits should also be considered.

What is original/value of paper?

The paper can open up some issues for related to e-book. How the book is created, availability and technical infrastructure required adopting the culture of electronic book.

Introduction

The modern readers are legitimately confused as they try to understand the future of the book in the digital world. They somehow know that the inexorable advance of technology will likely eventually render the printed book obsolete, at least for many of the uses that it sees today. Indeed, the elimination or suppression of the book (often as a shorthand for ideas or history) has been a staple of science fiction for decades, and even fundamentally apolitical films such as the early *Star Trek* movies incidentally celebrate printed books as charmingly archaic collector's items. These portrayals have been absorbed into the public consciousness, leading to a sense that technology inevitably will supercede the printed work.

Few subjects continually provoke as much heated discussion as the Internet. In one area after another, the Internet has been alternatively hailed and decried in hyperbolic terms, echoed by the performance of high technology shares on US stock markets. For all the talk of revolution, however, it has become clear that a great deal remains to be done to fulfill its potential. The institutions and people who have dominated a given sphere of activity are not rendered instantly superfluous by it. But neither can they afford to wait to see how things evolve. The future does not just have to happen. It can be shaped.

The Internet has created potential identity crises for traditional participants in many fields. For example, retailers of everything from pencils to automobiles are threatened by
the rise of Internet shopping. Bicycle messengers and post offices are threatened by e-mail.

Likewise, many libraries and publishers view the phenomenon of Internet search engines and the invention of the e-book and wonder what the future holds for them. They need not. Libraries and publishers are indeed facing a number of structural challenges; the Internet is just one of them, and it is hardly the biggest. In fact, electronic publication offers the answers to many of these challenges.

The changing dynamics of the library world Out of the 4,716 ``service points" identified by the UK's Library Association as a location (public library, university library, mobile library, corporate library, etc.) where the public can obtain information or take out a book, there are 331 general libraries and 151 academic libraries (LISU, 1998). There are some 122,000 libraries in the USA, of which 4,000 are academic libraries which vary widely in quality and levels of support. Book budgets everywhere are flat or shrinking. The cost of housing collections is rising, and space is scarce, particularly as libraries come to grips with

changing social mandates, such as the need for daytime drop-in centers for senior citizens and homework centers for latch-key children in the afternoons. Then there is the expense of maintaining and adding to the collections, the wear and tear on current volumes and the toll of loss and theft. Cataloguing, stamping volumes, and shelving are perpetual expenses, which, over time, cost more than the original cost of the book.

Even more acute for academic libraries is the escalating cost of subscriptions for scholarly periodicals ± well over US$10,000 annually for specialized scientific journals (Darnton, 1999). According to The Bookseller, the average cost of a periodical in the UK is £295.28, an increase of 11.62 percent over 1996. Comparable figures for Canada and the USA are £345.73 and a 7.89 percent increase and, for other countries, £423.49 and a 7.33 percent increase (LISU, 1998). Rising costs prompt cancellations, raising the price for the remaining subscribers even further. That additional cost is increasingly borne by cutting back on purchases of monographs for certain academic departments. Since the 1970s, sales of individual monographs in many fields have fallen by half. The resulting economic squeeze is a crisis not only for publishers and libraries but also for younger scholars who cannot find outlets for their work. While bricks-and-mortar libraries have done their best to stretch their collections through sharing of resources and interlibrary loans, such programs have been cumbersome to administer and often are inconvenient for patrons.

However, even if traditional resources were adequate, libraries would still need to confront the changing nature of demand for services. The experience of the New York Public Library is ample illustration that the changes have already arrived; each month, its computers register 10 million ``hits" from users worldwide, compared to 50,000 requests for books in the main reading room. Clearly, such a library serves far more people than those who travel to the 42nd Street building (Darnton, 1999).

Most school and university students are already computer literate; they are accustomed to electronic media, they crave electronic resources, and, like students of every era, their study schedules do not always conform to library hours. Students attempting to use online resources for out-of-hours research are forced to negotiate the Web via commercial search engines, which are imprecise, riddled with advertising and entertainment features, and lack any scholarly standards. When resources are available from libraries, they are limited to subject-specific electronic journals and databases with few options for monographs.

In addition, new approaches to education demand alternatives to traditional research. One-third of US universities and colleges today offer

distance-learning programs, representing a tenfold increase in the past decade, and now enroll approximately 1 million students (Morris, 1999). Some are exclusively distance-learning institutions, and need libraries for accreditation, but they also include some of the most prestigious names in American education. In the UK, the International Centre for Distance Learning lists more than 300 programs. Working adults, having come to grips with the idea that they will change jobs repeatedly in their careers, are continually pursuing new credentials and new skills, and today represent 45 percent of US college students (Morris, 1999). They need access to libraries and efficient research capabilities anytime, anywhere.

Moreover, demand for remote library access can only increase as hand-held technology continues to improve. Technological innovations like the PalmPilot, Rocket eBook and SoftBook may not quite have achieved the charms of print for today's bibliophile who wants to read the latest Booker Prize winner, but they are getting closer fast. For the typical student or scholar such technology, with capabilities such as magnifying type, searching and note taking, is very useful indeed.

With demand increasing for online library services, supply is just a matter of time. The question is not whether someone will fill this need, but who will lead the effort and how they will provide it. Is it properly the role of engineers and programmers? It is they who have created the Internet. But are they trained to create, organize and retrieve information with the needs of humanities scholars, social scientists, or ordinary students in mind? Or is it the role of librarians, who have made collecting, organizing and retrieving information their profession? The time is right for collaboration between librarians, publishers, and information professionals to create systems that meet the need of these end users.

Successful Internet Models

One of the less understood features of the Internet is that, in its totality, the Internet comprises thousands of small partnerships and affiliations, operating within an environment of open platforms, common protocols, unpredictable linkages, and sometimes capricious combinations. While major telecommunications companies and others have invested billions to create networks and content that they can control, none has succeeded in dominating the field. Those that do best are organizations that see the Internet not as something to be grafted onto an existing organization, but rather as an opportunity to set up entities that may operate on new and fundamentally different terms.

This same model for success will apply to libraries too. The way for libraries to assert themselves is to emulate the example of the Internet to date: affiliate and partner with organizations that can allow them to shape their own futures. Instead of consigning ever more resources to maintaining "bricks and mortar", fragile volumes, and clerical tasks, librarians now have the opportunity to make strategic choices that will let them concentrate on their love of books and providing access to knowledge. Far from surrendering control over their own institutions to distant, impersonal forces, the economics of electronic publishing will allow them to shape their own collections consistent with the needs of their patrons to an unprecedented extent, at a reasonable cost.

The Power of E-Books

To get a true measure of the new direction of electronic libraries, it is important to understand the concept of e-books and e-monographs. Most research libraries have long had a computer component, but they have been limited by the fact that digitization is not integral to their delivery. A search of a database by subject or author may produce a title and an abstract, or the article itself. But the whole transaction is really an extension of the old way of doing things ± leafing through an index, presenting a call slip, and waiting for the item to be retrieved from the stacks. An e-book (or its e-monograph counterpart) is so much more. It is not just print or images reproduced by computer. An e-book is digitized, should be searchable, and its utility can be enhanced by links and multimedia features. It is cross-referenced to allow scholars to concentrate on their own specific area. E-books can be read any time, anywhere, and they should have powerful search capabilities from simple fielded searching, to Boolean, to full-text searching and controlled vocabulary. Access should be instantaneous through libraries' online catalogues.

E-books and e-monographs raise significant issues of copyright infringement and fair use. Libraries have always acted as a regulator of the line between what constitutes fair use of the material and infringement of copyright. Publishers are fearful, however, that electronic publication will allow unlimited use of their property ± that once the book is online it will be open to everyone without payment.

The reality is that digital publication actually has the capability to achieve greater control. There are many different models that can be developed to accommodate the digital publication, from a single user-concurrent use model, to a pay-per-use model, to rental or lease, to disaggregation of a book to unlimited access. Fair use could be defined within the limits of these various models. If, for example, a college class is structured around particular readings during specific weeks of term,

the library can arrange to lease enough electronic copies of the chapters or whole volumes for that period of time, instead of compelling students to purchase books or, worse, not giving students access to the materials at all. While Internet culture has developed in such a way that users have come to expect access to information at no charge, e-books can be controlled to prevent infinite circulation. Electronic delivery, if anything, gives greater means for accountability than paper.

It must be added that many of the early information retrieval systems were designed by engineers and code writers without particular regard for the end user, and created the need for special training in how to negotiate the systems.

The Publishers' Perspective

Publishers have every right to be concerned about their role in the transition from print to a combination of print and digital publication. However, when you consider the overhead of printing, warehousing, and distribution, together with the cost of processing returns, it becomes compellingly clear that publishers have a great deal to gain from e-publishing.

In the case of reference publishing, the economic case is even more compelling. Reference works often date quickly. E-publishing enables a library to keep pace with rapidly changing research in many fields that lack a commercial base for books and particularly for monographs. In fact, with less need to support design, printing, shipping and other functions relating to the physical production of books, publishers should be able to devote a greater share of their resources to acquiring manuscripts and giving them the editorial attention serious work deserves.

The Web's Impact on Quality and Standards

Editorial judgment, control and sanction are still the greatest sources of value in publishing, particularly scholarly publishing, and anything that strengthens publishers' ability to exercise these should be welcome. One of the biggest problems that academics are facing in the tumult of burgeoning electronics is the provenance of information, and the lowering of student standards for what constitutes legitimate material. Commercial search engines are quite undiscriminating about what they will deliver on a given topic. A journal's own Web site may have whole articles available ± although often at a cost ± which can be verified against the real thing. This bears the authority of the printed version. But what of secondary citations in non-vetted Web sites, or the amateur authority of enthusiasts who use the Web for instant publication? ``Found on the Internet'' is clearly not an authoritative reference.

Electronic libraries drawn from reputable publishers by real librarians carry this sanction.

Challenges to library administration

To some, the migration of print to digital formats suggests the ephemeral, and concerns run deeper when a book is ``born digital", instead of appearing in print as well. Many libraries have lost access to electronic journals when their contracts have lapsed, including back issues. In the event that a journal has ceased publication, the loss can be permanent. Bound volumes do carry an aura of permanence, although anyone familiar with the issues of climate control and the chemistry of paper knows how delicate books can be. However, the ideal electronic publication is permanently in print and available for purchase. Once purchased, it is fully searchable and enhanced and available to off-site students and scholars on the same basis as those in the library itself.

All these efficiencies imply a good deal of reapportioning of time and changes in librarian training, and, fortunately, all the changes lie in the direction of higher-level skills and intellectual challenge. The ability to capture hard usage data will allow librarians to think more about how to apportion budgets between traditional books and electronic ones. Better information on demand cycles will allow them to balance purchase of electronic books with rentals or leases.

Librarians can work with their jobbers or directly with publishers to build distinguished collections in one field or another, depending on the nature of their institution and the needs and desires of their faculty, students or public constituencies. In this, libraries and librarians fall fully within the flexible, agile partnership model that has characterized the growth of the Internet so far, while, at the same time, upholding and enhancing the strategic and intellectual elements of the profession.

The question remains of how to pay for this investment in e-books. As library funding is currently appropriated, there is often no dedicated budget line for e-books. It must be drawn from other appropriations ± serials, hardcover books, electronic databases, or electronic journals. Regardless of where the funding is drawn from, however, it really is not much of a stretch to apply it to e-books and e-monographs because building electronic collections has ramifications for every appropriations area, and is probably the most cost-efficient investment a library can make. The new extensions or off-site storage facilities that do not have to be built, the inter-library transport that does not have to be arranged, the endless stamping and shelving that need no longer be done ± all these represent substantial savings in money and time. They also free-up

professional librarian time to serve students, scholars, and other patrons as advisors and consultants in the pursuit of knowledge and pleasure.

Clearly, the field of electronic libraries is rife with possibilities, and holds tremendous advantages for libraries, librarians, and publishers. As we have said, the future does not just happen. It can be shaped, if librarians form partnerships with their publishers and those who are forging the Internet.

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E-Books on Library and Information Science: A Study

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ABSTRACT

This paper is outcome of the project work submitted to the department of Library and Information Science, RTMNU, in the year 2006-2007. E-books are an emerging and rapidly changing technology that can include other formats such as online magazines or digital books designed to be listened to as audio books. Libraries and information centers are no exceptions in the use of these powerful tools. This article is a study of E-book on Library and Information Science. Some online booksellers like Amazon.com, disealebook.com, Ebook.com has been considered for the study. As many as 80 E-books were scanned for the study. Major findings are, Maximum Nine e-books are published on Information technology, Fifty four e-books have been published by single authorship pattern, CRC Press is secured first rank among online publishers, twelve e-books are published in the year 2004 and out of eighty e-books Twenty one e-books are reviewed by customers.

Findings: US librarian Michael Stephens, author of Tame blog, suggests "new collaboration and communication tools need to be used by librarians to better serve users". 'Libraries can now communicate with their markets directly'. If libraries fail, users may pass them by. Illinois reference librarian Schmidt specifically identifies youth market in equation observing that 'future of libraries depends on how well we meet the needs of today's young adults, who are far more tech fluent than most librarians'.

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E-Journal Consortia: A Boon To Libraries and Information Centres in 21st Century

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ABSTRACT

Information technology has come to stay am indispensable tool library operation and services. The invention of information technology industry has given a new shape to the learning process, which involves reading, understanding and gaining information, which becomes knowledge. The right information at the right time and in the right form is of utmost importance to users for their knowledge and developmental activities

In the 21st century digital age, Libraries and Information centers have assumed greater responsibilities for meeting the diverse needs of user communities. The new technology have largely aided in designing value-added library services. The emerging digital libraries are redefining the way by which user demands are being fulfilled. Among other resources, E-journals occupy a prominent place in digital libraries, by providing access to online full text information. The dwindling library budget and growing number of journals force Libraries and Information centres to form Consortia for accessing E-Journals. The present paper, while studying the importance of Print and E-Journal Consortia and resource sharing among libraries and information centres.

Key words: Electronic Resources, Library consortia, E-Journal Consortium.

Introduction

In the era of Information technology, emergence of computers, access to electronic media, advanced telecommunication systems, A.V Technology, multimedia have created new possibilities to deal with the collection, organization and dissemination of vast amount of digital information. The 21st century is witnessing revolutionary impact on the publishing and information delivery systems due to the emergence of Internet particularly the WWW were a new medium of information storage and delivery.

Today, the information needs of the users have increased enormously so much that no single library on its own can meet their needs. This has necessitated the need for effective linkages and Co-operation between libraries and Information Centers for sharing of available resources and Information through network services. Networks, e-mail, online access, use of CD-ROM, software and Hardware systems etc. are now being used for resource sharing. The developments in the fields of Computer and communication technologies increasingly relies on resource sharing through electronic media for achieving high speed in access, reducing time to search the information, shorter storage space, finding simple means of selecting materials and for eliminating the need to visit a library.

Co-operation amongst Libraries and Information Centers, Institutions for sharing their library resources is being practiced for a decades. The mode of co-operation has gone under a transformation with infusion of new information technology from print based environment to digital environment. The technology provides an un paralleled media for delivery of Information with greater speed and economy. The Libraries and Information centers as heavy consumers of e-Journals and on-line databases stand to benefit greatly from this technology driven revolution. The availability of IT-based electronic information products are exerting ever-increasing pressure on libraries, which in turn are committing larger based online full text search services, CD-Rom products and Online data bases. The libraries with their diminishing or at the best static financial allocations have to consider new ways to consolidated global resources. The combination of these developments has resulted in the development of "Shared subscription" or "consortia based subscription to journals every where in the world". The library consortia, on the basis of sheer strength of the number of institutions, libraries and information centers offer healthy growth opportunities to the e-publishers and thus attract the best possible price and terms of agreements. With this welcome change, the libraries all over the world are forming consortia of all types and at all levels with an objective to take advantage of current global network to promote better, faster and more cost effective ways of providing electronic information resources to the information seekers of the user community.

Access of E-Journals

A Journal is an importance resource for up-date information on all disciplines. Libraries attached to institutions involved in R&D activities rely heavily on journals for information pertaining to their research projects. Journals are a vital source of information for the scientific research and development in academic libraries and information centres. Journals are increasing three fold every 15 years, and costs of Journals are growing at the 2.5 times every 10

years; so it is obvious the no single library can procure all journals in a discipline. With the emergence of information technology applications and particularly internet, there has been a shift from traditional print journals to E-Journals.

E-Journals have many advantages. One can access it round the clock across geographical barriers, which make e-journals omnipresent. The e-journals get published or reach the subscribers much before their print counterpart. It also reaches all its subscribers simultaneously, where as there are many factors, mainly geographical and procedural, which cause delays in case of print journals. Another important advantage of e-journals is that more than one person can access it at a time. Articles can be downloaded and printed simultaneously by more than one reader, depending on access rights and permission. Multiple and remote access makes it available at one's desk. This is a boon for a huge campus where there are hundreds of readers with many departments. E-journals offset the missing issue problem. If a particular volume of the print version of the journal is not complete, library staff can download and print all the articles available online or can save it in digital form till the time hardcopy is supplied by the publishers. Many of the publishers provide free access to e-journals against print subscriptions. The information about the free access against the print subscription is usually available either on the journal's cover page or on their website and sometimes even in the publishers' catalogue. Also, there are good numbers of e-journals available free of cost

A consortium is inevitable among libraries to cope with crunching budgets, rising prices for subscribing periodical and ever growing user information needs. E-journals Consortium is nothing but evolving a form of cooperation among the libraries which come together to share journals electronically. It has gained momentum even in developing countries like India. This is a very attractive option to counter the escalating cost and static library budget.

Library Consortia

The world 'consortia' was originated from the Latin in early 19th century in the sense of partnership. Oxford Advanced Learners Dictionary describes consortium as 'a group of people, countries, companies, etc. who are working together on a particular project'. A library consortium is a group of libraries that agree to share their resources to satisfy the needs of users. Library consortium is a community of value creating entities, generating value through an aggregation of library units within and across organizations. The value creation could be enhanced through resource sharing processes, products and service offerings of the participating library units in a consortium.

Resource Sharing

Resource Sharing is defined in the glossary of Library and Information Science as a term covering a variety of activities engaged in jointly by a group of libraries for the purposes of improving services and/or cutting costs. Resource sharing may be taken up by formal or informal agreement or by contract at a local, regional national and international scale. The resources shared may be physical documents, online/web resources, bibliographic data, people, processes, technology, network etc. the organizations or departments in resource sharing process form the consortia networks. The consortia networks share common objectives, processes and systems for the mutual benefit.

Need and Important of Consortia Based Resource Sharing

Information is a national resource and it is necessary for national development. As information be comes a necessary resource and commodity in the digital Era, providing information services more important to all types of organizations. In academic libraries, librarians are faced with the challenge of providing better services with decreased budget. Consortia can be come an excellent way in the process of collection, digitizing organizing and making accessible the electronic resources. The idea of library co-operation resource sharing, networking are in fact are some such efforts in the past. But, the trend today in forming library consortia for sharing of electronic resources.

e-publishing has brought a revolution in journals publication, subscription, access and delivery mechanism. The ability to access journals online has led to a new and still evolving, form of co-operation among libraries and information centers; every individual library now subscribes to a smaller number of journals, usually those most relevant to their organization, and the libraries then come together to share their journals 'electronically' through a consortium. This is a very attractive option to counter the escalating costs and depleting budgets.

Few factors that necessitate the need for building library consortia are as follows:

- The exponential growth of knowledge has made it more and more impossible for the individual library to purchase all the relevant information. The effect has been that libraries have become more and more dependent on inter lending in order to fulfill the requirements of their users.
- The developments in scientific publishing and price policies of publishers posed new challenges and opportunities for academic libraries in purchasing and managing the serials within their restricted budget. So to solve the ongoing serials

crisis, it is essential for a common infrastructure a firm to share the resources among Libraries.

- To reduce the cost of member library operations. This is accomplished by the consortium acting as an agent on behalf of the member libraries to seek a reduced group purchase price for information such as electronic journals.
- The rapid technological developments have resulted in a constant pressure for new hardware and education and training of library staff.
- The overwhelming application of new technologies, new methods of information retrieval/dissemination has contributed to rapid escalating user expectations in the sense that the users expect library information to be delivered as fast as any other information they need.

Potter (1997) identified that the following reasons for formation of consortia

- Better sharing of existing resources and jointly acquiring new resources at great savings.
- Providing enhanced library services with an emphasis on access to new electronic resources including databases and services offered through the internet and the www.
- Expediting interlibrary borrowing, which has evolved into providing as many electronic resources as possible at the lowest cost to consortia members.

Allen ad Hirshon (1998) indicated that new library consortia developed primarily for three reasons.

- To leverage resources by sharing existing collections or resources through virtual union catalogues and material delivery services that provides reciprocal access from member library holdings.
- To reduce the cost of member library operations by obtaining coup purchase price for information products; and
- To bring pressures to bear on information providers to reduce the rate of rise in the cost of purchasing information.

Consortia Based Resource Sharing:

Information technology has great potential in resource sharing through networking of Libraries. The consortia for library can be considered as a major step towards library co-operation in sharing electronic resources.

Resource sharing through consortia should benefit all the stakeholders and provide for a sense of ownership in the process. The process should exploit local resources, use technology to benefit

the consumers of information for reducing costs and improving productivity of all the players. The process of resource sharing needs to be sensitized to the autonomy of participant libraries and their commitment to their library users. The names of consortia libraries, contact details of the staff, terms and conditions be shared among all participants. There should be a consolidated union catalogue of library holdings held in each library placed on the web – Intranet or Internet. The services may or may not involve fee depending on the mutually acceptable norms. With the advent of electronic mail, intranet and networking facilities resource sharing has become easy, cheaper, better and faster. The fundamental requirement is the resource sharing mindset and understanding of the fact that no one entity is self-sufficient in fulfilling the demands of the end users of the participating libraries. Web is an effective medium, platform for sharing resources among wider audience in a real-time, 24 x 7 and seamless manner. Access to intranets of the consortium partners augments the resource sharing.

The consortium can share, take up programs of common interest. Periodic meetings for suggestions, shared collection development methods consortia based subscriptions, dissemination of information and ideas to establish set guidelines and for discussing mechanism to reach wider audience in a cost-effective manner. Consortia approach requires clarity of thought, cooperation and a belief that coordinating practice is better than isolated effort. A frequent two-way communication aids the process of collaboration.

Indian Scenario

Much importance is given to research and development activities in India. Hence, there has been a voluminous growth of published documents in the recent past. The increasing cost of information resources, technological advancements that offer newer methods of information processing, retrieval and dissemination are some of the factors which have made partnership a necessity and which led to the formation of e-journal consortium. The development of the consortium is the outcome of the desire for resource sharing. In this paper an attempt has been made to list out the major e-journals consortia in India with a practice of shared subscription or consortia based subscription.

1. UGC-INFONET (Universities and Colleges)
   http://www.ugc.ac.in/new_initiatives/infonet.html
2. Inter University Centres (IUC-DAEF Consortia) Atomic Energy
   http://brahma.iuc.res.in/-iuc_cc/iuc_loc.html
3. FORSA (Forum for Resource Sharing in Astronomy and Astrophysics)
   http://www.iiap.res.in/library/forsa.html

4. CSIR- Journal Consortium (Council of Scientific and Industrial Research)
http://www.niscair.res.in/

5. HELINET (Health Sciences Library and Information Network)
http://www.rguhs.ac.in/hn/ne whell.htm

6. Indian National Digital Library in Engineering Sciences and Technology (INDEST) Consortium
http://www.paniit.iitd.ac.in/indest

UGC Infonet

In 21st century witnessed the role of technology as a driving force in the education system. Fast innovations in technology result in frequent changes in curricula, introduction of new subjects, new orientation methods of the education system, and also open new vista in new teaching-learning process. The UGC-Infonet project has provided enormous opportunity for the universities and institutes of higher learning to produce quality research work.

UGC-Infonet E-Journals Consortium has been set up by the Chairman, UGC to promote the use of electronic databases and full text access to journals by the Research and academic community in the country. The Faculty, Research Scholars and Students of Universities covered under UGC are the primary beneficiaries, however this scheme will be extended to colleges very soon. The scheme is likely to be open to other institutions such as ICAR and other institutions after signing MOU with UGC/INFLIBNET.

The universities have been funded for connectivity under UGC-Infonet and will have network connectivity. Individual university will then have unique IP address through which the publishers for which subscriptions made give access. However entire programme will be administered, monitored and maintained by INFLIBNET Centre. Under this Consortium, Access to gateway Portals is made available to the Universities covered under UGC grants. These gateway Portals provide access to more than 10,000 Journals in the area of Pure Sciences, Social sciences and humanities with Contents and Abstracts for major collections.

The UGC-Infonet e-Journals Consortium is the largest in the world plays a vital role in providing better and free access to scholarly information to the desktop of faculty and students in the country. This programme is implemented, executed and maintained by INFLIBNET. This has resulted in access to more than 4600 scholarly journals to around 100 universities in a phased manner. This has resulted in savings of more than 85-90% as compared to print subscriptions by individual universities.

E-Resources Subscribed Under Ugc-Infonet E-Journals Consortium As On April – 2006

Sl. No.	Full text Resources	Website	No. Journals/ Databases	No. Univ	Coverage
01	American Chemical Society	Http://www.pubs.acs.org	31 journals	100	Vol. 1, Issue-1-onwards
02	American Institute of Physics	http://www.aip.org	19 journals	100	Mostly 1997-onwards
03	American Physical Society	http://www.aps.org	8 journals	100	1997-onwards
04	Springerlink	http://www.apringerlink.com	1200 journals	100	1997 –onwards
05	Elsevier Science	http://www.sciencedirect.com	34 journals	050	1995-onwards
06	Emerald, Full Collection	http://www.emeraldinsight.com	29 journals	050	2001-onwards
07	Annual Reviews	http://arjournals.annualreviews.org	31 journals	100	Last Ten Years
08	Taylor and Francis	http://journalsonline.tandf.co.uk	1100+Journals	1100	1998- onwards
09	Portland Press	http://www.portlandpres.com/pp/default.htm	4 Journals	050	1996- onwards
10	Institute of Physics	http://www.iop.org/EJ	36 journals	100	Vol. 1, Issue 1 –onwards
11	Royal Society of Chemistry	http://www.rsc.org	23 journals / 6 Databases	100	1997-onwards
12	Blackwell Publishing	http://www.blackwell-synergy.com	489 journals	100	1997 –onwards
13	Euclid Project	http://projecteuclid.org	18 journals	100	2002 – onwards
14	Oxford University Press	http://www.oxfordjournals.org	169 journals	100	1997 –onwards
15	Cambridge University Press	Http://journals.cambridge.org	189 journals	100	1997 –onwards
16	Project Muse	http://muse.jhu.edu/journals	293 journals	100	1999 –onwards
17	JSTOR –Archival Access	http:/www.jstor.org	582 journals	032	Vol.1, Issue 1-onwards
18	Encyclopedia Britannica	http://search.eb.com	National Site License		
19	Science Online	http://www.scienceonline.org	One Journal	050	1996 –onwards
20	Nature	http://www.nature.com	One Journal	050	1997 –onwards
Abstracting/Indexing Databases					
01	Chemical Abstracts Service	http://www.cas.org/scifinder/scholar/Scifinder Scholar	One Database	009	1907-onwards
02	Biological abstracts	All University have their own url	One Database	090	1969 –onwards
03	MathSciNet	All University have their own url	One Database	050	1940 –onwards
Portals					
01	Ingenta Gateway Portal	http://www.ingenta.com	5700 journals	028	Upto abstract
02	J-Gate Portal	http://www.j-gate.informindia.co.in	14000+journals	028	Upto abstract

All subscribed contents under consortium are freely available to the member universities through static IP range of the member university. The subscribed contents can be directly searched, browsed

and downloaded from publisher's website. The misuse of any content or systematic downloading will not be permitted as per the MOU singed with Publishers.

Indest

The Ministry of Human Resource Development has set-up the "Indian National Digital Library in Engineering Sciences and Technology (INDEST) Consortium is the most ambitious initiative of its type so far in India. It would not only benefit 38 major technological institutions in the country (including IITs, IISc, NITs, RECs and other), being an open-ended proposition, it also invites all AICTE-accredited and UGC-affiliated institutions to join hands with the leading engineering an technological institutions in the country.

INDEST is offering the following digital products to Indian academic and R& D institutions: IEEE/IEE Electronic Library online, Science Direct/IDEAL Library, Springer Link, Proquest's ABI/INFORM Complete, Applied Science and Technology Plus (ASTP) Online, ACM digital Library, COMPENDEX on EI Village, INSPEC on EI Village, SciFinder Scholar, Web of Science, and MathSciNET.

J-Gate

J-Gate is an electronic gateway to global e-journal literature. Launched in 2001 by Informatics India Limited, J-Gate provides seamless access to millions of journal articles available online. It presently has a massive database of journal literature, indexed from 12090+e-journals with links to full text at publisher sites. J-Gate also plans to support online subscription to journals, electronic document delivery, archiving and other related services. Currently, J-Gate offers two types of products/services:

(a) J-Gate Portal: Table of Contents (TOC) – For 12090+e-journals. Database – A comprehensive searchable database with 4340000 + articles, with 4,000 + articles added every day.

(b) J-Gate Customized Services: J-Gate Custom Content (JCC).

Local Intranet/Internet solution to libraries, providing e-access for subscribed journals. J-Gate Custom Content for Consortia (JCC). JCC extended to a homogeneous group of libraries for sharing "subscribed" journal resources.

J-Gate is the first major e-journal service initiative in India seriously trying to address these two gaps, keeping in view the specific needs of Indian scholars and libraries. J-Gate is an e-journal portal and access gateway. It provides means of access to global literature in scholarly and research journals. J-Gate aims to help users in:

- Browsing table of contents (TOC) of 8,000+e-journals

- Searching a reasonably well-indexed bibliographic database of journal articles from these e-journals.
- Locating a local library in India, where the article he finds from the search could be available.
- Sending e-mail to authors for a reprint-request.
- Accessing full-text of about 1,000+free journals available online. J-Gate links to full-text of more than 100,000 currently published articles since 2001, which are freely available.

Niscair E-Journals Consortia

NIISCAIR is the nodal agency for developing a "Consortium for CSIR Laboratories for Accessing e-journals". The activity shall range from creation to monitoring of the access facility of scientific periodicals published by leading international institutions. The objectives of E-journals Consortia are:

- to strengthen the pooling, sharing and electronically accessing the CSIR library resources.
- to provide access to world S&T literature to CSIR labs.
- to nucleate the culture of electronic access resulting into evolution of digital libraries.

To start with, an agreement has been signed with, e-journal publisher, M/s Elsevier Science for a period of four years for 1200 journals. Under this scheme, CSIR scientists shall be able to access these journals and download material for their use. Such access to world wide journal resources will play a vital role and strengthen research and development in CSIR laboratories, thus leading to knowledge generation useful for socio-economic development of the country.

Forsa

The Forum for Resource Sharing in Astronomy & Astrophysics (FORSA) came into existence in the year 1982, for sharing the resource available in astronomy libraries in the country. The Indian Astrophysics a consortium grew out of the efforts of librarians from institutions specializing in astronomy and astrophysics in India and this consortium is known as Forum for Resource Sharing in Astronomy (FORSA). FORSA consists of five members (from the initial eight members only five joined the consortium for negotiating licensing for astronomy journals) and has identified a subscription agent as a supplier of journals. Subscription for both paper and electronic format are paid through this supplier. The agreement is meant for only astronomy journals and hence the sales volumes will dictate the price paid for the titles. Following are the features of FORSA Consortium:

- The journal title for which the consortium license is negotiated are subject focused.
- The publisher find it convenient to negotiate with the members through the agent since the individual invoicing is handled by the agent for the individual members.
- The model is worked out for cross access to the point journals subscribed by the members of the consortium and hence gives equal access for all the members.
- No additional requirement of budget for the members in terms of subscription to new print journals is required since the currently subscribed titles will be maintained (subject to the normal increase in subscription).
- The most important feature is that the member are not burdened with subscribing to peripheral and less important journals, which is a standard feature of building 'together' by publishers.

Suggestions

Besides the major activities, subscription and identification of new electronic resources; interaction with member institutions, organizing training programs; and encouraging interactions amongst member libraries, by both the INDEST Consortium and UGC-INFONET, and other Consortia, the following suggestions may be considered to ensure effective and optimal utilization of subscribed electronic resources.

1. Increased availability of computer systems and direct links to e-journals from the member institution's Library OPAC may be considered.
2. It would be desirable if studies are undertaken to evaluate the usage and usability of electronic resources in the member institutions consortium and findings could be compared with each other's to know the issues and challenges.
3. Month-wise usage reports for e-journals could be measured using log on file system by the Consortium to prove the statistics being provided by the publishers or Aggregators concerned to support future electronic resources building.
4. Information professionals have to conduct more awareness programs to market the new e-journals services at their respective institutions. Information centre Web-site, Intranet, Newsletters, strategic pages of the institutions highlighting services responsive to user requirements may be created by placing articles, net based posters and notices about the e-journal service.
5. Some E-resources are duplicated by Indian Consortia. The one of the concepts of Consortium subscription is to avoid redundant expenses and duplication of subscription.

Conclusion

Consortium is gaining momentum in the developing countries and in future more and more consortia would emerge to serve their members. The consortium should take lead role in the development of a national strategy for information provision for research in higher education.

E-journal consortia have already come up in India and some others are in the offing. Libraries have really understood that consortia based subscription is cost effective and also avoids redundant expenses and duplicate subscriptions. This is a healthy developments, as libraries are shifting from the 'owning' model to the 'access' model. In the long run the consortia approach will expand the country's information base.

Library Consortia is at the doorsteps to prove cooperation locally, regionally, nationally and internationally. It is an encouraging sign with good number of consortia efforts are undergoing in India. But consortia efforts are time consuming, frustrating and difficult to build and maintained by groups of interested institutions in India. Hence, it is suggested that the issues can be taken at Central Government level and form a national level consortia covering all the educational and research libraries irrespective of ministry, departments and states in India. This will provide good opportunities for exploiting the consortia resources effectively and efficiently in use.

The government should also make attempts to provide the necessary infrastructure such as high speed networks connections to access the electronic resources. Also it should make arrangements to conduct some training programme for the librarian on latest trends in Library and Information Technology.

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E-Journals Use Study: A Proposal for Methodology

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ABSTRACT

This article introduces the e-journals as one of the categories of e-publishing. Focuses on the need for e-journals use study in a library and information centers. And proposes the methodology for conducting the use study on e-journals use by the academicians and researchers. Some of the important studies have been reviewed and presented.

Introduction

Journal has played pivotal role in the creation and transmission of knowledge by serving as the primary medium of scholarly communication, and has remain essentially unchanged in form and function over its lifetime. Despite its benefits to Science and scholarship, the paper journal system has been subject to much criticism. Because the high costs that are escalating faster than the rate of inflation and lacks of selectivity, spiraling costs and long publication delays are perhaps the most serious criticisms. At the same time that the costs of producing the print journal have increased sharply, developments in Information and Communication Technology (ICT) have accelerated. The ICT has provided to create alternative electronic publishing of the print journal. It is possible that these new electronic media of computer-based communication will transform the scholarly communication. (Steph and Kim, (1996)

Electronic Publishing (E-Publishing)

E-publishing stands for Electronic publishing, is publishing process for production of documents containing such as text, graphics, pictures, tables, equations, etc... In general it is used to mean any information sources published in electronic form. E-publishing can also be presented as a combination of Electronic technology, Computer technology, Communication technology and Desk Top Publishing (DTP). There are various modules that can be used for publishing an electronic media. The modules are based on the type of documents.

The varieties of e-publishing sources are E–journals, E–books, E-databases and E-publishing Community on Internet (Wilson, 1997)

E-Journals

Electronic journals, or e-journals, have become an important tool for scientists and researchers in the present technological era. The e-journals are simple mirror copies of print journals, differing only in format. The e-journals may be defined very broadly as any journals, magazine, e-zine, web-zine, newletter or type of e-serial publication which is available over the Internet and the World Wide Web. The e-journals can be electronically accessed using different technologies such as the web, gopher, ftp, telnet, e-mail or listserve of course, virtually all modern e-journals are mostly available via web. E-journals may be further categorized into three types: On-line journals, CD-ROM journals and Networked journals.

Need

The technology revolution and information explosion has changed our outlook towards functioning and services of library and information centres. The library environment has rapidly changing to electronic environment. The physical volumes of books and journals are replacing by electronic media. The librarian of academic and research libraries frequently use statistics as performance measures by counting the lending items, number of journal subscription, and how many reference questions answered. The very nature of information media changing, by virtue of desktop access, ability to manipulate information and value added features, the libraries and librarians consider to redefine the role of performance as well as the nature of what and how it to be measured (Merce, 2000).

In the present changing scenario, E-journals collection and access is a prime mode of collection development and has extensive usage among the academicians and researchers. E-journals are available through subscription as well as open sources. One among the performance indicator is measuring the use of e-journals among the clientele through a user survey. The primary objective of that user survey would be to investigate usage behaviors and preferences features.

To identify the usage of electronic sources particularly the e-journals, there are no electronic statistics available for that particular title from the publisher. Thus, it is impossible to determine accurately the actual overall use of the journal. Therefore, it is necessary to the librarian that what is the level of electronic information was used, whether print version of the same journal title have been used more times than the electronic version. In that case librarian should think about subscription renewal of that particular journal. Another major criticism in the

consortia or e-journal subscription is title with low use is provided as part of a bundled set of journals. Cancellation of this title, no matter how poorly used in any format, nullifies the library's contract resulting in increased prices for the other titles. Nevertheless, knowing the amount of electronic usage could help the librarians decide when it might be time to renegotiate or attempt to modify the contract.

The experts pointed out that the fundamentals of a good journal do not change online. These include things such as assembling a first-rate editorial board, establishing academic credibility, and matching publishing objectives with publishers and platforms that will fulfill those objectives. As one of the digital library experts put it, "there is currently a tremendous amount of volatility in society titles jumping from one publisher to another in search of the best deal

E-Journal User Study

Although many case studies of individual journals have been done, few large surveys of e-journals users have been conducted and even fewer have collected data on life scientists or data over time. Tenopir and King (2001) conducted surveys on journal usage more generally among scientists, between 1977 and 2001, including some questions on e-journals usage. They focused mostly on the number; of article reading over; a particularly time of period - rather than on the frequency of e-journals. Number of smaller studies has provided one-point-in-time looks at various types of e-journals or electronic literature users.

The focus on library services and perception of the library's value and look more broadly at electronic resources, rather than just at e-journals, as part of the academic information environment. Report on the Café Jus Project at a U.K. University, begun in 1996, Which Surveyed 75 Mater's students about the problems they experienced with e-journals and their motivations for using the journals. Another survey with 252 UK academic and nonacademic scientists (in the Life Sciences, Medicine, Hard Sciences) about their access to e-journal article through pay-per-view and other methods.

The e-journals user study is to understand the broad range of value that all of this e-publishing adds. for scholars across a range of scholarly activities, including reading, writing, searching the literature, and creative thinking. Through the both quality and quantitative research, the study may examine how academicians and researchers are making e-journals a key part of their scholarly practice.

The primary objective of the use studies / user survey was to investigate usage behaviors and preference features among the users. Specifically, the goal was in a user study would be to measure:

- current usage of e-journal features

- problems users encounter with features
- the searching behaviors of e-journal users
- reading preferences of e-journal users
- subscription-related behaviors of e-journal users

4. Methodology for E-journals Use Study

The use and use pattern of the e-journals by the academicians and researchers can be studied with standard and useful methodology. The methodology adopted / adapted for study e-journals use pattern will cover all aspects of e-journals and its users. Though Transaction log is one of the methods recognized in the field, it has some limitations. It is advisable that one can use transaction log as well as the survey to obtain full picture of the status. The survey may be designed to answer the following questions:

- Which online features do users employ and find the most useful? For features they have not previously used, which would they be willing to try?
- Do categories of users differ in their use of online features? e.g., Do academic researchers differ from nonacademic researchers?
- How problematic to users are various known difficulties in the electronic environment, such as difficulties with display formats (PDF and HTML) and with lack of links to older issues and cited articles?
- Why do scholars use e-mail alert services, and how useful are they (especially given the increase in ("spam")? Do users act on the alerts rather than just saving or deleting them?
- How do feature users search online? Could search engines be improved to address the search-related frustrations of users? Do users examine more than one screen of search results?
- How do feature users take advantage of the pay-per-view feature, and how much are they willing to pay to read an article?
- In what formats (PDF, HTML, printed copy) do feature users prefer to read articles and view images? Do feature users read and/or scan articles retrieved online on the screen before printing them out?
- How many journals do feature users read and browse at a given point in time? Do high-volume readers have different preferences for reading format than low-volume readers?

- Why do feature users pay for personal subscriptions and society memberships?
- Why do feature users subscribe to new journals or cancel subscriptions to existing journals, and how does the availability of online editions affect these decisions? Do feature users cancel personal journal subscriptions because libraries provide institutional access to online versions of the journals?

Apart from the above key questions, a number of key insights are worth in highlighting:

- Scholarly context and communities shape routines for using e-journals.
- The value proposition of e-journals and online content is distinct for users as searchers, readers, and authors.
- Users will pay for online access to selected titles—but not for individual articles.
- Online scholarly content does not diminish the importance of paper as a scholarly tool.
- Users see e-journals as part of a larger pool of modular e-content.
- Frustrations with e-journals are linked to expectations shaped by the Internet.
- Online scholarly activity is shifting scholarly "action" beyond the journal.

Stanford E-Journal User Survey asks scientists and practitioners who are relatively familiar with electronic journals about their use of features and related scholarly practices such as searching for articles, staying current in your field and subscribing to journals. The questionnaire requests minimal personal information also.

(a) Online Features

1. What's your experience with the following e-journal features?

- E-mailed table of contents alerts.
- E-mailed article citation alerts on topics of interest to the users.
- Videos or animated graphics
- Hyperlinks from one article to a cited article in the same journal.
- Hyperlinks from one article to a cited article in a different journal at no charge (toll-free linking) per links from an article to a scientific database
- Hyperlinks from an article to an author's e-mail address

- Hyperlinks from an article to an author's website
- Pay-per-view (paying online for immediate access to a single article)
- Electronic manuscript submission (through online forms or email)
- Online peer reviews (downloading articles to review, submitting reviews online)
- Access to articles "in press" (peer-reviewed and accepted but not yet revised/edited)

2. How problematic, if at all, are the following issues with e-journal features?

- Videos or animated graphics that play slowly or poorly
- Articles in PDF (portable document format) that load slowly
- Pictures in PDF that are too small to read clearly
- Pictures in HTML that load slowly
- Pictures in PDF that are in black-and-white instead of full color
- E-journals that don't provide hyperlinks to cited articles
- E-journals that don't provide access to older issues

(b) Alert services

3. The following reasons have motivated me to sign up for "email alerts" (either table of contents alerts or citation alerts):

- To become aware of articles published in my field
- To become aware of articles published in other fields
- To keep up-to-date with trends in science and/or medical practice
- To save or print out contents to keep for future reference
- To save or print out contents to use in a bibliography
- To reduce library visits
- To obtain knowledge of new research/practice as early as the information is available
- To browse journals not available to me locally
- To become aware of special one-time publications
- To scan more journals than you would otherwise have time for
- To find articles to review with a group (e.g., journal club)

4. For MOST journals I receive email alerts for, I have access to full-text articles online through

- My individual journal subscription

- My institution's subscription
- I don't have any access to the full-text articles mentioned in my email alerts.
- I don't know how I gain access to full-text articles.

5. My FIRST STEP in following up on the articles I see in "email alerts" is USUALLY:

- Reading abstracts available through e-journals (on the screen or printed out)
- Reading full-text articles available through e-journals (on the screen or printed out)
- Copying/borrowing the printed edition of the journal available locally
- Ordering the printed version of the articles through interlibrary loan services
- I usually do not read either the abstracts or the full text of journal articles I see in email alerts.

(c) Searching for articles online

6. What kind of information do you want to see displayed immediately about articles your search found?

- Title
- Author
- Journal Name
- Date of Publication
- Page Numbers
- ISSN number
- Number of Times Cited
- Abstract
- First Page of the Full Text of the Article
- Sentence in Article that Matched Your Search Terms
- Whether There Will Be a Charge to View Full Text
- Form(s) of Linked Full Text Available (e.g., HTML, PDF, etc.)
- Whether Supplemental Materials (e.g., lab notes) Are Available Online or Not

7a. Where do you USUALLY begin searching for journal articles?

- A general-purpose search engine (e.g., Google, Yahoo)

- A specific journal's website
- HighWire Press's multi-journal search website
- PubMed's multi-journal search website
- Another multi-journal search website (e.g., OVID, SCIENCE DIRECT, MEDLINE)
- An online citation index (e.g., Web of Science, SciSearch, SciFinder Scholar)
- My local library's reference room or stacks

7b. I begin searching at the site I checked above because it:
Is fast

- Is comprehensive
- Is non-commercial
- Is familiar to me
- Is easy to use
- Is reliable
- Has more search options
- Other Reasons

8a. What is your MOST preferred format for reading full-text e-journal articles ON THE SCREEN?

- HTML
- PDF
- Rather than reading from the screen, I prefer to print them out and read the printed copy
- I don't have access to full-text articles online

8b. What is your MOST preferred format for reading figures and images ON THE SCREEN?

- HTML
- PDF
- Rather than reading from the screen, I prefer to print them out and read the printed copy
- I don't have access to figures and images online

9a. When searching for scientific journal articles online, how often do you experience each of the concerns listed below?

- Too many results returned from a search
- Results that are not very well sorted by relevance to my search criteria
- Key words that do not accurately represent the content of articles
- Titles that do not provide enough information about the contents of the article

- Articles that don't provide abstracts
- Articles on topics I wasn't interested in
- Search engines that don't provide cross-reference searches across journal
- Articles that are not available in full text online without paying a fee per view
- Becoming lost when following up on search results

9b. In general, how many screens of search results do you look at?

- First screen only
- 2-3
- 4-5
- 6-9
- 10 or more

9c. When I have a citation and I'm trying to locate the article, I usually search on:

- Author
- Title
- Journal Name
- Volume/Issue/Page

9d. When I'm searching for articles on a particular subject, I usually search on:

- Subject heading (e.g., MeSH term)
- Key word
- Title
- Abstract
- Full Text
- Author

(d) Staying current in your field

10. How many different scientific journals do you regularly read (at least one full-text article) or browse (titles/abstracts), whether in print or electronically, to "stay current" in your own field(s)?

Number of journals read
Number of journals browsed

11. I USUALLY access these scientific journals (to stay current in my own field) through:

- Personal subscriptions to the printed editions
- Visiting a library to browse and/or photocopy their printed editions
- Institutional online subscriptions
- Personal online subscriptions
- Journal homepages online without any subscription

- Printed editions borrowed from my co-workers
- don't regularly read or browse articles to stay current in my field.

12. Do you access journals differently when you are browsing outside of your field?

(e) Pay-per-view

The following section asks about "pay-per-view," an online feature defined here as the ability to pay to view a single article online (in the absence of a full online subscription).

13a. Which of the following statements represent your experience and views regarding pay-per-view?

- If online payment were safer, I would use it more.
- I have canceled at least one journal subscription because "pay-per-view" is available for that journal.
- For some journals where I read only a few articles per issue, I would rather pay a small amount per article than pay for an entire issue or subscription.
- I use pay-per-view only when I need an article urgently.
- I don't need pay-per-view because I already have access to whatever journal content I need through institutional or personal subscriptions.
- I would not use pay-per-view under any circumstances.

13b. If you WOULD use "pay-per-view" under some circumstances, what do you feel is a reasonable price to pay per article online, in US dollars?

How much?

(f) Features you would like to see added to your e-journals

14. Considering all the features we've asked about so far, AND any that we haven't asked about, what ONE e-journal feature would you MOST like to see added by the journals that you read online, and WHY?

E-Just User Study suggests that e- journals practices and e-journal usage patterns must meet the following needs to be positioned for success:

- Deep Archives
- Scholars use features that are aligned with their core information practices
- Libraries and publishers should clearly articulate their service offerings

- Online environments should support core modes of scholarship: searching, reading, and writing
- Scholars need better mapping of the online scholarly landscape
- Users need tools and spaces that allow them to create, maintain, and participate in the community
- Users need support for building new kinds of e-content
- Users want more choice in subscription and membership packages

5. Conclusion

The Stanford E-Journal User Study provides many insights regarding the practices and needs of e-journal users. This report has highlighted some of the key insights from that research, considered them in the broader industry context, drawn out implications for meeting user needs, and made recommendations for libraries, societies, and publishers. To position themselves for success, e-journals must understand how scientists use the media and what scholars need from e-journals. Libraries, scholarly societies, and other publishers must also make critical choices to significantly shape the direction and evolution of e-journals and online scholarly content over the next decade. How well the needs of users are met will affect the future of e-journals as a tool in scientific scholarship and inquiry.

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E-learning: Challenges and Opportunities

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ABSTRACT

The main aim of this paper is to engage those who require the benefits which e-learning and digital resources generally can offer by providing access to informal as well as formal e-learning opportunities. This will engage potential learners to take an active part in the learning process. E-learning should enable learners to develop a capacity to solve problem that will help them to handle their problems in life, ensuring support and improving the attitudes of library professionals.

Keywords E-learning, ICT skills, Work skills, Behavioural Problems, Informal Learning, Formal, Learning, Motivation, Involvement

Introduction

Electronic learning or e-learning is a general term used to refer to computer-enhanced learning. It is used interchangeably in so many contexts that it is critical to be clear what one means when one speaks of 'e-learning'. It is commonly associated with the field of advanced learning technology (ALT), which deals with both the technologies and associated methodologies in learning using networked and/or multimedia technologies. It is essential for individuals to be able to understand and use Information Communication Technologies effectively. However, ICT skills are best acquired in the context of other learning rather than as associated skills. By this we will successfully achieve inclusion of the 'e' in e-learning and help to achieve an optimum return on investment made in creating digital resources.

E-learning is naturally suited to distance learning and flexible learning, but can be also used in conjunction with face-to-face teaching, in which case the term Blended learning is commonly used.

Potential contributions from e-learning

Over the past few years, computers and the Internet have become a part of everyday life. They are revolutionizing the way people learn, communicate, use their free time and earn a living. Yet there is evidence of a significant and troubling gap, largely along wealth, education and geographic lined, between those who have access to online information and those who do not, even as access to technology has increased. How people use that technology and the degree to which it enhances their lives and their opportunities remains inconsistent.

Due to formal education many people in deprived areas have negative experiences and thus have become disenchanted of learning as a whole. Comparatively to the available non excluded majority the diverse range of digital resources can provide much access to learning. Within education, there has traditionally and problematically been an implicit assumption that everyone begins the journey to knowledge from the same starting point. However increasingly now awareness is growing that not all learners follow the same path and arrive at the same destination.

Behavioural Problems

E-learning and ICTs are themselves morally neutral. In itself, technology does not transit values. It is a vehicle for whatever we choose it to be. Internet can strengthen the individual, increase consumer across countries. It can increase the power of collective action-as with those organizing demonstrations on a global scale.

People in library profession have tremendous responsibility in terms of fulfilling not only the requirements of their job related duties but also extending a sense of identification with the community and society and to make the people aware with new technologies. If we are going to succeed in motivating, inspiring and making individuals confident then it is also necessary to recognize that learning is most effective when individuals have access to a wide range of learning experiences and environments, complemented with mechanisms that facilitate interaction with others.

Life Skills

In the knowledge economy participation in regular training and re-skilling is becoming more important. The lifespan of work skills has decreased and individuals are required to become more flexible to new demands. Those who do not will be stuck in low-paid employment and will increasingly marginalized. The Point and Click Report produced by the Foresight task force in 2002 stated that the implementation of ICTs in education cannot proceed on a 'one size' fits all basis. A range of factors should be taken into account: Learning style; Motivation; Subject;

Matter; Age and Socio-cultural context. It is only by customizing learning experiences. Within this there needs to be an appropriate pedagogical framework.

Motivation and Involvement

In order to facilitate greater usage of online content we need to assist in decreasing the digital divide by facilitating access to the internet. But we also need to provide e-learning opportunities for those who currently do not, or cannot use the internet because of lack of skill or confidence or because of physical or cognitive disabilities.

We should motivate the adults or people to access the internet, but do not use it for various reasons because involvement seems to be a 'feedback variable', both a cause and an effect of job behaviour. Cybrarian will then provide support and enable skills acquisition to encourage 'first time' users to become 'regular users' developing users who lack ICT skills into confident and proficient internet users.

Advantages and disadvantages

Key advantages of E-learning are flexibility, convenience and the ability to work at any place where an internet connection is available and at one's own pace. E-classes are asynchronous which allows learners to participate and complete coursework in accordance with their daily commitments. This makes an E-learning education a viable option for those who have other commitments. There are also transportation cost benefits with not having to commute to and from campus.

The cost benefits of E-learning to corporate organizations are difficult to ignore. When using E-learning to train users of corporate computer systems, normally achieved by way of simulation-based learning content, the learner finds himself in a software environment that is exactly like the real one but which does not carry the same error risk. Unlike classroom training, users may repeat the E-learning course without duplicating the cost. It is commonly accepted that the initial cost of an E-learning implementation is expensive, but that the cost of training goes down exponentially as more learners use the E-learning course material. When using E-learning simulations to assess learning progress, the instructor is assessing the actual competence of the user to perform a transaction and not merely knowledge of the system.

Other advantages of E-learning are the ability to communicate with fellow classmates independent of spatial distance, a greater adaptability to learner's needs, more variety in learning experience with the use of multimedia and the non-verbal presentation of teaching material. Streamed video recorded lectures and MP3 files provide visual and audio learning that can be reviewed as often as needed. For organizations with

distributed and constantly changing learners, E-learning has considerable benefits when compared with organizing classroom training.

Disadvantages of E-learning include the lack of face-to-face interaction with a teacher. Critics of E-learning argue that the process is no longer "educational" in the highest philosophical sense. Supporters of E-learning claim that this criticism is largely unfounded, as human interactions can readily be encouraged through audio or video-based web-conferencing programs, threaded discussion boards, of fact, many in K12 would support E-learning if it was not associated with the more extreme versions that attempt to cut out the directed teacher-student relationship

The feeling of isolation experienced by distance learning students is also often cited, although discussion forums and other computer-based communication can in fact ameliorate this and in particular can also be formed on-line. Human interaction, faculty-to-student as well as student-to-student, should be encouraged in any form.

E-learning tends to work better for the student when the topic matter consists of self-learned items. When much group collaboration is required, E-learning can cause lag times in collaborative feedback if the students are not disciplined. For example, some student's may also check their online agenda once an expensive as can systems specifically geared for E-learning. The development of adaptive materials is also much more time-consuming than that of non-adaptive ones.

Improving the capability of e-learning

Improvements in technology bring the promise or vision of paradigm shifting e-learning nearer. Seamless experiences for the learner will only be achievable if we synergize the relationship between infrastructure, content and skills. The optimal vision is to combine the best of human and machine teaching and mentoring capabilities while providing access to advice/resources not available locally. We should not be aiming to eliminate the human relationship.

We should except to have far greater reliance on distributed learning communities and intelligent tutoring systems that convey and adapt subject learning matter on an individualized basis. To engage people into these collaborative learning-by-design environments we should be looking to take the best practice from the multi-layer internet video games sector – with their complex immersive worlds and constantly challenging riles and progressive levels rather than text books, because knowledge is developed through the content of the game, and skills are developed as a result of playing the game.

E-learning Solutions

We should maintain the focus on the individuals and their learning needs rather than let commercial interests drive the agenda. Software and content needs to be developed with specific learners in mind. It is only by achieving the right blend of technology, content and support that we will inspire individuals to progress.

Although it is recognized that ICTs can be used to facilitate learning, there is still a huge gap between the potential and actuality when it comes to using ICTs for this purpose. The successful use of ICTs in learning continues to lag behind those in other sectors, whether in research, commerce or communications. It is difficult to imagine the promise to performance gap widening but there are some who assert that this is widening. The barriers that continue to prevent the realization of the promise or vision must be addressed by encouragement of more user-led design, methodological and technological research/development.

Conclusion

E-learning has the capability to remove barriers to achievement for learners. We know that the e-learning population tends to fall into a bimodal distribution. The two largest populations of learners commonly served by e-learning programmes are 'high-achieving' learners and 'low-achieving' or 'at risk' learners. This underlines the need for more individualized approaches to learning such as, counseling in course selection, mentoring during courses, design of lessons and teacher-student interactions. Learners should be able to access new information to help with challenging tasks or clarify difficult concepts as and when they need. This will enable the catalyst for the shift from informal to formal learning and empower learners with the motivation and confidence to respond to rapid change, whether technological, economic or social.

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Electronic Journals and Consortia Models: A Study of Consortia Initiatives in India

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ABSTRACT

Purpose
Journals, one of the vital resources for the researchers are increasingly available in electronic form. The e-publishing has brought a revolution in journals publication, subscription, access and delivery mechanism. Consortia approach to electronic journals access plays an important role in facilitating access to electronic journals through co-operative purchase options. This article intends to provide an overview of the e-journals as a means of scholarly communication with emphasis on consortia initiatives in India. Concept of e-publishing, kinds of e-publishing, e-journals, kinds of e-journals, consortia, consortia initiatives in India are discussed in detail. So far many studies with different objectives have been conducted about e-journals and consortia, but a systematic study about the new consortia initiatives in India is not done seriously. Hence this paper provides an insight on what are the consortia initiatives functioning in India.

Design/ methodology/ Approach
The advantages and limitations of the e-journals are described and a thorough review of the previous studies and case studies about the e-journals and consortia initiatives are also done. The features of e-journals and consortia initiatives in India are highlighted. The consortia initiatives in India includes-INDEST consortium of all IIT's, IISc and other institutions supported by MHRD, FORSA for accessing Astronomy and Astrophysics journals, UGC-INFONET initiatives, Indian Institute of Management for accessing bibliographic databases, Hyderabad ICICI Knowledge Park, J- Gate, CSIR Laboratories for Science Direct and ISRO initiatives are discussed in detail.

Findings

Librarians should aware of the advantages and disadvantages of e-journals and they should identify the useful e-journals for their libraries. Electronic information sources are attracting user's attention in today's ICT environment. Among these, e-journals open up many exciting opportunities and potentials for libraries. The review indicates that though the consortia are prevalent in the west, there are still more awareness for information professionals in India and more initiatives are to be undertaken. The efforts and initiatives to enhance access of e-journals and digital resources to the academic community in India have resulted in two major consortia based programmes- INDEST and UGC-INFONET. The efforts of UGC-INFONET and INDEST consortium will strengthen higher education system in India. J-Gate is the first major e-journal service initiative in India seriously trying to address the availability and access gap of print journals. Though the print journals continue to dominate user's point of view as well as publishers' revenue, e-journals have made an all-round big impact on economics, access and user base. Also propose a couple of new initiatives to be taken for further studies.

Practical Implications A study of this kind certainly will help the information professionals for selecting appropriate e-journal consortia to their libraries based on the requirement of the users. New consortia initiatives can be discussed and implemented based on the ongoing projects initiated in the country.

Originality/ Value

The study about the e-journals and consortia initiatives of scholarly journals have been important for both librarians and publishers. This paper highlights the importance e-journals and consortia models, especially in Indian context. The various consortia initiatives and models practicing in the different institutions in India are discussed. This will be useful for the information professionals and researchers in the area of LIS.

Keywords: E-publishing, Electronic journals, E-books, ETD, Consortia, INDEST, FORSA, UGC-INFONET, CSIR Consortia, J-Gate

Introduction

Technological revolution and information explosion has changed the contemporary outlook towards the functioning and services of libraries and information centres. The library environment is rapidly changing to electronic environment.

To cope with the accelerated growth of journals, steep rise in their prices, decreasing buying- powers of the libraries coupled with hike in postal

charges particularly for overseas delivery, has led the libraries, publishers and users to opt for e-publishing and e-delivery of documents at a rapid rate. The delays in communicating the research results and the snail process of traditional form of publishing have led to the popularity of e-journals and consortia initiatives. (Thapa, 2002)

A journal contains scholarly articles, processed and published (receiving, refereeing, editing work) and available through electronic media, often known as virtual or paperless or online or popularly electronic journals. (Hatua and Geetha, 2004)

This article intends to provide an overview of the e- journals and consortia initiatives, with special emphasis to consortia initiatives in India.

E-Publishing

E-publishing has been defined as any non-print media material that is published in digitized form to an identifiable public. It is the publishing process where the manuscripts are submitted in electronic format, edited, printed and even distributed to readers by employing computers and telecommunication. Thus, the fusion of electronics, computer and communication technologies together for publishing can be termed as e-publishing to denote any information source published in electronic form. (Bhttacharya and Siddiqui, 2004)
Types of electronic publishing are:

E-books

E- books are nothing but the electronic version of printed books. Electronic books (E-books) are non-serial monographic resources to be accessed by a computer directly or remotely. The contents of an e-book are the usual text, graphs, illustrations, etc. just like that of printed version. The e-books could be categorized such as: page turners, scrolling books, portable books, multimedia books, hypermedia books and cyber books. E- books are one way to enhance the digital library with global 24 hours access to authoritative information and they enable users to quickly retrieve and access specific research material easily, quickly and effectively.(Conneway, 2003)

E-journals

Electronic serials may be defined very broadly as any journal, magazine or news letter which is available over the internet.

E-zines

Electronic magazines are usually termed as e-zines and it is also called web-zine. A periodical publication that is stored on a file server and that

may be distributed or accessed via a computer networks.

ETD

The Electronic Theses and Dissertation (ETD) are electronic documents that explain the intellectual work or research of a research scholar. They are available in a form simultaneously suitable for machine archives and world wide retrieval.

E-newspapers

An electronic newspaper is a self contained, reusable, and refreshable version of a traditional newspaper that acquires and holds all information in the newspaper electronically. (Biswas and Ghosh, 2004).

E-journals

Lancaster (1995) defines e- journals as a 'journal created for the electronic medium and available only in this medium'. E-journals are often referred to interchangeably a 'electronic publishing', 'electronic serials', 'online journals' and 'electronic periodicals'.

Electronic journals are periodical literature that are made available as individual titles via electronic medium, typically the world wide deb. Electronic journals for all practical purpose may be defined by Ravichandra Rao as those journals which are available in electronic media; some may be available on CD-ROM; a few may be only on online; some may be available both in electronic media and in print.

The e- journals have both merits and demerits. Some of the advantages include improved retrieval and hyper linking capabilities and speed of production and distribution. Disadvantages posed by e- journals include technological barriers, economic barriers etc.

The salient features of e- journals can be summarized by Sreekumar and Sunitha (2005) are:

- Can be used simultaneously by more than one user
- Provide timely access
- Allows remote access
- Supports different searching capabilities
- Accommodate unique features
- Save physical storage space
- Can support multimedia information

Postmodern culture which started publication in 1990 is considered as the first peer reviewed journal distributed in the Internet. It was in ASCII text format and made available by e-mail as well as in diskette. In 1992, OCLC published *On line journal of current Clinical Trials* (OJCCT) and it is the first electronic journal which includes graphics (Vithayathil,

1999). OCLC's Electronic Journal Online (EJO) project adopts the www as a distribution mechanism, and now it is known *as Electronic Collection Online* (ECO). Parallel to these developments, in 1991, the commercial publisher Elsevier started TULIP Project in collaboration with several academic institutions. JSTOR, the Journal Storage Project started in 1993, is the first major retrospective electronic archiving project of printed journals. In 1994, the www gained the strong foot hold in academia and now the e-journals are mostly delivered via www. (Hook, 1999)

Consortia approach

The term consortium has been defined as 'a cooperative arrangement among group or institution'. A library consortium provides a way for its member to conduct business in a competitive manner. The basic premise of consortia is that its members can collectively achieve more than what they can achieve as individual institutions.

Library consortia is a group of two or more libraries that have agreed to cooperate with each other in order to fulfill certain similar needs, usually resource sharing. A consortium supports resource sharing and provides services to users through programmes in cooperative acquisition, access to electronic resources, access to physical collections, enhanced interlibrary loan and document delivery.

It refers to co-operation, co-ordination between and amongst libraries for the purpose of sharing information resources. (Ram and Sharma, 2006)

A Consortium agreement helps by giving librarians a choice of purchasing models, budget stability, extended readership facilities and massive reduction on the cost of paper subscription.

The different models of consortia suggested by Bisen (2005) are:

- Print plus electronic access: Print copies of the journals held at the time of agreement will have to be maintained along with the electronic access to the full text database.
- Electronic only: No print is included in this model but can be purchased at a discounted price.
- Flip Pricing: In this model, a price is calculated on the predicted usage and value to each institution.

Consortia Initiatives in Indian Libraries and Information Centres

With globalization of education and competitive research, the demand for the journals has increased over the years. Due to scarcity of funds, libraries have been forced to discontinue the scholarly journals, which have great impact to the users. In order to provide the current literature to

the users, many libraries and institutions initiated e- journal consortia in the country. The phenomenon of consortia or group of libraries buying e-information together has become very important in the last few years.

The concept of consortia in India is still in the initial stage, slowly and steadily it picking up in many institutions. Several initiatives that were taking place in the west in recent times have influenced them to think seriously about consortia.

J- Gate

It is the first e- journal portal from India. Launched in 2001 by Informatics India Pvt. Ltd., J- Gate provides seamless access to millions of journal articles available online offered by 5586 publishers. It presently has a massive database of journal literature, indexed from 16,400 e-journals with links to full text at publishers sites. It also plans to support online subscription to journals, electronic document delivery, archiving and other related services. It is offered in 7 different subject groups. (Rajasekhar, 2002)

Currently J- Gate offers two types of products/ services.

i. J- Gate portal
   a. Table of Contents (TOC) – For 16,400 e- journals
   b. Database - A comprehensive searchable database with 951218 articles, with 4000+ articles added everyday.

ii. J- Gate customized services
   a. J- Gate Custom Content (JCC) – local intranet/ internet solution to libraries, providing e- access for subscribed journals
   b. J- Gate Custom Content for Consortia (JCCC) – JCC extended to a homogeneous group of libraries for sharing 'subscribed' journal resources.

Informatics India Pvt. Ltd. with initiation from 3 different educational institutes has successfully developed three consortium models. They are:

a) SNDT University Consortia of Library and Information Science Abstracts (LISA) with other 6 universities
b) FORSA of Kluwer e- journals consortia programme with 5 institutes
c) IIMs consortia of 33 Kluwer journals in Management Sciences

Types of consortia models in India

The number of consortia models have emerged in India based on funding sources and participants affiliation. Patil and Savanur (2006) have listed the following models:

- Open.consortia: FORSA, SNDT's LISA and INDEST
- Closed Group consortia: CSIR, DAE and IIMs
- Institution Headquarters funded consortia: TIFR and its branch libraries
- Centrally funded consortia: CSIR, INDEST, UGC-INFONET, ICMR
- Shared budget models: FORSA, IIMs and HELINET
- National level consortia: INDEST, UGC- INFONET and ICARNET
- Publisher initiatives: Emerald full- Text library

FORSA

Forum for Resource Sharing in Astronomy and Astrophysics (FORSA) was established in 1981 and it is a typical example of homogeneous group of members of subject group Astronomy and Astrophysics. Following are the members of FORSA Consortium.

i. Indian Institute of Astrophysics (IIA), Bangalore
ii. Inter University Centre for Astronomy and Astrophysics(IUCAA), Pune
iii. National Centre for Radio Astrophysics(NCRAP), Pune
iv. Nizamiah Observatory, Hyderabad
v. Physical Research Laboratory (PRL), Ahmedabad
vi. Raman Research Institute (RRI), Bangalore
vii. Tata Institute of Fundamental Research (TIFR), Mumbai
viii. UP State observatory, Nainital
ix. Harish Chandra Research Institute (HCRI), Allahabad

The FORSA member libraries have undergone many developments like: member libraries have automated their collection, access to electronic journals, resource sharing is being actively carried out among the member libraries, document delivery and database of holdings of member libraries has been merged using LIBSYS software. FORSA Consortium has gone into two consortia formation: Indian Astrophysics consortium with Kluwer publishers for e-access to 23 Astronomy journals and the other for Nature on-line to provide access to its e-version at a price of almost one third of the list price (Rajgoli, Birde and Karissidappa, 2005).

FORSA member libraries are providing various services like:

- Automated book catalogue
- Access to online journals
- Database merging of all libraries holding

- Inter library loan among member libraries
- Document delivery by all means of communication
- Active participation towards sharing resources

ICICI Knowledge Park

Informatics launched the first formal and organized resource sharing consortium, using J-Gate Custom Contents for Consortia (JCCC) as the basis, in the Virtual Information Centre (VIC) at ICICI Knowledge Park (ICICI-KP), Hyderabad. Encouraged and funded by NISSAT, VIC at ICICI-KP used the concept of JCCC to promote and translate the concept of providing access to diverse areas of information into a 'networked resource sharing consortia for journals'.

Services provided by the consortium:

- Union catalogue of all members
- Search facilities
- TOC directory
- Access to abstracts/full text/ pdf/ html/ doc etc.
- Statistics on usage from vendor

CSIR Consortia

CSIR e-journal consortium is a network project under 10th five year plan to bridge-up and strengthen the constant decline of journals information base in CSIR labs/ institutes. It was started in June 2002 after the agreement with the Elsevier Science. NISCAIR is one of the constituent units of CSIR in the area of Information Science of this project aims providing access to 4500 world class e- journals to all S & T personnel of CSIR through pooling and sharing resources.

The CSIR laboratories consortium has been established in April 2000 to benefit its 40 national laboratories carrying out research activities all over India. Based on the recommendations of the task force and the negotiation committee appointed by CSIR all 1200 Elsevier e-journals have been made available to all the laboratories since July 2002.

INDEST

The Ministry of Human Resources Development (MHRD) has set-up the 'Indian National Digital Library in Engineering Sciences and Technology (INDEST) Consortium' on the recommendations made by the expert Group appointed by the Ministry under the chairmanship of Prof. N. Balakrishnan. The Ministry provides funds required for subscription to electronic resources for 37 institutions including IISc, IITs, NITs, IIMs, and few other centrally funded institutions through the consortium headquarters set-up at the IIT Delhi. Besides, 60 Government or Govt. aided Engineering colleges and technical departments in the universities have joined the consortium with financial support from the AICTE. The INDEST-AICTE Consortium is the most ambitious

initiative taken so far in the country. 99 Engineering colleges and institutions have already joined the consortium and recently 443 Engineering colleges and institutions joined under self support new scheme.

The INDEST consortium is based on the subscription to electronic resources for technical education systems in India. It is a consortium of all Indian Institute of Technologies (IITs), IISc and few other institutes through the Ministry of Human Resources and Development (MHRD), Govt. of India is in the advanced stage for providing access to e-journals of Elsevier Science and IEEE.

UGC- INFONET Consortium

UGC- INFONET E- Journal Consortium has been set up by the University Grants Commission (UGC) to promote the use of electronic databases and full text access to journals by the research and academic community in the country. Through INFormation and LIBrary NETwork (INFLIBNET) centre, Ahmedabad, the UGC-INFONET Consortium provides electronic access to research journals, abstracts, review publication and databases, to the university libraries and colleges in the country. Under the consortium, about 4000 full text scholarly electronic journals from 25 publishers across the globe can be accessed. So far 100 universities out of 171 Indian universities have been provided access to these journals and it will gradually be extended to affiliated colleges as well. (Chakravarhty and Singh, 2005)

The services offered:

- Access to e-journals of all fields
  - i. Arts, Humanities & Social Sciences
  - ii. Physical & Chemical sciences
  - iii. Life Sciences
  - iv. Computer, Mathematics & Statistics
- Online access of full-text articles
- Reviews and Abstract database
- E-journal access of
  - i. Project Muse
  - ii. American Chemical Society
  - iii. CAS
  - iv. Royal Society of Chemistry
  - v. Institute of Physics
  - vi. Cambridge University Press
  - vii. BIOSIS
  - viii. Nature

The most attractive feature of the service is automatic generation of e-mail request for inter library lending among the consortia members.

RGUHS- HELINET Consortium

The concept of HEalth science Library and Information NETwork (HELINET) is adopted by Rajiv Gandhi University of Health Sciences (RGUHS), Karnataka in 2001 to network all health science libraries under its affiliation and develop a consortium for resource sharing and which is first of its kind in the country. The consortium was started with a vision to improve the quality of education and research in the Health science institutions of the state through enhanced access to high quality medical information. (Urs, 2004)

The major benefit of this consortium was expanded access to core international e- journals. HELINET has made it possible to each college access and share the contents in more than 600 journals, in effect increasing the access provision by six times.

ICMR Consortia

As part of modernization the Indian Council of Medical Research (ICMR) has under taken many new initiatives like subscribing to JCC@ICMR and Full text electronic databases. To keep pace with the rapidly changing information technology scenario, the ICMR entered into the e-journal arena through developing an e-journal consortium. In the first stage, the ICMR has identified five core biomedical journals and subscribed for e-version in consortia mode of all ICMR institutes. These include Lancet, Science, BMJ, NEJM and Nature.

ISRO Initiatives

The resource sharing initiative taken by ISRO libraries by avoiding duplicate subscription to bibliographic databases is expected to result in savings of Rs. 41 lakhs per year. A move is there to form formal consortia for providing access to e- journals and also J-Gate Custom Content for Consortia. (Sreedhar, 2002)

Consortia of IIMs

Six Indian Institute of Management (IIM) have formed a consortium and jointly approached the publishers of e-journals and databases in the area of Management, Social and Behavioral science source. They have been giving IP enabled access to e- journals- Elsevier (247 titles), Blackwell (268 titles), Kluwer (33 titles), Wiley (3 titles). Apart from 25 titles free against print subscription, 2300 titles as a part of EBSCO databases and 800 titles as part of ABI Inform database have been made available to users of IIM libraries electronically. IIM consortia did not find any

difficulties dealing with the publishers as they were able to make payment directly to the publishers individually. (Raina, 2004)

The other prominent Indian consortia initiatives which are worth mentioning here are:

- Society for Networking of Excellence in Technical education (SONET), Hyderabad has been established in September 2003 with association of all engineering colleges in Andhra Pradesh.
- Osmania University, Hyderabad was pioneering to establish consortia in 1998. This is only for mathematics as covered by Math Science Net of American Mathematical Society. (OUHYD MATHS Consortium).
- Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam, Tamil Nadu has 12 units and 14 field stations under the institution for resource sharing and the consortia initiative has in agreement with Elsevier Science publishers.
- Indian Council of Agricultural Research (ICAR) Network is also in the process of constituting a consortium for its institutes.
- SNDT University Consortia of Library and Information Science Abstracts (LISA) with other 6 universities (Ram and Sharma,2006)

The prominent ongoing library consortia successfully operational in India listed by Sreekumar and Sunitha (2005) are shown in the following Table.

Sl. No.	Name	Participating Libraries	URL	Resources	Amount Rs. in Crores
1	UGCINFONET (INFLIBNET)	142 University libraries	http://web.inflibnet.ac.in/info/ugcinfonet/ugcinfonet.jsp	1. 2000 e-journals 2. Several databases 3. JCCC	30
2	INDEST (MHRD)	639 (37 MHRD Institutes + 602 others)	http://paniit.iitd.ac.in/indest	1. 10000 e-journals 2.16 databases 3. JCCC	24
3	FORSA	11	http://www.iiap.res.in/library/forsa.html	25 e-journals, Nature journals	Not provided
4	DAE	50	http://www.tifr.res.in/libws	1600 e-journals	2
5	CSIR	40	http://www.niscair.res.in/ActivitiesandServices/MajorProjects/majproj.htm	3100 e-journals	25
6	ISRO	12	Not provided	1. 900 e-journals 2. JCCC	Not provided
7	IIM	06	http://www.iimahd.ernet.in/ http://www.iimb.ernet.in/ http://www.iimcal.ac.in/ http://www.iimidr.ac.in/ http://www.iimk.ac.in/ http://www.iiml.ac.in/	1. 1050 e-journals 2. 6000aggregated titles 3. 12 databases 4. JCCC(4271 journals)	5 (partly funded by INDEST)

8	HELINET (RGUHS)	26	http://www.rguhs.ac.in/HELINET HOSTCONSORTIUM/homehelinet Host.htm	1. 600 e-journals 2. JCCC	2
9	ICICI-KP	07	http://www.icicknowldgepark.com/	1. 500 e-journals 2. JCCC	Not provided, funded by NISSAT
10	ICMR	24	http://www..jcc.icmr.informindia.co.in/about/about.asp	1. 693 e-journals 2. JCCC(11800 journals)	Not provided

Table 1: Major Indian library Consortia

Encouraged by the need to share the knowledge and experience of this emerging area, an International Coalition of Library Consortia (ICOLC) has been formed with Yale University library as the coordinating centre. ICOLC currently has a membership of 150 library consortia around the world. INDEST and FORSA consortia from Indian are the members of ICOLC. (Yale University)

Constraints of Consortia in Indian libraries

Gouder and Narayana (2004) have listed following constraints related to the consortia initiatives in Indian libraries.

- Lack of awareness about consortia benefits
- Slow acceptance of e-information by the users
- Difficulties in changing the mind setup of librarians
- Maintenance and balancing both physical and digital library
- Inadequate funds
- Single point payment
- Rigid administrative, financial and auditing rules
- Problems of defining asset against payment
- Pay-per-view not yet acceptable
- Uncertainty about the persistence of digital resources
- Lack of infrastructure for accessing electronic sources
- Unreliable telecommunication links and insufficient bandwidth
- Lack of appropriate bibliographic tools
- Lack of trained personnel handling new technologies
- Absence of strong professional association
- Big brother attitude

Conclusion

The Consortia of Indian libraries can be considered as a major step towards library cooperation in sharing electronic resources. Consortia are the group of research institutions come under one roof focused on a

particular research area and applying computational technology to access the resources.

Librarians should be aware of the advantages and disadvantages of e-journals and they should identify and balance the facts that would make e- journals a success or failure in their libraries.

Consortia efforts are time consuming, frustrating and difficult to build and sustain. But still, they are potent, social, economic and political forces in reducing the unit cost of e-information and increasing the resource and user base and help libraries to achieve more collectively than they could accomplish individually. It is satisfying to note that few librarians in India have taken up consortia initiatives to provide access to e-journals, which probably is the only way to satisfy increasing information requirements of vast number of Indian academic and R & D workers. (Gouder and Narayana, 2004).

With the explosion of information and knowledge and the limited financial resources, consortia have emerged as an essential necessity for libraries. The consortia initiatives are growing and expanding and there is urgent need to form library consortium at regional, state and national level in Indian libraries.

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Internet Resource Awareness Among the Urdu Research Scholars

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ABSTRACT

This paper attempts to asses the Internet awareness among the Urdu research scholars through the case study of Urdu research scholars of the University of Hyderabad and their usage of Internet facilities of the IGM Library. It is hoped that the findings and observations of the survey analysis will help the policy makers. A few ideas are suggested to further the cause of employment opportunity of the language students.

INTRODUCTION

India being a country of pluri-ethnic and pluri-culture nature has a fairly high degree of multilingualism. Multilingualism is a product of close contact of language family's viz. Austrian, Dravidian, Sino-Tibetan and Indo Aryan from the earliest recorded history and they had been Indianized in such a way that it has given rise to a distinct Indian identity.

The National Educational Policy of 1966 and 1986 lay specific emphasis on the study and teaching of all Indian languages and its literature along with English.

Language being a most important medium of communication and education, its development occupies an import place in the national policy on Education and programme of action in India. , the government

has established various organizations for the promotion and development of the Indian languages listed in the constitution.

The term 'Urdu' for the language was not in usage until about mid eighteen century and it reached India during the time of Moghal emperor Babur and was meant for military camp usage only. Urdu writer, Insha used the term in his 'Darya-e-Latafat' 1808 to indicate camp. It was a language in wide currency among the royal forces and was a preferred language of the scholars. Thus, there is a very rich literary tradition in Urdu language.

The Internet has opened up a whole new world of Information access. Today, more than 350 million people are supposed to be using the Internet all over the world. According to International Data Corp., more than quarter of a trillion dollar's worth of business is being transacted over the Internet.

In India there is communication revolution due to the advent of the mobile phone and fairly easy access to the Internet facilities. In recent years the Government of India has been promoting the use of IT in various government institutions, transactions. The Educational Authorities are vigorously taking up the introduction of IT in Educational Systems.

Internet and the Urdu Language and Literature

The National Council for Promotion of Urdu Languages was established in 1966 in order to promote and develop Urdu, Arabic and Persian languages.

The councils outstanding contribution is its developmental efforts in collaboration with C-DAC, Pune, to develop Internet oriented advanced Urdu software. One year Diploma course in computer Application and Multilingual DTP is being conducted by *Computational Calligraphy Training Centers for Urdu – Hindi – English all over India.*

A few examples of the Urdu e-resource sites available through the Internet are given below.

Urdu E-Resources – Journals and Books

a) E-Journals and Newspapers on South Asia
   e-Journals, e-Books and e-Newspapers in urdu language from Pakistan
   www.columbia.edu/culweb/indiv/southasia/ejournals.html - 104k-

b). Teaching resumes on South Asia

Databases, e-journals, e-books and some useful sources on Urdu language and literature

www.columbia.edu./cu/lweb/indiv/southasia/cuvl/teaching.html -68k -

c). Pak Avnue > News and media – Urdu magazines and journals

Web directory – e-zine for children in urdu language

pak.avenue.com/db/News_and _Media/urdu_Magazine and _Journals/ 6k

d). Department of Urdu, Bahauddin Zakaria University, Multan, Pakistan

More than 12000 books are available on urdu language and literature

bzu.edu.pk/urdu/index.asp – 21k –

e). Dr. Zakir Hussain Library E-journals, 15 major databases in varius in areas of sciences and valuebl books in language in Vedas, Upanishds, Ramayana etc.

Jmi.nic.in/ZHLDr, ZakirHussainLibrary.htm – 22k-

f). National Council for Promotion of Urdu Language

Jam-e-Urdu encyclopedia in complete in itself

www.urducouncil.nic.in/publication/index.htm -33k-

Urdu Research Scholars: A Case Study of University of Hyderabad

Hyderabad Central University (HCU)

The university of Hyderabad is a premier institute of post graduate teaching and research in the country. The university has 8 schools of study, and number of Centers of Study. These Schools/Departments /Centers offer P.G. and P.G.Diploma courses and Ph.D. programmes in major areas. M.phil programmes are mainly offered by the Schools of Humanities and Social Sciences. The university has established Special Centre for Integrated studies (2006-07), which offers 5 year Integrated Master's degree course in certain subjects.

The School of Humanities comprises of Departments of Philosophy, Department of various Literatures (English, Telugu, Hindi, and Urdu), Department of Sanskrit Studies, Centre for Applied Linguistics & Translation Studies, and Centre for Comparative Literature.

Department of Urdu : a Profile

Department of Urdu lays emphasis on the interdisciplinary job oriented education in urdu . ***This Department is the only department of Urdu in India to have its own fully equipped Computer lab with number of PCs having multimedia kits, CD scanners and Internet facility***

The department offers M.A., M.Phil, and Ph.D. programes in Urdu . The M.A. Urdu syllabus has both modern and interdisciplinary features, the highlight being a ***core/compulsory course in computer and Urdu software practices.*** Currently, The department has a strength of seventy seven students out of which forty belong to Masters level, twenty-five to M.Phil category and twelve are Ph.D. research scholars. .

The Department has excellent faculty comprising of two professors, two readers and three lecturers.

IGM Library

The Indira Gandhi Memorial Library is a central facility which supports the teaching and research needs of the university. The library has a collection of more than 3.0 lakhs books and back volumes of journals. The library subscribes to around 500 journals, several popular magazines and newspapers in English and various Indian Languages. The Library also subscribes to over 17,000 on-line full text journals including e-journals.

The library has achieved several distinctions in IT applications. The university has several PCs with Internet facility exclusively for student users. The Library is connected to all Schools/Departments/ Centers through the Campus wide LAN. The library is the first to establish a Digital Library as a model and is one of the scanning centers for the Universal Digital Library project of the Carnegie Mellon University USA. It has the digitalization of the thesis and dissertation collection as an on-going program.

The Urdu Collection

The library has about 30,000 Urdu books and subscribes to 21 Urdu journals (print form), which can be searched through the OPAC. The bibliographical details of all the Indian Language books, which includes Urdu, are transliterated into English. The library also has about 3000 Urdu back volumes of journals published from India and Pakistan as far back as 1920s. The library also possesses a few rare manuscripts.

3.4 Scope of the study

The study is confined to the current Master of Philosophy and Doctoral study students belonging to the Urdu Department of Hyderabad Central University. The study tries to assess the awareness of Internet and the use of Internet resources during the academic pursuit. Attempts are made to find out what is lacking and what is necessary.

Methodology

To gather data about the Internet Awareness and Usage, structured questionnaires were designed and the students were requested to fill the questionnaire. Through direct personal discussions, attempts were made to elicit the opinion of the students about the reasons for not using the Internet, the e-resources, etc., and also why the print media is preferred.

As mentioned above, there are a total of thirty-seven scholars (25 M.Phils and 12 Ph.Ds) in the Department of Urdu. The questionnaires were served to all the scholars and out of the thirty-seven, twenty-five scholars responded (16 M.Phil. and 9 Ph.D)

Analysis

The various observations arrived at after analyzing the data are provided under appropriate charts .

Table -1 Distribution of Responses of scholars

S.No.	Scholars	No. of respondents	Percentage
1.	M.Phil	16	64%
2	Ph.D.	9	36%
3	Total	25	100%

From this table it is found that 64% M.Phil. scholars and 36% Ph.D. Scholars responded to the study.

Table – 2 Formal computer training

	M.Phil Scholars	Ph.D. scholars	Total	Percentage
Yes	15	7	22	88%
No	1	2	3	12%
Total	16	9	25	100%

It is noticed that 88% of the respondents are having formal computer training.

Table -3 Frequency of visit to Internet Counters/Facility

S.No.	frequency	M.Phl.Scholars	Ph.D.Scholars	Total	Percentage
1.	Every day	10	7	17	68%
2	2-3 times a week	5	1	6	24%

3	Once a week	1	1	2	8%
4	Total	16	9	25	100%

It can be seen from the above table that 68% of scholars visit library Internet counter daily, 24% visit 2-3 times a week and 8% visit once a week only.

Table – 4 Print media and e-resources usage

S.No.	Resourses	M.Phil..Scholars	Ph.D. Scholars	Total	Percentage
1.	Print media	12	4	16	64%
2	e-resources	2	2	4	16%
3	Both media	2	3	5	20%
4	Total	16	9	25	10%

From this table it is clear that 64% of scholars prefer print media, whereas only 16% use e-resources and 20% refer both the medias. Still most of the students are dependent on print media.

Table -5 Search Engines used

S.No.	Search Engine	M.Phil Scholars	Ph.D.Scholars	Total	percentage
1.	Google	7	5	12	48%
2	Yahoo	3	1	4	16%
3	MSN	Nil	Nil	Nil	Nil
4	Others	Nil	Nil	Nil	Nil
5	More than one Engine	6	3	9	36%
6	Total	16	9	25	100%

From this table it is found that 48% of the scholars are using Google search engine, 16% use the Yahoo, and 36% are using more than one search engines. Scholars response was not for MSN and any other search engines.

Table – 6 Purpose for visiting Internet

S.No.	Purpose	M.Phil Scholars	Ph.D.Scholars	Total	Percentage
1	E-Mail	2	1	3	12%
2	e-Journals	1	Nil	1	4%
3	e-books	Nil	1	1	4%
4	Update Knowledge	13	7	20	80%
5	Total	16	9	25	100%

It can be noticed from this table that 80% of the scholars are using the Internet for updating their knowledge whereas 12% are using for E-mail. Only a small percentage i.e. 4% from each category are using the Internet to access the e-resources.

Table – 7 Satisfaction with Internet Infrastructure

S.No.	Agree/ Disagree	M.Phil scholars	Ph.D. scholars	Total	percentage
1	Yes	16	7	23	92%
2	No	Nil	2	2	8%
3	Total	16	9	25	100%

This table shows that majority of Scholars i.e. 92% seem to be satisfied with the Internet Infrastructure, whereas 8% are dissatisfied with the Infrastructure.

Gist of Findings:

- Majority of Urdu research students have formal training in the use of computers.
- A significant percentage of scholars visit the library to use the Internet facility.
- A very sizable percentage of Urdu research scholars still prefer the print media to collect data for their research work. Only a small percentage are aware of and use the e-resources.
- The research scholars seem to be aware of only two search engines – the Google and Yahoo. Google is the most popular search engine being used.
- Majority of the Research Scholars seem to be surfing Internet to update their knowledge (current affairs, employment news, etc) and a very insignificant percentage (only 4%) seem to be actually using the e-resources.

- Majority section of the Research Scholars display satisfaction with the current Internet infrastructure facility. A very insignificant (almost negligible) percentage seems to be dissatisfied.

Research Scholars - Requirements / Suggestions

- Downloading and printing facilities to be extended to the Scholars at the library.
- Necessary orientation training to be provided about how to use e-resources.
- All the Urdu manuscripts to be scanned and preserved in digital form
- Exclusive OPAC terminals to be maintained at close proximity to the Urdu Collection in the Stack area.

Observations and Suggestions

Education is a key to create new knowledge. Life Long Learning, in other words Continuing Education is absolutely a must to remain competitive in today's employment scenario. Thus, in order to get suitable employment, promotion etc the students of Urdu have to be abreast with the modern developments in the education field, adapt to the fast – changing working environment, and also be well equipped with the latest technological know-how/skill to be find a niche for themselves in the employment market.

It is hoped that the findings and observations of this study will have significant impact on the curriculum design and policy frame work with respect to the various Indian Language Departments/ Institutions.

A few suggestions are listed below which may be considered as valid for furthering the cause of language students employability.

- Compulsory teaching of English language to make Urdu students eligible in the global employment market.
- IT training to be mandatory for all language students right from school and college level itself..
- Multi-language knowledge (Urdu, Hindi, Telugu etc.) training to be compulsory/optional course to help in finding avenues as translators/interpreters (in Government Offices, MNCs, IT industries, etc.
- Translation skills to be made be part of the curriculum.
- Access to UGC-NET in print form to be available easily.

- Submission of Thesis and Dissertations in print as well as soft copies to be made mandatory for easy access.
- All the thesis and dissertations already submitted to be made available on-line to prevent plagiarism (ex. Vidyanidhi Project

Conclusion

Education is a key to create a new knowledge. Life Long Learning, in other words Continuing Education is absolutely a must to remain competitive in today's employment scenario. Thus, in order to get suitable employment, promotion etc the students of Urdu have to be abreast with the modern developments in the education field , adapt to the fast – changing working environment, and also be well equipped with the latest technological know-how/skill to be find a niche for themselves in the employment market.

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Table: Survey results

Questions	.Master	M.Phil	Ph..D.	Results
1.Comp. Train.				
Yes		12	7	
No		Nil	1	
2. Freq – visit – internet				
a) Everyday		8	6	
b). 2-3- a week		3	1	
c). once- week		1	1	
3. Type of reference				
a) Print media		11	5	
b) e-resources		1	3	
c). Print & e-res		2	3	
4. search Engine usage				
a) Google		8	5	
b. Yahoo		3	3	
c) MSN		Nil	Nil	
d). Google + Yahoo		6	8	
5. Internet Usage Purpose				
a) E-mail		1	1	
b). E-journals		1		
c). E-Books				
d).Knowledge Updation			1	
e). Combinations of above		10	6	
6. Internet infrastructure – satisfaction				
a)Yes		12	6	
b). No		Nil	2	

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KOHA: An Open Source Solution for Library Automation

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ABSTRACT

Many open source software applications now available for Library and Information Management, the organizations have an option to acquire and implement such kind applications. Koha is world's first free open source Library system, comes with full catalogue, circulation, member management, serials management, acquisition and OPAC. This article describes the architecture and modules of the Koha in detail.

Keywords: Automation, Open Source, Koha, OPAC, MARC

Introduction

Libraries should adopt the new sophisticated Information Technology tools to provide accurate and instant information and to cope up with the demands of new knowledge, the enormous increase in the collection of documents, their problem of storage, dissemination and retrieval of information. The appearance of computer has greatly increased the house keeping operations of Library like Acquisitions control, Serials control, Circulation control and OPAC.

International Encyclopedia of Information Technology and Library Science defines automation as "the technology concerned with design and development of process and system that minimize the necessity of human intervention in their operation".

Hollerith invented the punched cards in 1880 for tabulating the census data. In 1950 the Library of Congress (LC) used the unit record machine for the production of catalogues. University of Texas was used the punched cards in 1936 for circulation control and serial control. In 1942 Montclair Public Library in New Jersey used book charging machines.

Open Source Software is software whose source code is made freely available for inspection, modification and incorporation in other software, as distincts from being a closely guarded trade secret of software companies. The licenses typically specify that applications and source code are free to use, modify and distribute, so long as these modifications, uses and redistributions are similarly licensed.

In the last few years, it has entered the mainstream software market, with the widespread adoption of packages such as Linux (OS), mySQL, PHP, Perl, Python, Apache Web Server, and the Zope content management system. Its effects are beginning to be felt in the Library Automation market place as open source projects develop within the Library community.
Development of Open Source products is generally rapid and more responsive to users compared with that of commercial software. The open source system has the advantage of relatively low cost.

Open Source Software's

- **GNUTECA** is free, open source software for library automation, including s loan system, catalog collaboration, MARC editing, etc.
- **Museolog** is a web driven software system for cataloging of museum information. It is developed by EUROCOLD & UNESCO HeritageNet Project.
- **LearningAccess ILS** is a full feature open source Library automation system developed for public and school libraries throughout the world. The system fully supports MARC21, Z39.50, Unicode and other standards identified by IFLA.
- **Avanti Circulation System** is a simple, scalable, networkable, client/sever circulation system. The product consists of circulation module, minimal OPAC, and network and user interfaces.
- **PhpMyLibrary** is a PHP MySQL Library automation application, it consists of cataloguing, circulation, and WebOPAC module. It has got import and export feature also. It strictly follows the USMARC standards.
- **OpenBiblio** is automated library system written in PHP containing OPAC, circulation, cataloguing and staff administration.
- **e – Granthalaya** is a library automation package developed by National Informatics centre, Bangalore. It consists of circulation,

cataloguing, Acquisition, serial control, OPAC and other modules.

Koha

Koha is a full featured open source Integrated Library System (ILS) for automating Library transactions, developed initially in New Zealand by Katipo Communications Ltd and first deployed in January of 2000 for Horowhenua Library Trust, it is currently maintained by a team of software providers and library technology staff from around the globe. It has all the basic features needed to run a Library.

- Online Public Access Catalogue of the Library holdings
- Database of Library users
- Circulation i.e. issues & returns of Library items
- Reservation Facility for Library items
- Management of serials i.e. subscription, renewals etc
- Budgets management
- Transfers between Library Branches
- Other most of the related functions of the Library
- It uses dual database design that utilizes the strengths of the two major industry standard database types (Text & RDBMS). This ensures that it is scalable enough to meet the transaction load of any Library.

Koha supports MARC21 and UNIMARC bibliographic records. It also uses Z39.50 protocol.

Software and Hardware Requirements

- Operating System: Linux or Debian or Windows
- Web Server: Apache
- Database: MySQL
- Programming Language: Perl
- 1GB RAM, 80GB Hard Disc
- Pentium 4 or Due Core

Koha Architecture

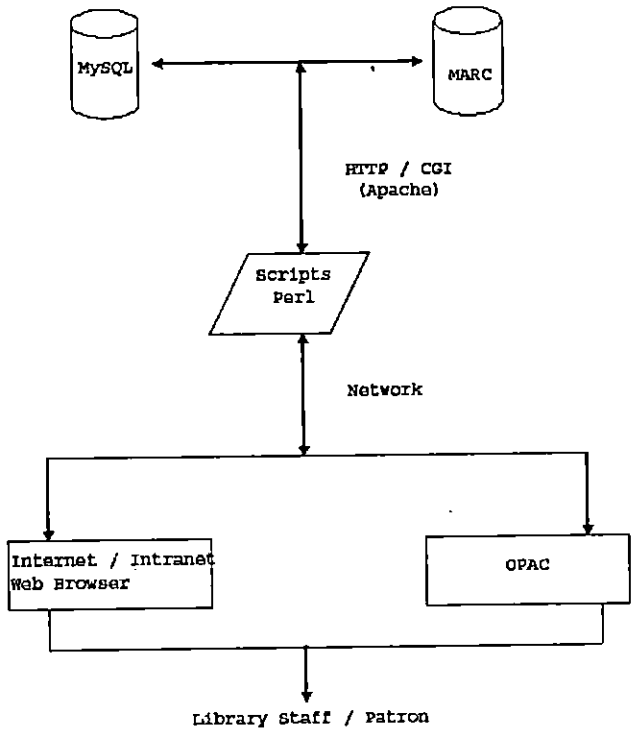


Figure 1: Koha Architecture

Koha is built around several different architectural components working in concert. The Apache HTTPD server is the default tool supporting the heart of the Koha system. Set of Perl scripts that are the buffer between the user and the system (back end). These scripts on Apache and the web browsers that display their results are in a client/server relationship.

Server side scripts are called via the CGI extension of the Apache HTTPD server. The scripts are all written in Perl. There are modules written in Perl that will access the database (MySQL).

All HTML Pages are generated by Perl scripts. There is a standard HTML Perl module that generates the HTML pages based on HTML Perl templates.

There is a set of Perl modules for the Koha part of the system and a separate set of Perl modules for the Intranet part of the system.

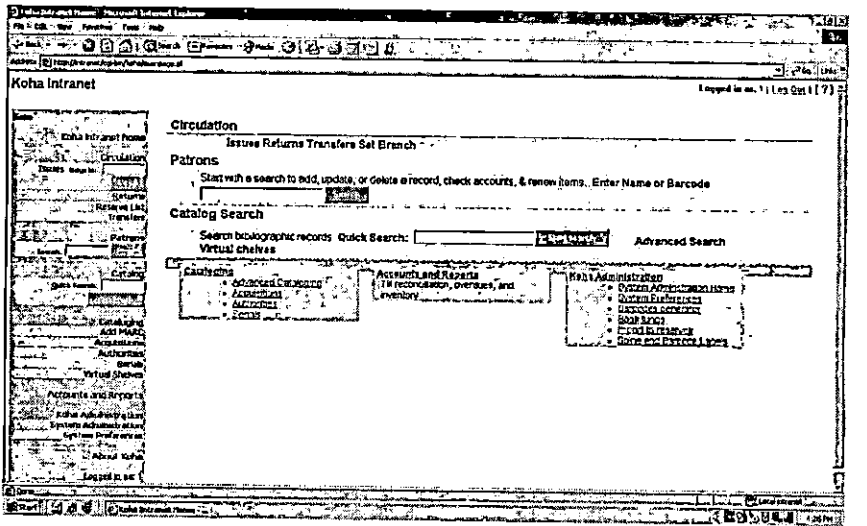


Fig 3: Homepage of Koha Intranet

Koha Modules

Koha is integrated with the all most all the modules of the Library management system. In administration module there is option to generate the barcodes, import and export the BDP records, MARC Structure, Z39.50 servers and many more options. Statistics can be generated in Accounts and Reports module to see how the system will work effectively.

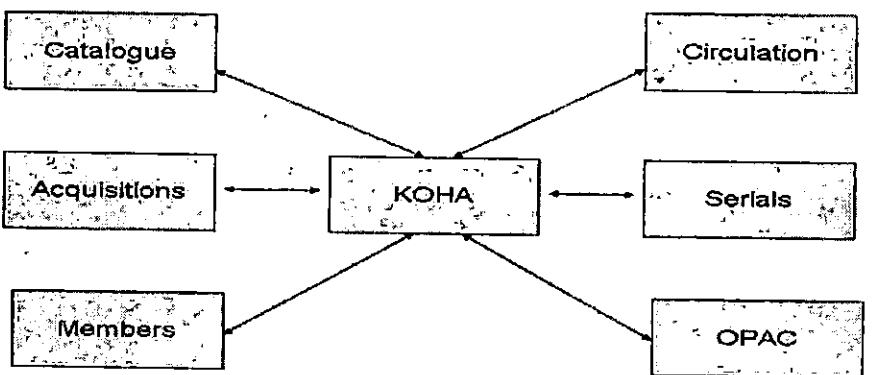


Fig 2: Koha Modules

Acquisitions Module

The Acquisitions module is divided into three parts

- Budgets and Book Records
- Suppliers
- Orders via Shopping baskets
  1. Orders are submitted for approval before they are sent

2. Orders can be printed or sorted by order creator, or by book fund, then creator

Budget tracking can be done by

- Budget available
- Committed budget: When an order is placed, the corresponding funds are committed
- Spent Budget: When an order is delivered, spent amount

Koha manages orders in foreign currencies, secondary suppliers, partial deliveries, etc. A supplier can be deactivated but not the user.

Serials Module

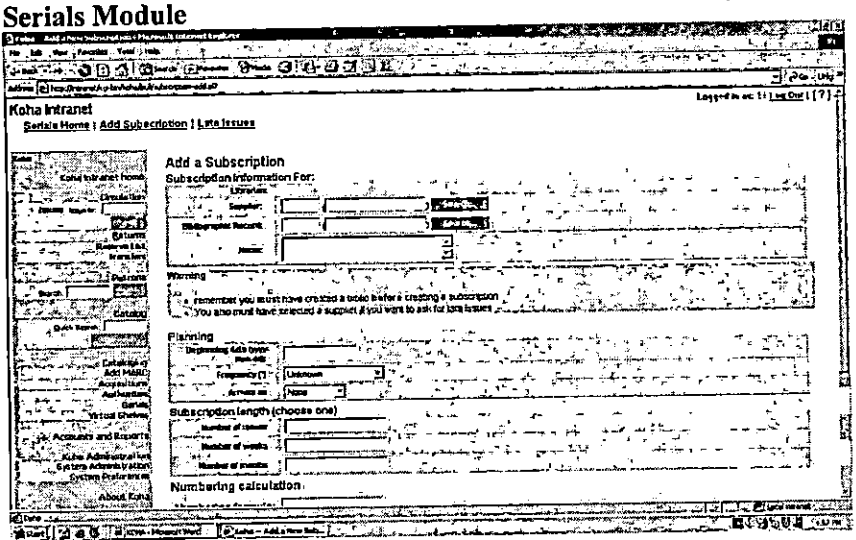


Fig 4: Serials Module

It is possible to register subscriptions with reviews, and to track the arrival of periodicals. It manages late issues, skipped issues, and claims with the suppliers. It manages complex classifications, allowing the Librarian to work with eleven different publication periods (from daily newspapers to annul publication) with delayed publications, and with publications out of sequence.

Circulation Module

Koha is a ILS capable of managing Libraries divided into

- Several rooms (Separate collections)
- Several branches – Each item is assigned to a branch.

The circulation module allows

- Borrowing a work from any branch
- Returning an item
- Reserving an item
- Transfer of an items from one branch to another

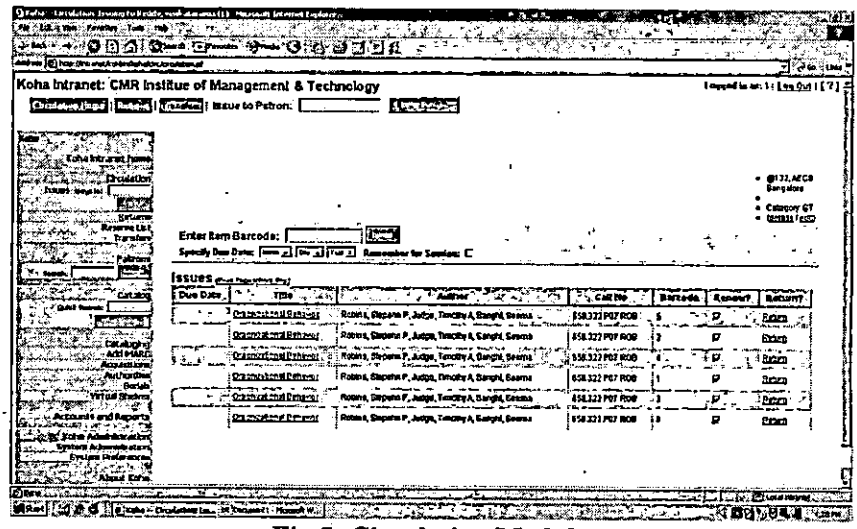


Fig 5: Circulation Module

Cataloguing Module

Koha manages

- MARC records
- Tag 995
- The thesaurus and authority lists
- Importing records in ISO2709 format (the MARC reservoir) and through Z39.50 (client) for fast cataloguing.

The cataloguing module is one of the principal strong points of Koha. Several 'frame works' can be defined to do different cataloguing for monographs, electronic resources, periodicals, etc.

The MARC editor of each frame work is divided into 10 different tabs, making it possible to organize the display of the catalogue record. Each MARC tag and subfield may be presented to the user, using the explicit tag description (Tile, Personnel Name etc.). The corresponding tag number is also visible where necessary or preferable.

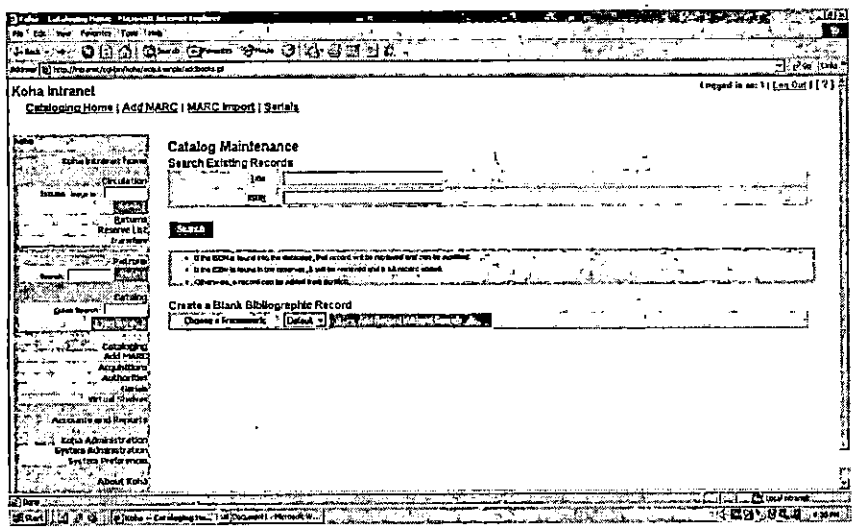


Fig 6: Cataloguing Module

Each MARC subfield can be affected by user constraints

- Required Subfield
- Repeatable subfield
- Data type:
  - Free format: There is no constraint on the data that can be entered.
  - Subfield with "authorized values". This constraint is used for the language of the document or the type of work (CDROM, Monographs, etc.).
  - Subfield connected to a thesaurus/authority list. A symbol ("...") makes it possible for the cataloguer to open a new window for searching in the thesaurus. It is possible to manage an unlimited number of thesaurus/authority lists (Proper names, common nouns, collective authors, etc.).
  - Subfield with specific management ("pulgin"). The behavior of plugin is specified by a Library programmer. These plugins for all the 1xx fields of standard UNIMARC.
  - "Hidden" field: Managed and visible in the MARC editor, but invisible in the OPAC.
  - "URL" field: The field is a clickable link in the OPAC.
  - "Synonymous Semantic": This constraint makes it possible to extend a search on this field over other fields which have the same semantic significance.

The call number can be pre-calculated

- From the Dewey Classification of the bibliographic record.
- From the Library of Congress classification.

The location of a document can be defined on three different levels:

- The branch
- The building / rooms
- The call number

Koha accelerate fast cataloguing by

- Management of a MARC record reservoir, in ISO2709 format.
- A Z39.50 client that can access several Z39.50 servers.

Members Module

It is possible to manage not only individual borrowers, but also institutions, children's, and families. It manages several addresses, telephone numbers, etc. It defines the minimum and maximum ages for members, cost of placing a reservation on an item, and rules for circulation.

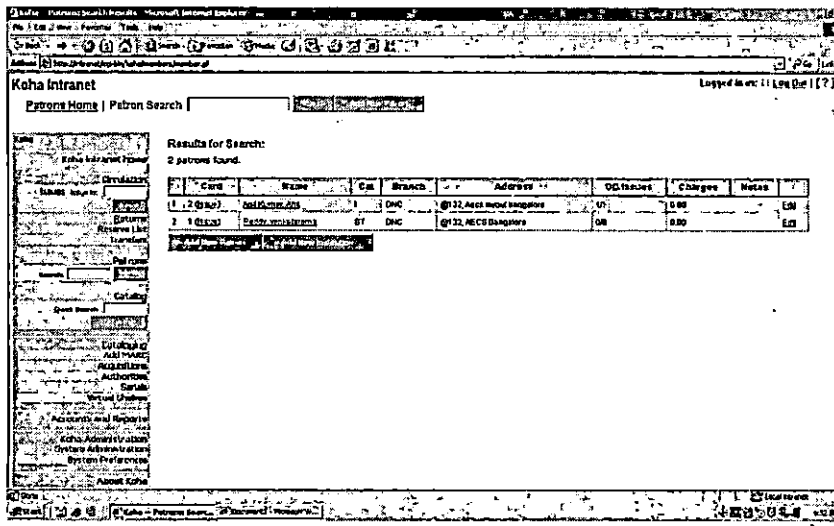


Fig 7: Members Module

Librarian or Administrator can see the

- Overdue charges
- Reservations
- Set permission flags
- A note can be attached to each borrower record, which appears during circulation
- A note can be displayed to individual members when they log in on the OPAC.

WebOPAC Module

Koha provides a full functioned OPAC. OPAC users can carry out searches starting from ten fields (title, author, publisher, etc.). Catalogue

data can be displayed in MARC format or in ISBD (International Standard Bibliographic Description) format.
OPAC users can change the language of the OPAC for themselves. This change disappears when the web browser is closed, it returns to the default language the next time browser is launched.

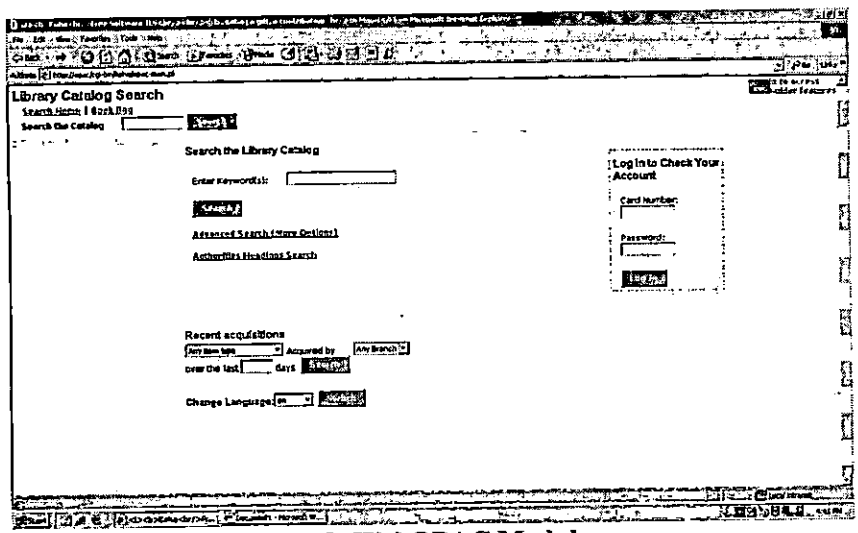


Fig 8: WebOPAC Module

Logged-in members of OPAC can place reservations for an items, message will appear on the circulation screen when the item is returned.

Virtual Shelves is one of the important features of Koha. Logged-in members can create one or more virtual shelves on which he/she can "arrange" items permanently.
Three types of shelves are available

- Private shelf: Only the creator can view it and modify its contents.
- Public shelf: Any logged in member can view it or modify it.
- Free shelf: any logged in member can view it or modify it.

Biblio Basket: Logged-in members can select records from on OPAC search and retrieval them by e-mail, either in human readable form or in an ISO2709 format file. An ISO2709 file can be processed using bibliographic software like EndNote.

A Suggestion Module is available in the OPAC, interfacing with the full acquisition module. Logged in users can submit suggestions for acquisition of an item, Koha automatically inform the user (by e-mail) action taken on each suggestion. If it is accepted, the order will be

placed. Once the placed order has been received, it will be informed to the user by e-mail.

Conclusion

The open source software's has brought the revolution in the all the fields of human being and also in the field of Library science. Open source software's given the way for the free flow of Information to the end users. Koha is one such software available for free, definitely it fulfills the requirement of any kind Library house keeping operations.

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http://www.kohadocs.org/usersguide/index.html

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Open Source Software and Libraries Bibliography, http://www.vuw.ac.nz/staff/brenda_chawner/biblio.html

Library Automation Tools http://www.smecc.org/library_automation_tools_for_you.htm

Open Access for the Medical Librarian: A Selection of Key Websites

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ABSTRACT

Open access is free availability immediately on publications. For a number of researchers worldwide, publishing articles in open access journals is increasingly seen as an alternative to publishing in the traditional journals. The open access movement has had a tremendous worldwide impact and involves not only the academic and publishing communities but also many other disciplines. The open access movement is supported and advanced by a spectrum of interest groups and activities such as national and international organizations, publishers, individuals, and many special events. Medical Librarians are frequently overwhelmed by the amount of open access resources. The medical resources that are already available as open access are significant, and the growth rate is phenomenal. Given the enormous amount of open access resources on the web, this paper makes an effort to list the key web sites for the Medical Librarian.

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Learning Organisation and Knowledge Management

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Introduction

Concept of knowledge management is a very powerful one and one that if fully implemented has the potential to make the future of librarians and information specialists both very exciting and very rewarding. Implementing "knowledge management" into an organization's culture is not a process that meets the criteria of "one size fits all" but must be adaptive to fit the constant changing information needs of your clientele and the changing access patterns to information. Four components are generally recognized as essentials for a knowledge culture:

- Comprehensive information or data resources
- Integrated technology platform
- A collaborative corporate or organizational environment
- A creative or innovative information specialist

All organizations and individuals are being flooded with information and data as byproducts of our technological age. Knowledge Management (KM) is all about organizing, storing, and being able to retrieve and, more importantly, use that information, whether it be external or internally-generated information. Commonly, one of the benefits of the successful implementation of a knowledge management program is the creation of a "best practices" database, which can be used by employees to get a fast start on new projects by reviewing previous research or other organizational activities. Jan Carlson, the former Chairman of SAS Airlines, summed up the philosophy behind a knowledge culture as "An individual without information cannot take responsibility; an individual who is given information cannot help but take responsibility."

What is a Learning Organization?

The concept of the 'learning organization@ was first popularized by Peter Senge in his work *The Fifth Discipline: The Art and Practice of the Learning Organization.* Senge (1994) lists and further amplifies upon the five "learning disciplines" that he describes as being at the core of the learning organization: personal mastery, mental models, shared vision, team learning, and systems thinking, which may be briefly described as follows as they relate to the learning organization concept. Personal mastery has to do with individual learning, and can be seen as the basic building block through the actualization of which the learning organization is constructed. Mental models are about how individuals reflect on their knowledge, using such models to improve the internal understanding of a process, an organization's functions, etc. Shared vision implies a sense of group commitment to a matrix or organizational goals, while team learning describes a sharing and utilization of knowledge involving collective thinking skills. The purpose of the systems thinking is to understand relationships and interrelationships (rather than seeing merely the static "snapshots" of organizational patterns or events), as well as the context and the forces that affect the behavior of a system or organization.

On his Web site, Rasmussen indicates the importance of learning organizations:

The Learning Organization is perhaps the dominant management buzzword for the last half of the 1990s. Some suggest that it is merely the reincarnation of earlier ideologies, such as organization development, quality management, and the likes. Others suggest that the particular combination of paradigm shift and practical tools make it stand out from earlier change/transformation theories focused on how organizations might be reshaped to meet the challenges of today's world. (screen 1)

Most authors in the field agree that the learning organization is an ideal, a model to strive toward, and that probably no organization perfectly fits the model. On the other hand, many organizations that are re-tooling themselves to reach for that goal may from time to time be referred to in the literature as learning organizations. Karash states that AA >Learning Organization= is one in which people at all levels, individually and collectively, are continually increasing their capacity to produce results they really care about.@ In fact, in this modern age of information technology, learning has frequently become an integral part of the employee=s task itself. One might say that learning and work have become almost synonymous terms and that employees need to "learn@ their way through the work that they face in much the same way as those engaged in specialized, cerebral fields such as law and medicine are said

to "practice@ their perspective professions, rather than just perform on a rote/repetitive basis. One author states the matter succinctly: Learning is the new form of labour. Learning is not something that requires time out from being engaged in productive activity. Learning is the heart of productive activity. This emphasis on knowledge implies more than just the collection of information or data. Indeed an organization may process data as its main business, but not necessarily be an entity that may be said to deal in knowledge. Knowledge in the learning organization context implies a use of information; it is the connecting of the various bits and pieces of information to show their relationships and then being able to apply the product of these connections that constitutes knowledge.

Why the Need for the Learning Organization?

Technological changes and the rapid growth and pervasiveness of modern technology, especially communication technology as represented in the rise of the Internet and World Wide Web as essential elements in business organizations, have made rapid responses and quick adaptations to change critical in today=s markets. It is increasingly becoming necessary for most organizations to have not only a Web presence, but a dynamic and changing presence, in order to meet the expectations of its customers or patrons. For the balance of the 1990s and for the conceivable future, individual, collective and organizational learning will be critical to continued survival and viability in the marketplace. The concept of the learning organization is rooted in adapting to change, learning and transitioning in order to avoid past mistakes, and in retaining critical information in the collective memory of the organization. Such learning must extend to all levels of the organization, and not just reside in the hands of the few or of only upper levels of management.

On the importance of learning to an organization, Peter Drucker (1993) states: [I]ncreased productivity needs continuous learning. It is not enough to redesign the job and then to train the worker in the new way of doing it B which is what [Frederic Winslow] Taylor did and taught. That=s when learning begins, and it never ends. Indeed, as the Japanese can teach us B it came out of their ancient tradition of Zen learning B the greatest benefit of training is not in learning the new.. It is to do better what we already do well. (pp. 107-108) Rochelle Turoff stresses the importance of knowledge to the modern organization: Knowledge has become the business of every business. A Knowledge work@ is no longer the province of an elite few, but the requirement of many. Knowledge is the esteemed core competency, the competitive advantage for the present and the future. Today knowledge is power, and organizations will succeed or fail based on their ability to learn and

adapt. (p. 31) According to Michele Darling, many management theorists are viewing Aintellectual capital@ as a form of an Aeconomic operating system@ which may be an organization=s most valuable asset. Management experts have long confined themselves to the management of physical and financial assets of an organization. But, as we become much more of an information economy, competitive advantage is much more likely to rest with intellectual capital rather than with the traditional physical strictly financial assets. Darling states that: The primary challenge in managing knowledge is recognizing that knowledge is an asset that is just as intangible for the corporation as social capital is for the nation state. So how do you organize something you can=t see? Can you turn it into an important strategic and competitive tool? (p. 62) In the knowledge organization, knowledge or intellectual assets must be accumulated, stored, organized for retrieval, and applied by all members of the organization. A real challenge be will to simply organize the collective knowledge of organizational members as much of organizational knowledge will currently reside only in the minds of its members. Real power will be, of course, not in the collection but in the sharing of information among members of the organization. Traditionally, it has been far too difficult to move information across organizational borders. In the past, in the library and information science field, we have seen this barrier in respect to the sharing of information between public and technical services departments in libraries. It was only with the widespread use of integrated automation systems that we have begun to see the collapse of the Abaize door@ barrier between the public and technical sides of the house. Other organizations are also feeling the same pressure, discerning for their continued survival, it will be required that barriers to the free flow of information through the organization in question be broken down, an event, that will usually be accompanied by a significant concomitant leveling of bureaucratic layers within the organization.

Key Characteristics of a Learning Organization

Those engaged in attempting to build learning organizations are involved in the risky business of creating a new organizational culture. To create an entirely new organizational culture requires effort and commitment on the part of everyone involved, as well as a good imagination in the mind of the persons charged with implementation. The organization's members need to know thoroughly their organization as it currently exists, as well as having a vision of what its members desire for it to become in the future. Simply imitating another organization's culture is unlikely to succeed in the long run because each organization is different, with different traditions, employing different people with different abilities and skills, and having different prevailing attitudes. However, with all that said, an organization that wishes to become a learning

organization would exhibit or strive to implement the following essential elements: Facilitation of effective communication throughout the organization in order to diffuse needed information quickly and effectively, coupled with a willingness on the part of the organization=s members both to accept and put use that information to use. Retention of organizational memory, an essential element in that access to information must be assured whenever it is needed and at whatever level of the organization it is needed. Establishment of information systems/software that allows new information to be related to other information and to existing knowledge in order to create new knowledge and know-how. Implementation and installation of information systems that facilitate managerial decision-making processes. In other words, a learning organization requires the creation of a knowledge infrastructure that can serve as both a repository of knowledge and a facilitator for the creation of knowledge in a form that is in a form that is usable and suited to individual needs and allows the distribution of that knowledge to members of the organization when it is needed and when they are ready to accept and put that information to work.

Where do Library and Information Science Professionals Fit into a Learning Organization?

Knowledge management on many fronts is essential in the day-to-day activities of an rganization striving to become a learning organization. It is perhaps axiomatic that a learning organization in only effective to the extent that the information it learns from is indeed accurate. Even more to the point, that information must be, in addition to accurate, timely and available to the right time to those who require the information and presented to them in a format that will facilitate their use of the information. A learning organization will put its information and information systems to the test of: how does it aid decision making; and how does it get filtered to the people who need it? Rory L. Chase (1998) states that: Most of the formal knowledge communities have their own databases -- or Asilos@ -- of expert knowledge. Many of the informal knowledge communities also have created databases, mainly in the form of discussion bulletin boards and newsgroups. A key goal of any knowledge-based organization is to encourage the active participation of these formal and informal knowledge communities -- through the integration of experts into knowledge teams and linking the knowledge databases into the organizational knowledge warehouse. (p. 19) These are all areas in which information specialists are educated to manage. Obviously, a well-run and well-organized information system is critical to a learning organization. Information specialists trained in traditional areas of bibliographic control and information services plus additional education in such areas as database management, the management and organization of intranets can help to ensure that employees of a learning

organization have access to required information in a form that is useful for decision-making processes. Even more, the education and background of information specialists should make them excellent candidates for proactively bringing information to the attention of the Aright@ individuals, not just sitting back and waiting for information queries to come to them. Experience with selective dissemination of information from outside sources can be adapted to organizational information as well as external information. This new digital information environment may tempt some to try to deny the continued need for an information specialist as a part of the organization. They may see information as only a Aclick away;@ however, we all know the difficulty of locating information on the Web without some kind of in-house organization coupled with searching expertise. Managers and other employees of a learning organization are subject-based experts, not knowledge experts. They will still need the help of Aguide@ or information analyst or information collector so that they can spend their time doing what they do best. For this to be the case, they will need the help of an information specialist. Chase states that AThe challenge facing librarians and information professionals is how to package knowledge to make it usable by individual knowledge workers and communities of practice.@ (p. 20) However, he goes on to assert that librarians tend to overlook the need to custom package information, rather than assuming that knowledge is objective and neutral and thus can be understood by all, they need to concentrate more on delivering information to individuals in a way that matches the approach of that particular individuals to the use of knowledge. Chase states that knowledge if Aidiosyncratic@ to individuals in two specific ways:

1. Personality plays a critical role in the way people acquire, understand, value, and use knowledge.

2. The creation of knowledge is affected by the world view of the individual. (p. 20)

To be a valued member of the team in tomorrow=s learning organization, an information specialist must proactively work with organization members to know what they need, when they need it, and in what form they need information whether it be information from external sources or from in-house databases or other organizational compilations of knowledge. They must be creators of a Avirtual@ organizational library. Needed information may no longer come from printed sources, but from computer databases, in-house reports, the Web and other Internet resources. There will probably not be the same type of physical library presence now enjoyed by many organizations, but effective organizations will always need information to create new knowledge or know-how.

Information specialists must prepare themselves both by education and mental outlook to work in this new knowledge-based environment.

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Open Source Software: Dpsace and Eprints

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ABSTRACT

Open source software would not be possible without internet, with its capacity for instantaneous communication among an unlimited number of dispersed people. It is a new mode of communication which allows the creation of new forms of organization. This paper discusses about the Dspace and Eprints library softwares which are assisting the libraries in creating their institutional repositories. With the help of institutional repositories scholarly output of any organization can be easily accessed free of cost.

Introduction

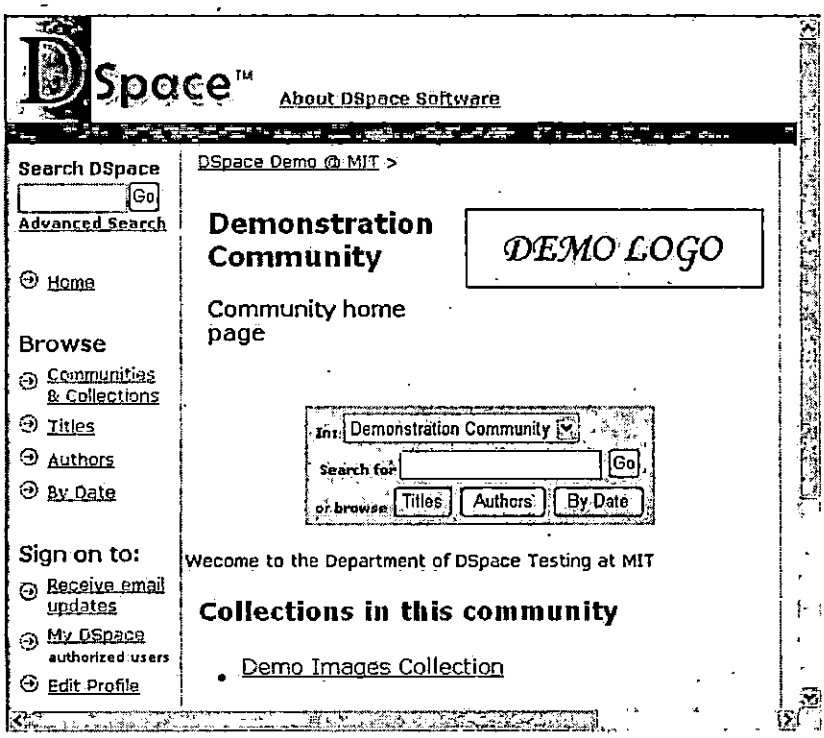
Open Source Software gives users the freedom to run the program for any purpose, to study and modify the program, and to redistribute copies of either the original or modified program. OSS is more secure and less vulnerable to many viruses now circulating on the Internet. Its important feature is that, although there may be some distribution and setup costs, but it is essentially free. Open Source Initiative (http://www.opensource.org) claims, "This rapid evolutionary process produces better software than the traditional closed model, in which only a very few programmers can see the source and everybody else must blindly use an opaque block of bits."

OSS helps in creating the repositories for digitizing the intellectual outputs of an organization. Today OSS has changed the scenarios of the organizations in enhancing their visibility and prestige. Different Open source softwares are available for archiving the scholarly literature. DSPACE and EPRINTS are two Open source softwares which are gaining popularity in libraries of all over the world.

Dsapce

Dspace is one of the Open source software which are widely spreading its wings all over the world and supporting the scientific community in the optimum use of their research outputs. It is jointly developed by MIT(Massachusetts Institute of Technology) Libraries and Hewlett - Packard Labs. It has given a platform to scientists to disseminate their scholarly literature, in order to encourage the research work. The web address of this software is http://www.dspace.org. It is released under BSD(Berkeley Software Distribution) license.

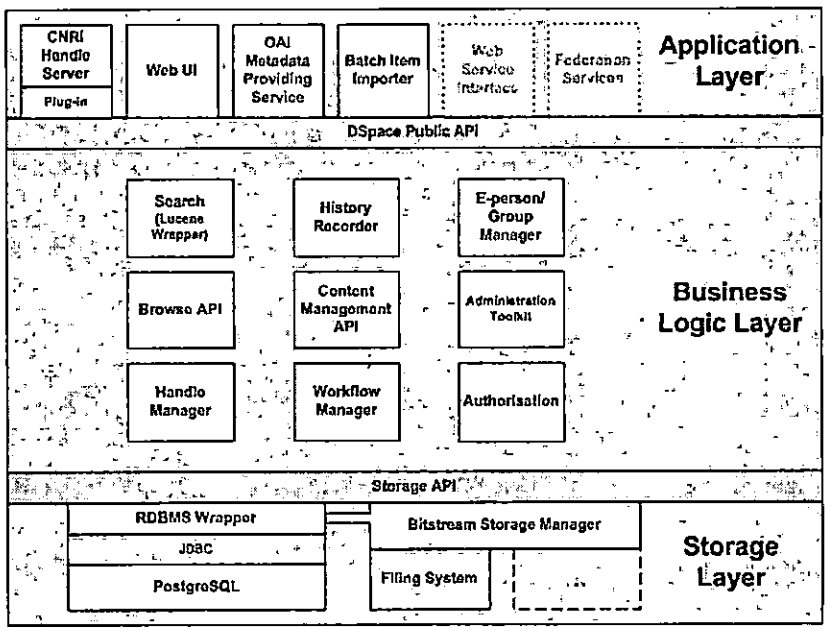
Dspace is a digital tool which captures, stores, indexes, preserves and distributes an organizations scholarly output. It provides a way to manage an organizations research materials and publications in a repository to give them greater visibility and accessibility over time. Dspace supports Dublin core metadata element set and Open Archives Initiatives Protocol for Metadata Harvesting (OAI-PMH) as data provider. It uses the CNRI(Corporation of National Research Initiative) Handle system for creating identifiers.



Dspace demo

System Architecture

The Dspace architecture is a three-layer architecture, which consists of storage, business and application layers, each with a documented API(Application programming Interface) to follow for future customization and enhancement: The storage layer is implemented using the file system, as managed by PostgreSQL database tables. The business layer is where the Dspace-specific functionality resides, including the workflow, content management, administration, and search and browse modules. Finally, the application layer covers the interfaces to the system: the web UI and batch loader, in particular, but also the OAI support and Handle server for resolving persistent identifiers to Dspace items.



Dspace Technical Architecture

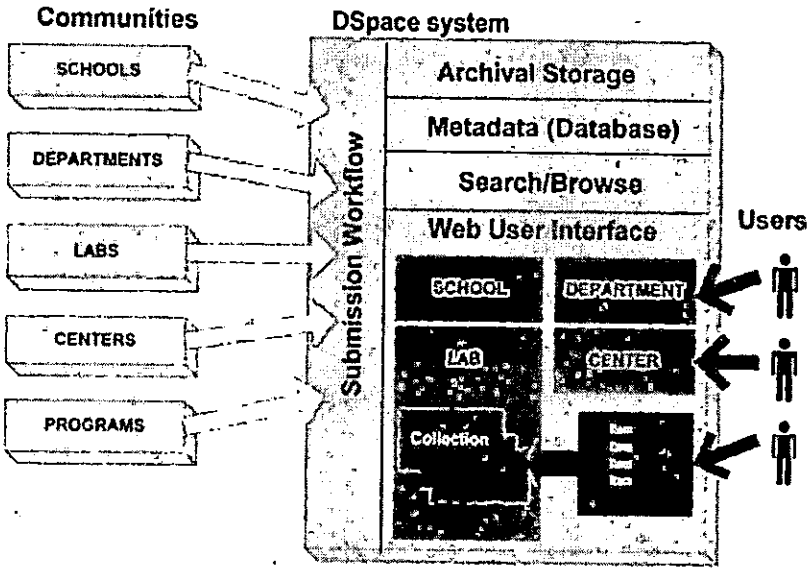
Softwares

There are some softwares which supports in the installation and running of the Dspace software. They are as follows:-

- UNIX-like OS (Linux, HP/UX etc)
- Java 1.4
- Apache Ant 1.5 or (java make-like tool)
- PostgreSQL 7.3 or, an open source relational database
- Jakarta tomcat4.x/5.x or equivalent

Dspace Information Model

Dspace is designed to make participation by depositors easy. The system's information model is built considering the information needs of an organization. In the case of MIT "communities" are defined to be the schools, departments, labs, and centers of the institute. Each community can adapt the system to meet its particular needs and manage the submission process itself.



Dspace Information Model

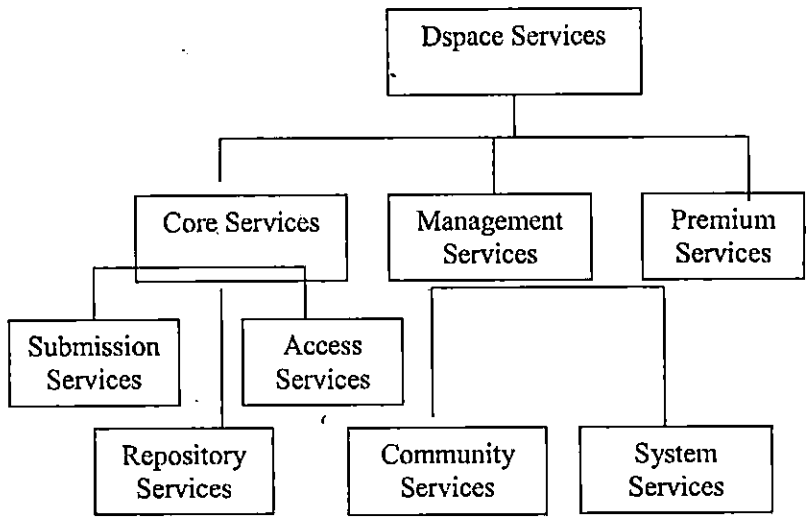
SERVICES OF DSPACE

Dspace basic service is comprised of Core Services and Management Services. Additional services may be offered through the Dspace Premium Services on fee-for-service basis.

CORE SERVICES: - It offers a fully functional system where Dspace community members can submit, preserves and access items in Dspace.

MANAGEMENT SERVICES: - It includes providing ongoing support for Dspace communities, responding to customer enquiries and supplying system monitoring back-up and recovery.

PREMIUM SERVICES: - It is an additional service which may be offered on a fee-for-service basis.



Services of Dspace

CORE SERVICES

Submission Services

Dspace offers contributors a flexible, easy-to-use submission process. A contributor simply completes a brief submission form and grants permission to distribute and preserve the work.

An authorized contributor to Dspace can:

- Register with Dspace and edit his/her user profile
- Post a submission to a specified collection
- Enter metadata for a submission, using standard forms with community-specific default values
- Include additional metadata with a submission
- Bundle multiple files of various formats in a submission
- Allow the system to identify formats of submitted files, with user override
- Grant a non-exclusive license to the host institution to distribute a submission in accordance with the specified distribution policy and translate it for the purposes of preservation
- Receive updates on the progress of an item through the submission workflow process
- View past and pending submissions in personalized My Dspace page.

Core Repository Services

DSpace provides storage and preservation management services to ensure the longevity of deposited materials. Users should be assured that content submitted in supported formats will be accessible even when the original application in which it was created is obsolete and the means to access it are interoperable.

For each submission, DSpace:

- Provides persistent storage, including appropriate back-up and recovery procedures
- Assigns a unique persistent identifier that will not change and is appropriate to cite in other works
- Supports a range of service levels for preservation and notifies users of DSpace's preservation constraints
- Stores provenance information
- Maintains an auditable history and record of changes to the archive.

Access Services

DSpace's Access Services help users browse and search the repository to discover items of interest, request one or more items from the system, and take delivery of the requested items.

Those interested in accessing the contents of DSpace can:

- Browse DSpace contents by title, author, or issue date
- Search for items anywhere in DSpace, or within a particular Community or Collection
- Search for matches within author, title, or key words and view results
- View an Item Overview, including: DSpace core metadata, List of Collections that contain this item, and Links to each of the files (text, image, etc.) that comprise the item
- View the contents of an item on-line
- Download an individual item and view it within a web browser or save the file to a specified location.

Management Services

Community Management services

Dspace's Community Management services are a set of consultative and applied services designed to meet the needs of individual communities. A guidance will be provided in developing a community or collections workflow process, metadata requirements, and distribution policies as well as launching a customized Dspace Community homepage.

The different aspects of the community set- up process are as follows:-

- Planning and scheduling new Community and Collection set-ups

- Leading the initial community meeting to discuss and explain set-up requirements
- Implementing custom workflow for the submission process including metadata defaults
- Specifying a Collections distribution policy and license requirements
- Customizing Dspace community and collection home pages
- Training community users and coordinators
- Assisting with ongoing collection set-ups
- Coordination bulk loads of historic content and metadata.

System Management Services

System Management services are the back -office support for Dspace, working to ensure optimal system performance and high availability. A comprehensive set of technical services for Dspace system operations, including:-

- Performing system, monitoring and debugging
- Performing system administration
- Monitoring and upgrading Dspace utility programmes and middleware
- Developing approved system enhancements
- Performing bulk loading of historic content and metadata
- Maintaining a registry of known content and metadata formats for preservation purposes.

Premium Services

The basic service level includes all necessary functionality to build a Dspace community. For communities requiring additional services or with extraordinary storage demands, a set of premium services has been introduced to meet the exceptional resource requirements of Dspace communities.

Examples of Premium Dspace Services are as follows:-

- Increased disk space
- File scanning from printed documents
- File conversion
- Metadata consulting
- Metadata Creation Services

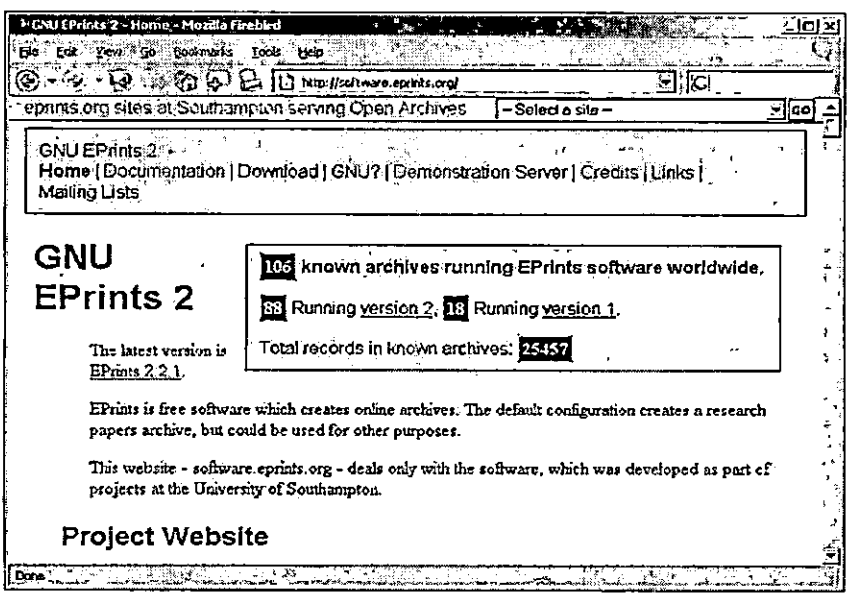
Gnu Eprints Software

GNU EPrints (http://www.eprints.org/software/download/) is open source software developed by the Electronics and Computer Science at the University of Southampton. It is written in PERL (Practical Extraction Report Language) language and requires installation of an apache web server and a number of Perl modules. It uses a MySQL database to store the metadata. The actual content files, e-prints are

stored in the UNIX file system. The configuration files are a combination of XML (Xtensible Markup Language) and PERL. EPrints is freely distributable and, in keeping with the terms of the GPL, the source code is open and freely modifiable by programmers on the condition that modifications are also free and open. The URL of this software is http://software.eprints.org. It is licensed under GNU General Public License.

EPrints facilitates authors self archiving their work. It creates an on-line archive of scholarly material consisting of metadata and files, which may be contributed via the web. It is designed for creating and managing open access institutional repositories of research papers and publications. It is widely implemented and is now used to store and manage different types of contents and purposes. It supports OAI-PMH to interact with multiple institutional repositories/

It also makes the data about records in the archives available for harvesting by the OAI-PMH interface. Eprints software is generally used to build institutional or discipline repositories of scholarship, the outputs of research such as preprints, journal articles, technical reports, etc. Examples of well-known Eprint archives that exist for other disciplines include Cog Prints for Cognitive Science and ArXiv for Physics.



GNU Eprints software

Export Interfaces in EPrints:

The EPrints software includes a built-in PERL script to import/export metadata for e-prints stored in the repository. These scripts can be extended to extract content and metadata from the repository.

1. export_xml script

The export_xml script in EPrints enables metadata to be exported for each and every e-print as a single XML document.

The syntax is:
export_xml <archive_id> <dataset> >somefile.xml
e.g. Data/services/eprints2/bin>./export_xml ahds archive >Test.xml

Where archive_id is the ID configured for the archive and dataset type is archive. It exports all the metadata related to all the e-prints into a file called Test.xml.

This script may be modified to extract metadata information for each individual e-print into a separate record.

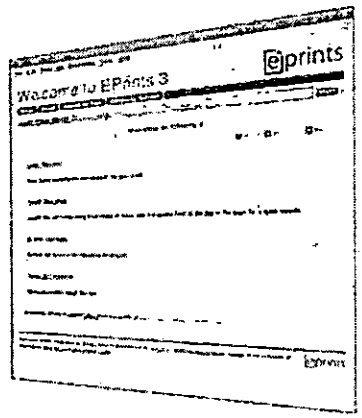
2. ArchiveOAIConfig.pm module

This PERL module in the EPrints software configures how the archive exports its data via the OAI protocol. It uses the Dublin Core element set. Few customizations are needed in this file to change the way that an e-print is mapped into Dublin Core.

The EPrints developer has suggested that this module could be customized to retrieve metadata in the METS(Metadata Encoding and Transmission Standard) format. However more investigation is needed to analyze if METS can be exported via OAI-PMH.

Cost

EPrints is distributed freely under the GNU Public License. Southampton University owns the entire copyright and at a later date may release the software under a different license in addition to the GPL. All software on which EPrints 2 depends is also available at no cost. EPrints is part of the GNU project.It conforms to most of the GNU guidelines for free software and GNU standard for software, such as installation and command line options.



Eprints software

Hardware cost

For a production system it is recommended:

- 1 GHz or more Pc running GNU/Linuz , or equivalent UNIX server
- 512 Mb or more of RAM
- 20Gb or more of disk space with possibility of adding more.

Structure of GNU Eprints

An eprint is a single record in the system. An eprint consists of:

- System Metadata fields such as eprint-id depositing- user-id. These are required by the software.
- Archive Metadata fields such as title, author and year. These contain the information useful to people viewing and searching the archive. These may be customized when the archive is created.
- One or more documents. These may be configured to be zero or more if the administrator wishes.

Benefits of Dspace and Eprint software

- Getting the research results out, to a world wide audience
- Preserving the intellectual outputs for a longer period
- Increases the citation rate of paper
- Enhances the visibility and prestige of an organization
- Exposure to the authors world wide
- Easy to access the scholarly literature
- Reducing the time gap between research result and communication to the research community.

Table 1

Organization-Wise distribution of Software Packages in India

INSTITUTES	DSPACE	EPRINTS	URLs
Delhi College of Engineering, Delhi	Y	-	http://202.141.12.109/dspace/
INFLIBNET,Ahemadabad	Y	-	http://dspace.inflibnet.ac.in/
Guru Gobind Singh Inraprastha University, Delhi	Y	-	http://dpsace.ipu.ernet.in/
ICFAI Business School, Ahmedabad	Y	-	http://202.131.96.59:8080/dspace/
University of Hyderabad, Hyderabad	Y	-	http://202.41.85.207:8080/dspace/
Indian Institute of Astrophysics, Bangalore	Y	-	http://prints.iiap.res.in/
Indian Institute of Management, Kozhikode	Y	-	http://dspace.iimk.ac.in/
Indian Institute of Technology, Delhi	Y	-	http://eprint.iitd.ac.in/dspace/
Indian Institute of Science, Bangalore		Y	http://eprints.iisc.ernet.in/
Indian Statistical Institute, Bangalore	Y	-	http://library.isibang.ac.in
Librarians Digital Library, Bangalore	Y	-	https://drtc.isibang.ac.in/
National Aeronautical Laboratory, Bangalore	-	Y	http://nal-ir.nal.res.in/
National Centre for Catalysis Research	-	Y	http://www.eprints.iitm.ac.in/
National Chemical Laboratory, Pune	Y	-	http://dspace.ncl.res.in/dspace/index.jsp
National Institute of Oceanography, Goa	Y	-	http://drs.nio.org/drs/index.jsp
National Institute of Technology, Rourkela	Y	-	http://dspace.nitrkl.ac.in/dspace/
National Information Centre,Delhi	-	Y	http://openmed.nic.in/
Raman Research Institute, Bangalore	Y	-	http://dspace.rri.res.in/
University of Delhi, Delhi		Y	http://eprints.du.ac.in/

Table 1 explains the number of installations of Dspace and Eprints open source software packages in different institutes of India. The above Table shows that Dspace is the most widely used software package for digitizing the library in India. It is leading with 14 installations whereas Eprints has less number of installations.

Conclusion

In this era, Open source softwares are playing a vital role in the digitization of a library. There are many OSS available for the digitization of a library like Greenstone Digital Library Software, Fedora, Koha, CERN Document server software (CDSWare) etc. But Open Source Softwares like Dspace and Eprints have created a mark in all over the world. They are helping the organizations in preserving their real treasure for a longer period.

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http://www.dspace.org

http://software.eprints.org.

http://roar.eprints.org

http://www.infotoday.com/it/oct01/poynder.htm

http://www.dlib.org/dlib/july04/coleman/07coleman.html

http://www.sherpadp.org.uk/documents/wp53-eprintsreview.rtf

http://www.eprints.org/software/v3/

http://eprints.ecs.soton.ac.uk/11006/

http://libraries.mit.edu/dspace-mit/index.html

http://www.ercim.org/publication/Ercim_News/enw64/jeffery.html

http://libraries.mit.edu/dspace-mit/img/dspace-architecture.gif

http://images.google.co.in/images?hl=en&q=%20dspace%3A%20an%20image&oe=UTF-8&um=1&ie=UTF-8&sa=N&tab=wi

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Open Sources

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Purpose: The open access, open source software are one of the most widely talked about and open standards concepts have been garnering increased attention in the field of librarianship and elsewhere including information technology. The messiahs of License based close system have been forced to reexamine their approach owing to the immense benefits of open systems.. The concepts related to open source and their benefits, importance to libraries are examined in this paper. The benefits of open sources include lower costs, greater accessibility, and better prospects for long-term preservation of scholarly works.

Design/methodology/Approach: Open access is seen by some as a possible solution to the increasing price of serials and as a way for governmental funding agencies to receive a better return on investment. Open source software can benefit libraries by lowering initial and ongoing costs, eliminating vendor lock-in, and allowing for greater flexibility. Open standards allow for interoperability to exist between diverse library resources and eases data migration between systems.. All software applications are built from source code. The source code is the numerous lines of instructions that programmers write for computers to interpret. These instructions tell a computer what to do and how to do it. They may be written in any one of the various programming languages used today. One of the fundamental differences between open source and proprietary software is, the source code of open source software must be made freely available for everyone to download the source code, view, and alter it as they like. With proprietary software, one generally cannot view or edit the source code. The role of the library within, the services it offers to, the community is rapidly changing. With online resources and new technologies, libraries interested in enhancing user services and providing unmediated, independent access to library services and collections, need to extensively use IT, however it also means hefty investment in computers and software to enable it. To lower this implementation cost so as to reach out to masses of scholarly community, open source provides for absolutely free software that too customized according to each library's indigenous requirements.

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Problems in Acquisition of Foreign Journals: An Overview of DRDE Library, Gwalior

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ABSTRACT

This paper concerns about the importance of journals in rapid and fast growing fields of science & technology. Journals have got an immense value in research. Research libraries like DRDE library are supposed to provide right information to the scientists in least time. Since, journals are primary source of information they play an important role to provide the information and fulfill the need of scientists. In comparison to Indian journals, journals from foreign origin have got wide coverage, high citation index and good impact value. Since, foreign journals have got good reputation, reliability, good quality, regularity in their publication with latest and update knowledge of the subject they are more popular and of immense value in scientific community. DRDE being multi- disciplinary in nature, the library has to cater the information requirement of all the disciplines.

Introduction

DRDE library held near about 8000 high level scientific and technical books and about 15,000 bound volumes of journals. The current subscription list of journals is 120 out of which 86 are foreign journals and 34 journals are from Indian origin. But, it reveals the problems in

acquisition of foreign journals and their subscription policy to the DRDE library. Here some guidelines to get rid off them have been discussed. This study is based on practical difficulties faced in the DRDE library.

In case of foreign journals their utility and importance get reduces due to late delivery, this causes cessation in the library functions and fails to satisfy the prime motto of library science. The scientists also face hindrance/ obstacles in their work due to not getting timely or updated information. Journals being prime and immediate source of information are very useful for research and development as well as to avoid duplication or repetition of research work and help in timely patenting their products.

Objectives

The object of this study is to bring in to the notice of all information scientists the problems being faced in acquiring the journals and remedy adopted in DRDE to overcome the problems. We also seek the advice and more fruitful suggestions to overcome the situation.

Journal subscription is a challenging job in DRDE library as well as in other Indian research libraries. The foremost problem is to decide about the subscription whether from direct publisher or agent. Some specific problems related to journal subscription are discussed here.

Journal Subscription Policy

Different libraries follow different methods for journal acquisition. DRDE library procure almost journals through direct publishers. Journals to be subscribed in DRDE library are recommended by the individual scientist through his/her head of the division. The Incharge library, after receiving the recommendation, ask for the specimen copy of the required journal from publisher for knowing coverage of subject, quality of article etc. and try to get other bibliographical information such as subscription price, frequency. After obtaining the specimen copy meeting of library committee is arranged. Committee members after perusal and evaluate all the factors such as subject coverage, utility to DRDE, impact factor, subscription etc. then only decide for its subscription. If the library committee recommends the journal then it is forwarded to Director for seeking approval. Finally, if director approves then proceed for further action regarding subscription.

Publisher vs Agent

The first and foremost problem of journal subscription faced by libraries is to decide whether to have agent (Indian and Foreign) or to go directly with publishers. There are advantages in both ways, but some are more

visible and others are not. Table 2 shows the comparative study of publisher and agent.

Table 2

S. No.	Direct from Publishers	Through Agent
1.	More correspondence and paper work with individual publisher	Less correspondence only with one vendor
2.	Net price as per publishers catalogue	Offers discount
3.	Advance payment required in foreign currency which involve lots of formalities	Payment in rupees after getting payment proof
4.	No Bank guarantee or any assurance is provided	Bank guarantee is provided and an agreement can also made on favorable terms & conditions
5.	Renowned Publishers have fair deal and no chances of any fraud	May cheat, by delay in transmitting payment. Bogus payment can be shown
6.	Provide subscriber no. enable to take other benefits like free online facility etc.	Normally subscriber number not provided
7.	Quick supply mostly by airmail/ Airfreight	May delay in want of maximum journals supply in a parcel/ courier
8.	Supplementary invoice (if any) receives in time	Sometimes too delayed
9.	No escalating in FE rates	Exchange rates may vary at the time of payment

Price Rising Trends:

Presently due to vital role of periodicals in research, most of the libraries are spending about more than 80% of there budget in subscribing of journals. Here the Table 1 reveals the price rising of 10 foreign journals during 1997-2006. For the study journals using the year 1997 considered as the base year, price indices have been computed for the remaining period. Keeping 100 as the price index of all journals in 1997 in these journals have been calculated as follows-

$$\frac{\text{Current Price}}{\text{Price in 1997}} \times 100$$

The Price Index Number (PIN) for all the ten journals has shown an upward trend and has almost doubled in the year 2006. The average growth per year in price of all ten journals has been shown in graph 1. It also indicates that **average price has increased 92% from 1997 to 2006.**

Here main problem comes to coupe up with the price hike tendency especially in foreign publications. It becomes problematic when there is no adequate rise in budget in proportion to the new subscribed journals.

Table 1

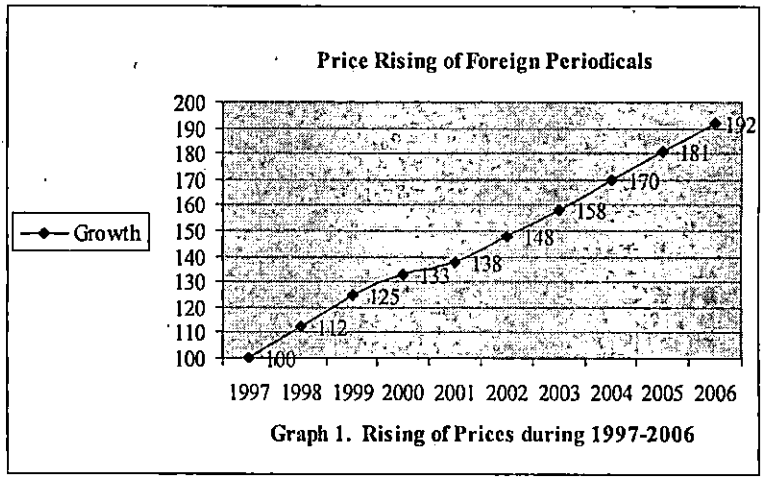
(All prices are in $)

(1997 base year= 100, figure in brackets are price index numbers)

S.No	Title	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1.	TAP[1] (PIN)	1575 (100)	1726 (110)	2255 (143)	2525 (160)	2700 (171)	2876 (183)	2770 (176)	2950 (187)	3105 (197)	3268 (207)
2.	TL[2] (PIN)	6845 (100)	7936 (116)	8602 (126)	8859 (129)	9036 (132)	9624 (141)	10345 (151)	11017 (161)	11595 (169)	12204 (178)
3.	JMC[3] (PIN)	1107 (100)	1191 (108)	1326 (119)	1375 (124)	1457 (132)	1560 (141)	1699 (153)	1856 (168)	1997 (180)	2159 (195)
4.	JOC[4] (PIN)	1287 (100)	1428 (110)	1578 (123)	1626 (126)	1724 (134)	1846 (143)	2011 (156)	2204 (171)	2368 (184)	2560 (199)
5.	JACS[5] (PIN)	1936 (100)	2116 (109)	2323 (120)	2396 (124)	2541 (131)	2720 (140)	2963 (153)	3244 (168)	3494 (180)	3773 (195)
6.	CMR[6] (PIN)	170 (100)	170 (100)	170 (100)	316 (186)	316 (186)	309 (182)	346 (204)	346 (204)	417 (245)	423 (249)
7.	JCMB[7] (PIN)	371 (100)	373 (101)	373 (101)	448 (121)	448 (121)	466 (126)	524 (141)	526 (142)	639 (172)	679 (183)
8.	MMBR[8] (PIN)	176 (100)	176 (100)	176 (100)	345 (196)	345 (196)	335 (190)	375 (213)	375 (213)	394 (224)	423 (240)
9.	JPS[9] (PIN)	447 (100)	487 (109)	537 (120)	653 (146)	707 (158)	852 (191)	952 (213)	1052 (235)	1107 (248)	1182 (264)
10.	MM[10] (PIN)	50 (100)	60 (120)	60 (120)	60 (120)	65 (130)	70 (140)	80 (160)	135 (270)	150 (300)	165 (330)
Average (RI)		1396 (100)	1566 (112)	1740 (125)	1860 (133)	1933 (138)	2065 (148)	2206 (158)	2370 (170)	2526 (181)	2683 (192)

1 Toxicology & Applied Pharmacology
2 Tetrahedron Letters
3 Journal of Medicinal Chemistry
4 Journal of Organic Chemistry
5 Journal of American Chemical Society
6 Clinical Microbiology Review
7 Journal of Clinical Microbiology Review
8 Microbiology & Molecular Biology Reviews
9 Journal of Pharmaceutical Science
10 Military Medicine

Graph 1



Graph 1. Rising of Prices during 1997-2006

Risk of Advance Payments:

Most of the journals invariably require advance payments. Whether it is with publishers or with agents advance payments made without proper security runs considerable risk. There is also a general complaint that some agents collect subscription amount much in advance and pass on to publishers after a gap of three to six months so that the money can be profitably utilized in their business. Besides many agents complaint about delayed processing of renewal orders and payment by libraries causing delay in supply or non supply of initial issues of the year. In others words, delayed payment is a problem which can also be caused at the end of libraries. Publishers usually require subscription payments six to eight weeks in advance of the commencement of subscription period or volume of the journal, so as to enable them to make better estimates of number of copies to be printed. There may delay in payment occurs due to lots of formalities involvement in getting foreign exchange release. Then some of the publishers either discontinue the supply or supply starts from the date of receiving the payment at their end. This gap of subscription due to forwarding of issues after receiving the subscription results incomplete holdings.

Problem of Unwanted Duplicate Issue of Journals:

Special libraries are always suffering from the problem of unwanted duplicate issues of the journals. Most of the publishers claim to be informed regarding the non receipt issues of the journals with in 3-4 months, often due to over cautious actions of sending reminders even when the issues are in transit. The result is huge accumulation of

unwanted duplicate issues of journals. This trend produces the problem of proper maintenance and disposal costs heavily to the libraries in terms of time, efforts and space.

Reminders for Missing Issue:

Missing of subscribed journals is another main problem. Reminder for the missing journal is part of journal acquisition. There is hardly any library which can claim to have received all issues of journals subscribed in a year. There are many reasons behind the non receipt of journals like loss in transit, delayed publication, delay in post, wrong delivery etc. Mostly publishers claim for delivery of journals within 3-4 months. If in case library do not get journals in this period. Reminder after the scheduled period usually it gets out of stock. Most of the publishers provide the claiming time for the missing issue. If not claimed in due time then they replies "not claimed within time" or "issue out of print".

Refund/ Recovery

During renewal of journals, usually once in a year, another vicious circle will be created where supply for previous year is not satisfactory. To avoid increasing the risk or for any other reason if journals librarian prefers to postpone payment towards renewal of journals, he will risk the danger of non supply of initial issues of the journal for the next year/ volume. Further, when renewal payments are sent to back issues of the journal for which library has paid may not be available. So the cycle restarts with non supply and request for extension of subscription period to make good the non supply or refund towards non supplies. This also leads to the problem of not having common expiry date for all journals of at least a given publisher. In any case libraries prefer an uninterrupted service than mere extension of subscription or receiving refunds.

Recovery of subscription amount for the non-supply of subscribed journal is a major problem in journal subscription.

Bank Guarantee

Publishers do not assure for bank guaranty. Bank guaranty is the prime audit demand which is very difficult to convince the audit authorities.

Cease Publication:

Some publishers discontinue the publication of journals without giving any notice. This is highly serious matter from audit point of view because after remittance of subscription material not received in full quantity.

A journal case study of DRDE library:

Many cases have been faced by DRDE library. One of them is discussed here.

Annual subscription of the "Abstracts of Entomology" (vol. no. 36) for the year 2005 subscribed through direct publisher i.e. Thomson, U.K. all we know that it is the reputed publisher. Payment had been made to Thomson, U.K. at right time but we did not receive any issue in the whole year. In spite of several reminders placed timely to the publisher we did not get any reply. Our scientists were missing those issues badly and our audit authority was also insisting to settle the case. In this critical condition we approached to Thomson India agent i.e. Informatics (India) Ltd. Bangalore. By the appreciable efforts of Informatics, finally we got all issues after two years on dated 03-10-2007.

Guidelines for Smooth Functioning:

To solve the above problems in library, some guidelines are discussed here-

- The subscription should be made for 2-3 years, so that the publisher offers significant discounts.
- Libraries should prepare journals holdings list and circulate among the libraries, so that the other libraries will know about the availability of information sources and can make maximum use of resource sharing.
- Libraries also can circulate the list of their duplicate/ missing issue holdings to enable other libraries to update their holdings by mutual exchange.
- The publishers should enable the subscribers to have complete volumes by sending atleast the photocopies of the missing and out of stock issues of journals.
- For the incomplete volumes due to missing issues or loss in transit etc., attempts should be made to collect atleast the photocopies of the missing issues from the libraries where they are available.

Conclusion

Procurement of journals especially of foreign origin has got lots of problems and sometimes it's very difficult to satisfy audit authorities as well as to readers also. Procurement from publishers or through vendor has pros and cons. Every library on the basis of its purpose has to decide accordingly. Before adopting any route has to think over both sides of coin.

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Software Metrics: A General Overview

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Abstract

Purpose of this paper: This paper shows the basics of software metrics

Design/methodology/approach: The literature is scanned to trace the historical development and the case studies are also provided

Findings: The structure of the paper is as such that the common man understand and about the field which basically the area in which the computer scientist deal.

Practical implications (if applicable): Practically speaking the librarians can take the taste of the field and utilise in their work field.

What is original/value of paper? : Library and information professional's excellency in the field of software is highlighted. The area software metrics is described with impression to the beginners can understand. The various tenets with few definitions are described. How this subject is grown has also been analysed. The overall status of the paper is all basics about the software metrics.

Introduction

It has been estimated that, by 1990, fully one half of the American work force will rely on computers and software to do its daily work. As computer hard ware costs continue to decline, the demand for new applications software continues to increase at a rapid rate. The existing inventory of software continues to grow, and the effort required to maintain it continues to increase as well. At the same time, there is a significant shortage of qualified software professionals. Combining these factors, one might project that at some point in the not-too-distant future, every American worker will have to be involved in software development and maintenance. Meanwhile, the software development scene is often characterized by:

- schedule and cost estimates that are grossly inaccurate,

- software of poor quality, and
- a productivity rate that is increasing more slowly than the demand for software.

This situation has often been referred to as the "software crisis" [Arthur 1985].

The Need for Software Metrics

The software crisis must be addressed and, to the extent possible, resolved. To do so requires more accurate schedule and cost estimates, better quality products, and higher productivity. All these can be achieved through more effective software management, which, in turn, can be facilitated by the improved use of software metrics. Current software management is ineffective because software development is extremely complex, and we have few well-defined, reliable measures of either the process or the product to guide and evaluate development. Thus, accurate and effective estimating, planning, and control are nearly impossible to achieve (Rubin 1983). Improvement of the management process depends upon improved ability to identify, measure, and control essential parameters of the development process. This is the goal of software metrics—the identification and measurement of the essential parameters that affect software development.

Software metrics and models have been proposed and used for some time (Wolverton 1974, Perlis 1981). Metrics, however, have rarely been used in any regular, methodical fashion. Recent results indicate that the conscientious implementation and application of a software metrics program can help achieve better management results, both in the short run (for a given project) and in the long run (improving productivity on future projects) (Grady 1987). Most software metrics cannot meaningfully be discussed in isolation from such metrics programs. Better use of existing metrics and development of improved metrics appear to be important factors in the resolution of the software crisis.

Definition of Software Metrics

It is important to further define the term *software metrics* as used in this module. Essentially, *software metrics* deals with the measurement of the software product and the process by which it is developed. In this discussion, the software product should be viewed as an abstract object that evolves from an initial statement of need to a finished software system, including source and object code and the various forms of documentation produced during development. Ordinarily, these measurements of the software process and product are studied and developed for use in modeling the software development process. These metrics and models are then used to estimate/predict product costs and schedules and to measure productivity and product quality. Information

gained from the metrics and the model can then be used in the management and control of the development process, leading, one hopes, to improved results.

Good metrics should facilitate the development of models that are capable of predicting process or product parameters, not just describing them. Thus, ideal metrics should be:

- simple, precisely definable—so that it is clear how the metric can be evaluated;
- objective, to the greatest extent possible;
- easily obtainable (*i.e.*, at reasonable cost);
- valid—the metric should measure what it is intended to measure; and
- robust—relatively insensitive to (intuitively) insignificant changes in the process or product.

In addition, for maximum utility in analytic studies and statistical analyses, metrics should have data values that belong to appropriate measurement scales (Conte 1986 Basili 1984).

It has been observed that the fundamental qualities required of any technical system are (Ferrari 1986):

- functionality—correctness, reliability, etc.;
- performance—response time, throughput, speed, etc.; and
- economy—cost effectiveness.

So far as this author can discern, *software metrics*, as the term is most commonly used today, concerns itself almost exclusively with the first and last of the above characteristics, *i.e.*, functionality and economy. Performance is certainly important, but it is not generally included in discussions of software metrics, except regarding whether the product meets specific performance requirements for that product. The evaluation of performance is often treated extensively by those engaged in *performance evaluation* studies, but these are not generally included in what is referred to as *software metrics* (Ferrari 1986).

It is possible that, in the future, the scope of *software metrics* may be expanded to include performance evaluation, or that both activities may be considered part of a larger area that might be called *software measurement*. For now, however, this module will confine itself to software metrics as defined above.

Classification of Software Metrics

Software metrics may be broadly classified as either *product metrics* or *process metrics*. *Product metrics* are measures of the software product at

any stage of its development, from requirements to installed system. Product metrics may measure the complexity of the software design, the size of the final program (either source or object code), or the number of pages of documentation produced. *Process metrics*, on the other hand, are measures of the software development process, such as overall development time, type of methodology used, or the average level of experience of the programming staff.

In addition to the distinction between product and process metrics, software metrics can be classified in other ways. One may distinguish *objective* from *subjective* properties (metrics). Generally speaking, objective metrics should always result in identical values for a given metric, as measured by two or more qualified observers. For subjective metrics, even qualified observers may measure different values for a given metric, since their subjective judgment is involved in arriving at the measured value. For product metrics, the size of the product measured in lines of code (LOC) is an objective measure, for which any informed observer, working from the same definition of LOC, should obtain the same measured value for a given program. An example of a subjective product metric is the classification of the software as "organic," "semi-detached," or "embedded," as required in the COCOMO cost estimation model (Boehm 1981). Although most programs might be easy to classify, those on the borderline between categories might reasonably be classified in different ways by different knowledgeable observers. For process metrics, development time is an example of an objective measure, and level of programmer experience is likely to be a subjective measure.

Another way in which metrics can be categorized is as *primitive* metrics or *computed* metrics (Grady 1987). Primitive metrics are those that can be directly observed, such as the program size (in LOC), number of defects observed in unit testing, or total development time for the project. Computed metrics are those that cannot be directly observed but are computed in some manner from other metrics. Examples of computed metrics are those commonly used for productivity, such as LOC produced per person-month (LOC/person-month), or for product quality, such as the number of defects per thousand lines of code (defects/KLOC). Computed metrics are combinations of other metric values and thus are often more valuable in understanding or evaluating the software process than are simple metrics.

Although software metrics can be neatly categorized as primitive objective product metrics, primitive subjective product metrics, etc., this module does not strictly follow that organization. Rather, the discussion reflects areas where most of the published work has been concentrated;

no exhaustive coverage of all possible types of software metrics is attempted here. As is evident below, a great deal of work has been done in some areas, such as objective product metrics, and much less in other areas, such as subjective product metrics.

Measurement Scales for Software Metrics

Software metric data should be collected with a specific purpose in mind. Ordinarily, the purpose is for use in some process model, and this may involve using the data in other calculations or subjecting them to statistical analyses. Before data are collected and used, it is important to consider the type of information involved. Four basic types of measured data are recognized by statisticians—nominal, ordinal, interval, and ratio. (The following discussion of these types of data is adapted from (Conte 1986).

The following table describes the four basic types of data:

Type of Data	*Possible Operations*	*Description of Data*
Nominal	=, ✱	Categories
Ordinal	<, >	Rankings
Interval	+, -	Differences
Ratio	/	Absolute zero

Operations in this table for a given data type also apply to all data types appearing below it.

Examples of software metrics can be found for each type of data.

As an example of *nominal data*, one can measure the type of program being produced by placing it in to a category of some kind—database program, operating system, etc. For such data, we cannot perform arithmetic operations of any type or even rank the possible values in any "natural order." The only possible operation is to determine whether program **A** is of the same type as program **B**. Such data are said to have a *nominal* scale, and the particular example given can be an important parameter in a model of the software development process. The data might be considered either subjective or objective, depending upon whether the rules for classification allow equally qualified observers to arrive at different classifications for a given program.

Ordinal data, by contrast, allow us to rank the various data values, although differences or ratios between values are not meaningful. For example, programmer experience level may be measured as *low*, *medium*, or *high*. (In order for this to be an objective metric, one must

assume that the criteria for placement in the various categories are well defined, so that different observers always assign the same value to any given programmer.)

Data from an *interval* scale cannot only be ranked, but also can exhibit meaningful differences between values. McCabe's complexity measure (McCabe 1976) might be interpreted as having an interval scale. Differences appear to be meaningful; but there is no absolute zero, and ratios of values are not necessarily meaningful. For example, a program with complexity value of 6 is 4 units more complex than a program with complexity of 2, but it is probably not meaningful to say that the first program is three times as complex as the second.

Some data values are associated with a *ratio* scale, which possesses an absolute zero and allows meaningful ratios to be calculated. An example is program size, in lines of code (LOC). A program of 2,000 lines can reasonably be interpreted as being twice as large as a program of 1,000 lines, and programs can obviously have zero length according to this measure.

It is important to be aware of what measurement scale is associated with a given metric. Many proposed metrics have values from an interval, ordinal, or even nominal scale. If the metric values are to be used in mathematical equations designed to represent a model of the software process, metrics associated with a ratio scale may be preferred, since ratio scale data allow most mathematical operations to be meaningfully applied. However, it seems clear that the values of many parameters essential to the software development process cannot be associated with a ratio scale, given our present state of knowledge. This is seen, for example, in the categories of COCOMO.

Current State of Software Metrics

The current state of software metrics is not very satisfying. In the past, many metrics and a number of process models have been proposed (Mohanty 1981, Kafura 1985, Kemerer 1987, Rubin 1987). Unfortunately, most of the metrics defined have lacked one or both of two important characteristics:

- a sound conceptual, theoretical basis
- statistically significant experimental validation

Most metrics have been defined by an individual and then tested and used only in a very limited environment. In some cases, significant successes have been reported in the validation or application of these metrics. However, subsequent attempts to test or use the metrics in other environments have yielded very different results. These differences are

not surprising in view of the lack of clear definitions and testable hypotheses. Nevertheless, discrepancies and disagreements in reported results have left many observers with the sense that the field of software metrics is, at best, insufficiently mature to be of any practical use.

The metrics field has no clearly defined, commonly accepted set of essential software properties it attempts to measure; however, it does have a large number of metrics, only a few of which have enjoyed any widespread use or acceptance. Even in the case of widely studied metrics, such as LOC, Halstead's metrics, and McCabe's cyclomatic complexity, it is not universally agreed what they measure. In various reported studies, attempts have been made to correlate these metrics with a number of software properties, including size, complexity, reliability (error rates), and maintainability Curtis 1979a, Curtis 1979b, Kafura85, Li 1987, Potier 1982, Woodfield 1981). Thus, it is little wonder that software practitioners are wary of any claims on behalf of software metrics.

Many apparently important software metrics, such as type of product or level of programming expertise, must be considered subjective metrics at this time, although they may be defined more objectively in the future. These metrics are difficult to construct because of the potentially large number of factors involved and the problems associated with assessing or quantifying individual factors. As a result, little definitive work has been done to reduce the uncertainty associated with these metrics.

As for the proposed process models, few of these have a significant theoretical basis. Most are based upon a combination of intuition, expert judgment, and statistical analysis of empirical data. Overall, the work has failed to produce any single process model that can be applied with a reasonable degree of success to a variety of environments. Generally, significant recalibration is required for each new environment in order to produce useful results. Furthermore, the various models often use widely different sets of basic parameters. Thus, even a relatively small set of universally useful metrics has not yet emerged.

As a result of the above considerations, it is very difficult to interpret and compare quoted metric results, especially if they involve different environments, languages, applications, or development methodologies. Even with an apparently simple metric, such as LOC, differences in underlying definitions and counting techniques may make it impossible to compare quoted results (Jones 1986). If different programming languages are involved, metrics involving LOC values can, if not carefully interpreted, lead to incorrect conclusions and thereby conceal the real significance of the data. For example, the (computed)

productivity metric LOC per unit-time (LOC/month, for example) and cost per LOC ($/LOC) are often used. However, if they are not interpreted carefully, these metrics can suggest that assembly language programmers are more productive than high-level language programmers (higher LOC/month and lower $/LOC), even though the total programming cost is usually lower when using a high-level language. Similarly, defects per LOC and cost per defect values have often been used as quality or productivity indicators. As in the above case, when programming languages at different levels are involved, these metrics may obscure overall productivity and quality improvements by systematically yielding lower defect per LOC and cost per defect values for lower-level languages, even though total defects and costs are actually higher.

Despite these problems, it appears that the judicious, methodical application of software metrics and models in limited environments can aid significantly in improving software quality and productivity [Basili87, Grady87]. In many cases, relatively simple metrics such as LOC and McCabe's complexity metric, $v(G)$, have been found to be reasonably good predictors of other characteristics, such as defect counts, total effort, and maintainability (Grady 1987, Li 1987, Rombach 1987). Thus, although useful metrics and models cannot yet be pulled off the shelf and used indiscriminately, careful application of some of the metrics and models already available can yield useful results if tuned to a particular environment. These results will improve further as we gain additional experience with current models and achieve better understanding of the underlying metrics and their application to the software process.

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Use of E-journals in Higher Education through Consortium

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ABSTRACT

Libraries function as an essential integral component in higher education system. A Journal is an important resource for up-to-date information on all disciplines. Journals play a vital role in the distribution of primary information. Lot of journals from all fields is currently available electronically via web. Majority of university libraries and special libraries spend major part of their budget on the acquisition of journals. Due to the advent of information technology, a paradigm shifts from print journals to e-journals have taken place in past one decade. Access to e-journals have enormous benefits to the subscribers, therefore, the universities and research institutions are subscribing e-journals both directly from the publishers or forming the part of e-journals consortium. The present paper defines the term and access of e-journals, illustrates the advantages, disadvantages of e-journals and highlights the benefits of e-journals consortia.

Key Words: Electronic Journals, Higher Education, Library Consortia

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Copyright Protection in Digital Environment

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Copyright is an intellectual property right which gives a limited monopoly to the creators of original material including literary works, musical works, dramatic works, sculpture works and also audio-visual works such as pictures, sound recording etc. Ownership of copy righted material warrants the right for copying, adaptation, performance and broadcasting. The holder of copyright may be the author, creator, publisher or an authorized representative. The purpose of the copyright is two-fold. Besides, encouraging talented persons to produce creative works it also provide incentives for the dissemination of these works. The law of copyright initially dealt with prevention of illegal reproduction of books. Significantly, before the advent of printing press, the process of dissemination was not fast.Consequently; hand-copying was the sole means of reproduction which was uncontrollable. Copyright law faced its first challenge no sooner than with the invention of printing. This problem has continued to grow and now face challenge

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Digital Libraries and Copy Right Law: Some Issues and Suggestions

S Padmamma

ABSTARCT

The paper talks of digital library and copyright. Further how copyright is a problem in the context of digitisation has been discussed. The right of access to information and ideas is vital for any society. We know, freedom, prosperity and the development of society depend on education as well as on unrestricted access to knowledge, thought, culture and information. Libraries, at all levels, are instruments to assure and promote equal access to information and to disseminate knowledge. Libraries do not exist in a vacuum in any society; they are the storehouses of knowledge. The author also comes up with some suggestion. To convince the government, the private sector, international organisms and institutions. To create an Effective National System of Information (unlike the dead word of the current library law). To create automated union catalogues with free, free of charge, unhampered, democratic and socially equal universal access to documental information in full text of all types of publications. To establish unhampered, free of charge and fast inter library loan. Of the importance of the documental information and its technologies for the social, economic, and cultural development of the country. To legislate on the library cooperation among rich libraries (private institutions) and poor libraries (the majority of the public institutions). In concluding remarks the author says that development and diffusion of digital technology has an ambivalent impact on copyright protection. On the one hand, this technology allows the making of perfect and costless copies of copyrighted works, thus expanding the scope for unauthorized copies and it should be checked with proper law.

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Digital Libraries and Digital Right Management: Concepts and Applications

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ABSTRACT

A digital library is a collection of library material converted to machine-readable format for preservation or instant access. The user can retrieve the information sitting anywhere in the world. The paper will discuss the concept and benefits of the digital libraries. The article will also highlight the legal problems on the area of DRM and implications of DRM for privacy protection. This will also cover whether the use of the digital material should be open for everybody. Various problems and legal issue with regard to DRM shall also be discussed. It will analyze the concept of DRM Technology its need and importance and how the copyright owner are benefited with the emergence of this technology

Key words: Digital library, Digital Right Management

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Intellectual Property Rights (IPRs) in Digital Environment

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ABSTRACT

"Digitizing information has come as a boon to many including library and information professionals. Digitization supports distance learning, comparative study and training staff who need reference. Digital resources possess an advantage over the traditional resources with respect into access to information. The greatest benefit of digital resources is that the digital resources can be accessed from their desk tops. Intellectual Property Right (IPR) allows people to know their creativity and innovation in the same way they can own physical property. The owner of IP can control/hold and be rewarded for its use, and this encourages further innovation and creativity for the welfare of human being. The paper highlights the various aspects in IPR in digital environment especially on copy right and e-publishing management in digital media. It also highlights the copy right legislation passed in India in different period."

IPRs: Definition

Intellectual Properly Rights can be defined as the rights given to person over the creation of their minds. They usually give the creator an exclusive legal right over the use of his/her creation for a certain period of time and thus protect the owner against unauthorized copying or imitation.

IPR is the creation of human mind. A human beings potential efforts lead to intellectual out comes, which in turn have considerable value in economy. Rights associated with Intellectual Property which gives legal protection is referred to as Intellectual Property Rights.

Intellectual property rights are granted to reward creativity. From social point of view, IPRs strive to balance the private interests of creators, by ensuring that they have an incentive to create.

Loosely defined, intellectual property is a "product of mind". It is similar to any property consisting of movable or immovable things where- in the proprietor or owner may use his property as he wishes and nobody else can lawfully use his property without his permission.

"Intellectual property signifies any property created from the human intellect or mind. However, in the stricter legal terms IP is the property resulting from, created by or conceived by applying the intangible intellect or qualities of mind by a particular human being.

Historical Background

Patent law was first traced in Italy in the 15th Century. In the year 1624 during the period of Elizabeth-I in England executive rights were created are "Uniform Monopolis", In the year 1856 the British India granted first patent right to George Alfred De Penning for his invention of "an efficient panka pulling machine". International protection of intellectual property rights was first addressed in treaties beginning in the late 19th Century. In the Berne convention many intellectual treaties were addressed on intellectual property rights.

International Treaties

Copy right law is subject to international treaties and the Berne convention and the Universal Copy right is one of the important development. These agreements allow the countries that are party to the particular treaty, for reciprocal protection for nationals from different countries. The crucial factor, as established by these conventions is not where the material was created, where the alleged infringement was created, but where the alleged infringement took place. If a foreign work was illegally used in the United Kingdom, the infringer will be sued and punished in accordance with the British Copy right Act. If anybody down load in the United Kingdom data held on a computer in the United States, then the British law that applies, not American.

Rights associated with Intellectual Property which gives legal protection is referred to as Intellectual Property Right or IPR.

The World Trade Organization is a successor to General Agreement on Tariffs and Trade 1994 (GATT) a permanent World Trade Body. IPRs which comes under the ambit of GATT is a collection term which includes several independent IPRs namely patents, copyright, trademark, industrial design and Protection of undisclosed information. The Worlds

Intellectual property Organisation has been actively involved in this venture and is responsible for administering "Berne Copyright Convention which has proposed several changes but two are of particular significance to information professionals i.e. legal issues concern to library and information sector. The copyright generated in a member country of the Berne Convention is automatically protected in all the member countries without any need for registration however, the rights will not be automatically available in countries that are not members of "Berne Convention". The IPRs are mainly for the benefit of creators of work, invention and designs. India is an signatory to "Berne Convention" and has a very good copyright legislation compared to other countries. Copyright protection extends to expression of an idea which would be in a tangible form to get protection. Hence, any information transmitted in "Internet" is a subject matter of copyright in these days of digital environment.

World Intellectual Property Organization

The world Intellectual Property Organization in its present form came into existence in 1970 in consequence of an International convention signed at Stockholm on July 14, 1967. It became specialised agency of the United Nations in 1971. Its objectives includes among others, promotions of IPR & through out the world, through the union created by the Paris and Berne convention. The following International conventions and Summits had been held for the development of Intellectual Property Rights.

Rome Convention 1961

The Rome convention was held for the IPR protection of performers, producers of phonograms and Broadcasting organizations. By this convention major achievements had been done by controlling the reproduction and academic material either direct or indirect.

Berne Convention 1971

For the protection of IPR of the literary and artistic works of creators and Authors, Berne convention had been held in 1971. The main object of the Berne Union is to protect the right of Authors in their "Literary and artistic works". The theme of the convention was to protect the creation traditionally associated with copy right and accordingly it covered literary, Dramatic, musical and Artistic works.

Copyright and digital environment

The Information Technology Bill – 1999 which has been introduced in the parliament during November 1999 is a gaint step to take India in the new Internet era. The protection of content on internet which in all its form covers the classic definition of IPR and copyright Act, however

does not find a proper mention in the new IT Act given assent by the President. The content on the Internet is the parameter for the success of any dot com. It is the back home of the Internet business and IPR is related to it. Computer Crimes recognized under law would effect hackers and those who are not authorized to enter a system to download data, introduce viruses, damage data or the system block access to authorized users.

Rights to information Bill

In December 2004 the Union Cabinet gave its clearance to the "Right to the Information Bill 2004." Right to information is easy to work is e-governance of which Andhra Pradesh is a pioneer. Democracies live and thrive on openness of information, which empowers citizens to participate meaningfully in a political process. The citizens have the right to know the functioning of the government they have voted. Access to government files will work as an instrument to guard citizens against the vagaries of the administration and expose its malfunctioning. The Act will ensure that access to information is right, not a favour. It results in better administration by bringing people and administration closer to one another.

Information Policy

Any information policy must include information sector as a whole. It may be noted that a National level library policy in isolation of total information policy will not work. A true information policy covers the roles of government, authors, publishers, information service providers, libraries and information conveners. Information policy cannotes only library policy or at the most includes scientific information. It is high time that the government is impressed upon by concerted professional efforts to initiate again the process to formulate a mosaic and comprehensive policy which recognizes the economic, educational, cultural and technical value of information and integrates all the memory institutions namely, libraries, archives and museum and channels of man media. That only could lead us to information society for an all round development of the nation.

IPR In The Digital Environment

New communication technologies bring unpredicted opportunities for improving access to information and technology has the potential to improve communication and access for those disadvantaged by distance or economic circumstances. However technology has the potential to further stratify society into information haves and the information have not. If reasonable access to intellectual property right is not maintained in the digital environment, a further barrier will be erected which will deny access to these who cannot afford to pay.

In 1966, the members of the World Intellectual Property Organisation adopted two treaties to update copy right law for the digital environment. IFLA is a non governmental organization which exists to undertake, support and co-ordinate research and studies and disseminate information about all aspects of Library and training in this field. Traditionally libraries have been able to provide reasonable access to the purchased copies of copyright works held in their collection. However, if in future all access and use of information in digital format becomes subject of payment, a library's ability to provide access to its users will be severely restricted. In order to maintain a balance between the interests of rights holders and users, IFLA has developed the following statement of principals.

1. Legislation should give libraries and archieves permission to convert copy right protected material into digital format for preservation and conservation related purposes.
2. Legislation should also cover this legal deposit of electronic media.
3. Lending of published physical format digital material by libraries should not be restricted by legislation.
4. Providing access to a digital format of a protected work to a user for a legitimate purpose such as research or study should be permitted under copy right law.

In the digital environment new forms of information are invented by using digital technologies, new art forms are emerging like animation and computer music new forms of scientific visualization and new sorts of cybernetic social spaces. In this environment all over the world the owner of the copyright of the intellectual work are confronted and exploited. The copy right law, which was enacted in printing era by and large being forced on the existing digital environment, there is a need to modify IPR by which the creators can hold the exclusive right on their work to exploit. But due to the development of digital technology and communication technology, the information are crossing the borders very rapidly, the impact of domestic copyright laws has become muted. To overcome this serious problem of IP in the electronic environment, different nations are trying to protect the copy right by laws to the authors of original works.

Conclusion

Intellectual Property Rights in the digital age is acquiring an in separately status and there is an urgent need to study the laws relating to printing and other media at different level. The development in communication technology has triggered unprecedented changes in corporate activities. The purpose of Internet is to make its content

economically viable for the benefit of the newly emerging information society. This would largely depend on how successfully one is able to revolve the issues related to IPR.

In the present digital environment scenario librarian or the information specialists have an important role in protecting the rights of patent holders. The first and foremost duty of the librarian to keep himself aware with the latest changes in IPR and to oversee their proper implementation while purchasing books and other materials and also when these are used in the library. It is the social obligation that the librarians have to perform. In the curriculum of Library and Information Science keeping in view the importance of access to information it should include various issues related to IPR. A short-term course in IPR be framed specially for the librarians.

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Design and Development of Multi-Type Rural Public Library System in Andhra Pradesh (India): A Case Study

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ABSTRACT

This paper discusses the community information centres, community information services, public information kiosks, library co-operation, library collaboration and multi-type rural public library system. It also discusses in brief on library network. It highlights information needs of rural people especially relating to Agriculture, Health, Education, Employment, Legal, Banking, Industrial, Horticulture. This paper presents the objectives and also discusses the methodology followed. It presents the hypotheses tested. It describes the feasible model of multi-type rural public library system suitable to Indian circumstances. It also illustrates a schematic diagram showing network link in multi-type rural public library system suggested for each Zilla Grandhalaya Samstas (ZGS). It concludes with suggestions for future research.

Introduction

An inevitable trend in every society today is change and progress in which information plays an indispensable role. A society can only be considered developed when its members are well-equipped with information pertaining to all spheres of life. The role and value of information in modern society is not only apparent in urban areas, but equal emphasis need to be given to the role of information in rural settings in order to bring about an all-round development. However, the non-availability of relevant information through appropriate media for relevant purposes remains a major obstacle to any attempt at reaching the benefits of development to the rural masses.

UNESCO Public Library Manifesto, 1994 provides new guidelines for public libraries as community information centre. While proclaiming UNESCO's belief in the public library as a living force for education, culture and information, the manifesto asserts that the public library is the local centre of information, ensuring access of citizens to all sorts of

community information. Actually the concept of rural library is being used in different terms such as "Community Information Centres, Community Resource Centres, Public Information Koisks (PIKs), Community Information Services etc. All these concepts are related to rural public library system only. Hence these different concepts are discussed in this chapter to highlight their importance from the context of rural public library.

Objectives of the Study

1. To study and evaluate existing sources of information and information services available in rural libraries.
2. To appraise the attitudes and the opinions of the rural people on the concept of multitype rural public library for their villages.
3. To study and identify the information needs of the rural people in the age of electronic era.
4. To determine forms of sources wherefrom the rural people seek or gather information.
5. To examine information seeking behaviour (most reliable source of information, information sharing pattern, informal communication network) of the rural public.
6. To examine and identify the information gathering habits of the rural community in the age of Information Technology.
7. To study and evaluate existing information, infrastructure available for rural public.
8. To examine the information channels used by rural people for receiving information required.
9. To design and develop a multitype rural public library system useful to rural public in place of traditional rural library system.

Methodology of the Study

There are different survey research methods used for eliciting needed information in the field of social science research. Of all these methods, questionnaire and interview method is most popular and are widely used. Therefore "questionnaire method" has been employed to collect relevant data in the study.

In view of larger geographical area and sample size of Andhra Pradesh Public Library System, and also consideration of common rules and regulations followed by all Zilla Grandhalaya Samsthas, the present sample study is limited to 9 Zilla Grandhalaya Samsthas covering three regions, namely, "Rayalaseema", "Telangana" and "Coastal Andhra" of Andhra Pradesh State equally.

In order to collect the data through questionnaire method and interview method, the researcher has chosen 27 rural libraries, at the rate of three

village libraries from nine Zilla Grandhalaya Samsthas by simple random sampling method.

Community Information

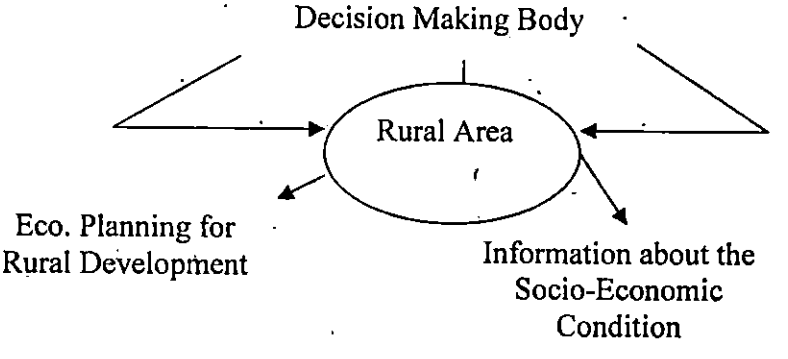
Generally, Community information is considered as such type of information required by the members of the community for effective use of available resources to solve their day-to-day problems. The most accepted definition of Library Association's Working Party on Community Information Services is that, "services which assist individual and groups with daily problem-solving and with participation in the democratic process. The services concentrate on the needs of those who do not have ready access to other sources of assistance and on the most important problems that people have to face problems to do with their homes, their jobs, and their rights."

Community Information Centres (CIC)

For transforming the rural libraries into active community information centres, the infrastructure of these libraries has to be improved. They may be provided one set of computer, printer, scanner, UPS, fax and photocopying machines and Internet link. The improved facilities will also enable them to serve as literacy centres in rural areas. This will not only help in improving the literacy rate, but also sustaining the literacy of the neo-literates and thereby promote the objectives of the National Literacy Mission.

Rural Information Needs/Rural Information (RI)

Rural information are of two types: (a) Information regarding different economic planning for rural development; and (b) Information concerning the actual condition of the rural people, their level of poverty, socio-economic condition etc. These are diagrammatically shown below:



Besides, there may be some common information which are of use by the rural people to improve their avocation and livelihood.

Types of Information expected by Rural People

The primary purpose of the public library is to provide resources and services in a variety of media to meet the needs of readers. The rapid growth of information and the continuing technological changes have already made a significant effect on public libraries and services. The users expect the following services from public libraries in information society.

- Government Information – Health & Welfare Services, Governor, Chief Minister, MPs, MLAs, Government Orders, Public Utility Forms, Tender Notices & Display, High Court Case List, Judgements, Employment Exchange, Corporation/ Municipalities, Educational Institutions, Tourism, Transport Organizations etc.
- Education & Training – Educational programmes, Institutions, Government Organisations, Career information etc.
- Health Information – for Women, Children, Health Institutions/ Associations on specific diseases –Diabetes, Cancer etc., Public Health, Reference Source Documents, Physicians/ Surgeons/Specialists etc.
- Community Information – Local events, activities, and educational opportunities, social & welfare information, employment rights, housing, civil rights, disability information, information on charities etc.
- Consumer Information – websites where consumer information is available, consumer associations, government bodies, financial advices, homes, law, cars, buying and selling etc.
- Travel Information – travel companies, travel-related products, such as tickets, accommodation, holiday packages, maps, places of interest.
- Business & Finance information – share prices, taxation regulations, government information, government utility forms, associations, companies employment and training.
- Local history information – historical buildings & archaeological landscapes, national monuments, local photographs, local archives, history magazines etc.
- Children's information – homework resources, geographical magazines, volcanoes, mountains, children stories, fun and games etc.

Community Information Services/Community Information Services (CIS)

CIS is survival information dealing with health etc, and citizen action information dealing with political and legal rights. It includes provision of information on the following aspects:

- Information on educational avenues;
- Information on employment opportunities;
- Information on agricultural aspects;
- Information on health aspects;
- Information on cottage industries;
- Information on income generation programmes;
- Information on government procedures;
- Information on legal aspects;
- Information on consumer services;
- Information on government welfare schemes; and
- Information on current affairs.

Public Information Kiosks (PIKs)

In a developing country like India the evolution of PIK has three stages:

1. The PIK will be started as a simple reading room, providing a few newspapers, magazines preferably in local language and induce the public to the reading habit and love for learning.
2. In the second stage, a small library will be developed with a few books for pastime reading and gradually developing the collection with the literature relevant to the local needs. They sustain the reading habit with the native skills. Encourage the youth and cultivate a garden of friends of the library. The needs of the neo-literates may be taken into consideration in this regard. This is a second/third year programme. An awareness of the usefulness of the library thus gets established.
3. The final stage is reorganizing the library as information or resource centre with the assistance of the organizations like National Informatics Centre. A telephone booth with STD/ISD facility may be provided in the PIK, which could provide access to the INTERNET and the related services like E-mail, etc.

Library Co-Operation and Collaboration/Co-operation

The term of co-operation has been defined by the scholars in different ways. International Encyclopedia of Social Sciences defines "co-operation is a joint or collaborative behaviour that is directed towards some goal and in which there is common interest or hope of reward". Oxford English Dictionary defines co-operation as "The action of cooperating i.e., working together towards the same end, purpose, or effect; joint operation." Oxford American Writers' Thesaurus explains co-operation in the following manner: "Co-operation between management and worker, collaboration joint action, combined effort, teamwork, partnership, co-ordination, liaison, association, synergy, synergism, give and take, compromise." After analysis of above

definitions it may be said that the term co-operation has different meaning in different contexts. However, in simple meaning co-operation is an acting or working together for a common purpose. In other words, co-operation is contract between people/organizations to achieve common interest for certain period.

Collaboration

Harold, M. in Librarian's Glossary has defined collaborator as one who is associated with another, or others..... Hence, collaboration can be viewed as having association with another or other libraries. In other words, this association can be explained as co-operation with other libraries or in modern context as 'Resource Sharing' or 'Library Consortia'.

Public libraries should develop linkage and promote collaboration among schools, colleges other educational institutions to collect information from government departments such as agriculture, health, education etc., mostly brochures, pamphlets, handouts, which are potentially of great use to the rural public. Further they should exchange information between local institutions with strong linkage with technology centres, financial institutions and marketing networks is also advisable.

So also they should develop co-operation with non-government organisations, which also play an important role in the upliftment of socio-cultural life of the rural people. They are also useful to bridge the gap between the rural masses and the rural public libraries.

The concept of public library co-operation and collaboration with educational institutions, technical institutions, government departments and non-government departments will strengthen the rural library services by increasing the resources of the rural libraries which instead of remaining isolated units without any channel of communication between them, can turn out as reservoirs of resources and information.

Library Network

According to Miller, 'it is a cooperative system established by libraries and information centres, which are brought together by common subject, geographical proximity to share informational resources, human resources and all other elements essential for providing effective information service.'

The ALA Seminar on 'Networking and Multiple Library Co-operation' (1977) defined library networking as follows: "The cooperative structures, which cross jurisdictional, institutional and often political

boundaries to join in a common enterprise, several types of libraries – academic, special and public".

From the above two definitions, we can understand that a library network means more than two libraries or information centres interrelated by continuing transactions often in support of a common operation or service. The application of computer and reprography technology in the libraries has introduced new possibilities in interlibrary co-operation beyond the conventional 'interlibrary loan.' The term 'networking' expresses more clearly the impact of new technology to libraries. However, the main thrust of any library networking is library co-operation and resource sharing. The advantages of networking can be briefly said as follows:

(a) Access to a larger collection of materials from different libraries, which is not possible for any single library to acquire;
(b) Maximum use of the library resources;
(c) Service to more number of users from the same library as well as from other libraries;
(d) Comprehensive services;
(e) More service at less cost; and
(f) Timely service.

The Recommendations of the Committee on National Policy of Library and Information System for Public Library Network

The following are the recommendations advocated by the committee on National Policy of Library and Information System for public library network:

1. All the libraries within the state should form part of a network extending from the community libraries of the village through intermediary levels to the district and to the State Central Library. This state network should eventually connect with the national level.
2. The State Central Library / Directorate of Public Libraries has to perform as the coordinating agency for the public libraries in the state.
3. The District Library will take the leadership in establishing linkages between all other public libraries of the district and work towards resource sharing within the area.
4. Use of communication facilities for developing inexpensive local library and information network has to be supported for practicing resource sharing. Any user should have ready access to documents / information wherever he/she is located.

National Knowledge Commission 2006 offers guidelines for networking of public libraries as follows:

a) Networking of Public Libraries should be undertaken in a phased manner. There are approximately 54,000 public libraries in existence.
   Phase-I: 1,000 of these will be networked in Phase-I as a pilot project, by Delnet and Inflibnet each covering about 500 libraries in 12-18 months.
   Phase-II: Based on the experiences of Phase-I, up to 10,000 libraries will be covered in one year.
   Phase-III: The remaining libraries may be networked in the third and final phase in three years. This project should be completed by 2011.
b) Raja Rammohan Roy library foundation may give the necessary infrastructural support for the above activity and co-ordinate it.
c) The networking agencies should ensure state-of-the-art technology with the following features:
   i. Open source platform for the software, which also supports multi-lingual environment with multi-user and multimedia content creation capabilities.
   ii. Storage, dissemination and replication of the data through mirror sites, gateways, portals, and inter-library loan facilities.
   iii. Capability of conducting exhaustive training programmes

Multitype Library Co-operation

The Joint Divisional Planning Committee for a symposium on Multitype Library Co-operation defined it as: "A Multitype library cooperative or network is a combination merger or contractual association of two or more types of libraries (academic, public, special or school) crossing jurisdictional, institutional or political boundaries. Working together to achieve maximum effective use of funds, to provide library and information services to all citizens above and beyond that which can be provided through one institution on a local level. Such cooperative networks may be designed to serve a community, a metropolitan area or region within a region, or may serve a state wide or multi-state area".

Need and Purpose of Multitype Rural Public Library System

Information needs of rural people is increasing in multidimensional plans such as Agriculture, Health, Education, Employment, Legal, Banking, Industrial, Horticulture and also schemes and programmes implemented by State and Central Government. Hence, it is impossible to single rural library to meet all these needs. Hence there is need to go for co-operation so as to share information with participating organization especially this

co-operation should be among all types of libraries (Academic, Public, and Special Libraries) and Government organizations and non-government organizations so as to collect information required for rural public. Therefore, it is the need of the hour to introduce multitype rural public library system under the management of Zilla Grandhalaya Samstha duly enacting as an Amendment to the Andhra Pradesh Public Library Act, 1960.

The main purpose of multitype real public library system is to support access to information and resource sharing, library development innovation and advocacy facilitating and co-ordination cooperative programmes and equalizing services.

Objectives of Multitype Rural Public Library System

(1) To achieve maximum use of funds and to provide library and information services to all citizens state-wide or multistate area.
(2) To develop local access point to a range of government information resources and services.
(3) To create, maintain and organize electronic community information required for rural public.
(4) To provide training to community residents on how to use the internet and interact successful with range of service being provided via the Net.
(5) To provide collaboration among all types of libraries, technical and industrial institutions, government departments and non-government organizations to pool all types of information.
(6) To build up specific collection of digital objects related to the thrust areas of community information services.
(7) To develop a model of multitype rural public library system.

Hypothesis Tested

1. The majority of the rural public are not aware of the developmental programmes and schemes implemented by Government of India and State Government to raise the standard of living of the rural public. The data collected on (1) Awareness of some programmes of Government of India, (?) Awareness of Flagship programmes implemented by Ministry of Rural Development in India; (3) Awareness of some programmes of the Government of Andhra Pradesh. This reveals that the hypothesis is accepted.
2. Majority of the rural public utilizing mass media (T.V., Radio, Newspaper etc) as information seeking sources for gathering

their information needs. The data collected on (1) utilization of electronic media and sources of getting them, (2) usual information seeking-sources reported by the respondents, (3) type of material/media preferred for getting information. This shows that the hypothesis mention is accepted.

3. Rural public are depending on village panchayats for information on Government schemes and programmes rather than other source of information. The data collection on channels of information and sources for getting information regarding government schemes. This reveals that the hypothesis stated is accepted.
4. "Information Sharing" is one of the important channel through which rural public exchange information needs required for day-to-day use. The data collection on information sharing pattern and place preferred to share information. The study shows that this hypothesis is accepted.
5. The rural public prefers information on agriculture, health, education, technology, government plans and policies in place of other information needs. The data collected on (1) information needs reported by the respondents, (2) awareness about some special types of information, (3) frequency of requirement of different types of Information, (4) subject of interest from information needs. Data analysis shown in the above tables support the statement of hypothesis mentioned above. Hence hypothesis is accepted.
6. Rural public may like to have a multitype rural public library system with resource sharing and linkage with government departments and other organizations for getting up-to-date information on all aspects of their development. The data collected on departments from which co-operation is necessary for the multi-type rural public library. This support the above statement of hypothesis and hence it is accepted.
7. Even today due to non-availability of suitable rural library services, the majority of the rural public are not aware of the social evils which are the bottlenecks for development in the society. The data collected on awareness of users about some social evils. As per data analysis of the above table the hypothesis stated above is accepted.

Design and Development of Multitype Rural Public Library System – A Proposal

Amalgamation of the concepts relating to rural public library and also the influence of new technologies gave rise to multitype rural public library

system as envisaged hereunder:

Development of a system involves the following steps

Step-1: Planning the system
Step-2: Finalizing the list of participating organizations
Step-3: Identifying user needs
Step-4: Determining collection Development Policy
Step-5: Fixing Responsibilities and Commitments.
Step-6: Deciding Resource Sharing Policy
Step-7: Deciding Technological Requirements
Step-8: Funding and Staffing
Step-9: Governance and Management

Step-1: Planning the System

The foremost important step in developing system is planning. Planning includes the following factors:

a. Framing rules and regulations to establish the system
b. Selection of participating libraries and organizations. (that is Academic Libraries, Special Libraries, Public Libraries, Government Organizations – departments and Non Government Organizations – philanthropist societies).
c. Deciding terms and conditions of Agreement with participating organizations.
d. Developing collection development policy.
e. Fixing technological requirements.
f. Deciding financial commitments on the part of participating organizations.
g. Determining legal implications to avoid disputes.

Step-2: Finalizing the List of Participating Organizations

The very objective of multitype cooperative system is to achieve co-operation between like minded organizations. Multitype Rural Public Library system needs co-operation among different types of libraries, such as Academic Libraries. Public Libraries and Special Libraries and Government and Non-Government Departments as listed below:

a. School Libraries (locally well established)
b. College Libraries (locally well established)
c. University Libraries (Within the region)
d. Open University Study Centres (District Level)
e. Continuing Education – Distance Education Centres
f. Industrial Libraries (District Level)
g. Technical Libraries (Engineering & Medicine)
h. National Informatic Centre (NIC)
i. All Government Departments (District Level State & Central)
j. Non-Government Organizations (District Level)

And any other organization which provides information for the development of rural public. Once the said organizations are identified the cooperative terms and conditions are to be discussed and agreed upon.

Step-3: Identifying User Needs

The rural libraries are often closer to the users than that of larger libraries due to limited population in the service area. The users in the rural libraries are more aware of the overall needs further the rural libraries should support local needs rather than other needs. Therefore, it is essential that rural library should make every effort to provide information needs which are essential for day to day life of the rural public. The following are some of the information needs identified for the benefit of the rural public. Agriculture, Education, Health, Sports, Employment, Banking & Industry, Women Welfare, Children Welfare, Horticulture, Government Schemes both (State & Central) Government Programmes both (State & Central), Animal Husbandry, Forestry and other needs on demand from time to time.

It is also essential to identify the priorities of users needs and categorize them by levels and type of communication media, etc., and match them with the available resources and kind of users needs.

Step-4: Collection Development Policy

Suitable collection development policy is essential for developing multitype rural public library system. The acquisitions are an important activity in cooperative library system. The first and foremost important point to be noted is that technological and economic factors are to be considered most important, in collection development activity. Among the technological issues it needs to be noted that:

a. Moving from printed text to machine readable text brought about fundamental changes in library activities.
b. Integration of data unique to particular procedures such as borrowing records, payment records, etc., should become available at one place in an integrated form.
c. Local holdings information in the catalogue in the form of a union catalogue helps in ILL at several levels – local, regional and national.

It is well established fact that in a cooperative library system the main collection development principle is to avoid duplicate acquisition of reading material in any participative library, this wholes goal in collection development in multitype rural public library system.

National Knowledge Commission (2006) provided the following guidelines for collection development in public libraries as follows:

(1) The size and nature of the collection should reflect the local requirements.
(2) Locally relevant language material should be available.
(3) Book purchase should be a continuous process and at least 10% of the book collection should be less than five years old.
(4) At least 60 per cent of the library's budget should be spent on collection development.

Step-5: Fixing Responsibilities and Commitments:
Each membership organization in the system should all principles and policies agreed upon. In co-operative organization complains to agreed upon responsibilities make the entire system of work effectively for every one. So, also commitment to the cause of co-operation, a specially for revenue sharing is essential on the part of each participative organization thus shouldering responsibilities and commitments as per agreement participation of libraries and organizations is an important function in the cooperative system.

Step-6: Deciding Resource Sharing Policy:
The very purpose of multitype co-operation is to achieve resource sharing among participative organization and libraries within a geographical area. The following are the important functions are involved in resource sharing:

1. *Cooperative Collection Management*: assisting libraries in making arrangements in cooperatively planning and purchasing collections.
2. *Delivery/Courier System*: Management of document delivery service of resources that are shared and not able to be provided to the library in an electronic format.
3. *Document Delivery*: Management of document delivery service of materials through electronic means such as telefacsimile, using the internet, providing full text documents electronically.
4. *Interlibrary Loan*: Assisting or facilitating for library to library borrowing of materials through joint arrangements, shared data base or provision of the service.
5. *Reciprocal Borrowing*: Supporting a means for clients of one library to obtain borrowing privileges on-site at other member libraries.
6. *Reference*: Management, support and often answering questions that local libraries cannot answer.
7. *Reference Referral*: Supporting a means to assist libraries in locating resource and getting answers to questions by supporting

cooperative arrangements between libraries between libraries and other information providers.

8. *Rotating Collections*: Supporting a means to move selected collections between libraries; collections would be limited in scope and have a limited number of local clientele interested so that resources could be available at the local library.

Step-7: Deciding Technological Requirements:

The introduction of new technologies and increasing communication facilities brought drastic change in information transfer in information centers. These technologies gave birth to library networks. Library networks play an important role in modernizing library services for the benefit of users in all types of libraries. The following factors have guided libraries in this regard.

1. Use of computers for the creation of databases for better services to users;
2. Use of telecommunication systems to move information in machine readable form from one location to another for users.
3. The use of standards that enable computers and telecommunication systems to network so that bibliographic statistical and textual data from various online sources are merged for better use.

Step-8: Funding and Staffing

Scarcity of funds is one of the bottlenecks in the growth and development of small library. A specially rural libraries this problem continues in all public library systems and cause hindrance to meet the increased demands of the rural community. The concerned of funding is evident especially in the area of telecommunication costs, computer costs, etc., to provide modern information services rural community. The present system of funding by Zilla Grandhalaya Samastas is to meagre to develop rural public library system. Therefore, it is of no use merely depending on cess collection only. It is an urgent need that D.P.L. Director of Public Library should initiate to allocate at least 15% Educational Grant for the growth and development of rural public library system in each state and country. Further the feasibility of collecting nominal service from the user is to examine keeping in view of the living standards of rural public.

Existing Staffing pattern in rural public library system is in very pathetic condition. Majority of the rural public libraries do not have qualified librarian that to managed by single individual only. Under these circumstances it is impossible to modernize rural public libraries to meet information needs of the rural public. Therefore immediate steps to be taken by Directorate of Public Libraries to formulate staff formula to

establish run multitype rural public library system. Keeping in view of its objectives so as to serve information needs required by rural public.

National Knowledge Commission (2006) suggests that a specified percentage of the central and state education budgets should be earmarked for libraries. In addition, a central library fund should be instituted for upgrading existing libraries over a period of 3-5 years.

Step-9: Governance and Management:

The Governance and management function is essential for day to day management of each participative organization so as to strengthen to achieve objectives of multitype rural public library system for this purpose the planned multitype rural public library system be introduced through legislation as an Amendment to existing public library Act 1960 of Andhra Pradesh and so also to existing public library Acts of other state governments. This governance and management function include the following functions:

1. *Evaluation of the cooperative program*: Regular evaluation and input on the entire service program.
2. *Financial Reporting*: Regular information regarding the financial condition of the organization.
3. *Governing board and Policy generation*: Development of policies and protocols to operate the cooperative organization.
4. *Legislative Networking*: Assistance with the development and passage of legislation affecting library services.
5. *Networking with non-library agencies*: Assisting libraries and developing a means to access information from non-library agencies as information providers.

National Knowledge Commission (2006) emphasizes that the libraries should be so organized and staff so trained that they become relevant to user communities (including special groups) in every respect also, to optimize reasons. Efforts should be made to synergize of different types of libraries through innovative collaboration.

Suggestions for Future Research

The present study is aimed at designing and development of a multitype rural public library system in place of existing rural libraries/community information centres/community information services/public information Kiosks/Community Resource Centres, etc. Further this study emphasizes the development of linking of public libraries with government departments and non-government departments for better information service to the rural public.

This study also focused the importance of village network and network services for rural public. Therefore this study is only a beginning but not an end in the direction of rural community services. There are number of thrust areas in the direction of rural community information services, which may attract researchers to study and investigate especially local information systems and sources, identification of potential areas of community information services. Analysis of direct and indirect information needs of the rural public, study on working procedures relating to information collection and databases systems, studies relating to decentralized dissemination of community information at the point of utilization; study of identification and collection of community information on thrust areas, studies on compilation of information services and many other topics related to rural community information services and rural public library system. Thus this study will provide an opportunity to organize research in different areas pertaining to rural public library systems in the years to come.

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Institutional Repositories: An Overview with Special Reference to the Library of Indian Institute of Management (IIM), Lucknow

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Introduction

Research Institutions and Academic Institutes continuously contribute in the process of generation of knowledge, which has got immense value for others. It is very essential that this knowledge should be properly preserved, well-managed and laid open to access by those who may be benefited by it. The Institutions, which produce this knowledge are supposed to preserve, posses, manage and make accessible the research outputs to internal and external users. This process is achieved through a system of scholarly communication, which is multi-faceted and rigorous process involving many stakeholders. The research findings in the forms of research reports commonly known as theses, dissertations, project reports and articles (or papers) are formally published through publications called journals in order to facilitate access to primary as well as secondary source of information to the scientific and academic community.

In the past, it was not very difficult for the libraries to organize, manage and disseminate information materials using manual operation, as the volume of information was not very large. After the Second World War,

there has been a tremendous output of information at a very fast pace. This is commonly known as information explosion. But to preserve, manage and disseminate this gigantic volume of knowledge is not an easy task for the institutions and libraries. The traditional system of publication of International Journals does not effectively and economically cater to the needs of scientists, researchers and academicians due to various reasons such as financial constraints of subscribing to exorbitantly priced journals, time delays between the production of knowledge and its access to the user due to the cumbersome chain of publication process and a host of other reasons. Owing to this the scientists, researchers and academicians are often deprived of access to knowledge, which may have great value for them as the research publications usually contain very valuable and detailed information such as data, observations, analysis, conclusion and recommendations etc. This genuine problem has been solved with the development and building of Institutional Repositories.

Emergence and Need of Institutional Repositories

With the advent of computers in the field of Information Technology and the emergence of Internet, it has become possible to store, preserve and retrieve information electronically. This phenomenon has given rise to the development of a new concept of Digital Libraries. The creation of digital libraries has greatly facilitated the development of Digital or Institutional Repository, which constitutes an integral part of the modern digital libraries thereby permitting global access to the scholarly publications. Information Repository gives exposure to researchers and their research findings to the scientific and academic community, leads to the long-term preservation of information and affords an opportunity for further research in the related fields. Digital Theses and Dissertations are the major components of any Institutional Repository.

An Institutional Repository is a database with a set of services to capture, store, index, preserve and disseminates an Institution's scholarly research findings in digital format. In the recent past momentum has been building for the development of Institutional Repositories by libraries. Repositories help Institutions to develop coherent and coordinated approaches to capture, storage, identification and retrieval of their intellectual assets. It helps in maximizing the efficient use of existing research, creates opportunities for enhanced learning experiences and also encourages collaboration and cooperation between different disciplines and groups. Repositories offer a means by which Institutions can break the cycle of individual silos of digital contents by establishing a common store, which provides access to all those who want to benefit from it.

Digital or Institutional Repository constitutes an integral part of modern digital libraries facilitating global access to the scholarly publications. Digital Repository is a set of services that an Institution offers to the members of its community for the management and dissemination of digital objects created by the Institution and its community members. A digital repository can hold a wide range of materials for a variety of purposes and users. The constituents of an Information Repository may include various types of publications, such as pre-prints of journal articles, research reports, theses, dissertations, conference papers, seminar presentations, working papers and other scholarly items.

In fact Institutional Repositories are digital archives of intellectual products created by faculty, staff and students of Institution accessible to end user both within and outside the Institution. With the help of digital repository infinite documents or databases can be stored in computers very easily. The data thus stored electronically can be retrieved or disseminated in digital form. In this manner Institutional Repositories greatly facilitate the storage, preservation and dissemination of digital information. This new service offered by libraries and computing centers as infrastructure facilities helps disseminate the idea of electronic publishing as new tool for academic work.

A significant advantage of Institutional Repositories is that they facilitate the free sharing of knowledge in the form of learning content, encouraging wider collaboration and communication and informing best practices. An Institutional Repository collects and preserves all the publications of the Institution on a single platform from, where they can be made accessible to students, researchers and others whenever needed. Thus it helps in saving the time of users by providing them with the needed information through online access facilities. Another important advantage of digital repository is that it is very economical for the user as he is saved from the trouble of spending huge amounts of money on purchasing books, journals, periodicals and audio-video materials.

An Institutional Repository helps in pooling the Institutions intellectual capital, which may be otherwise distributed, scattered and unnoticed, on a single platform. Hence it serves as a single access point for the research output of an Institution. Digital Repository removes access barriers to important and useful knowledge resources for the scientists, scholars, teachers, students and others. Thus it helps in accelerating the pace of research and lays the foundation for uniting humanity in sharing of vital knowledge resources and fulfills the quest for knowledge. Institutional Repository saves the precious time of users by instant generation of research reports. It also helps in ensuring long-term preservation of

scholarly information material with the help of Open Source Softwares and Open Standards of data models and structures.

Institutional Repositories play a vital role in the process of scholarly communication and support the Open Access movement. Scholarly communication refers to the explicit research findings, theses, dissertations, project reports and articles, which the scientific and academic community produces for making it known to those who may benefit from it. Traditionally these research reports commonly known as "articles" or "papers" are printed in the paper medium by publishers and other stakeholders and brought out in the form of journals. These publications are subscribed by libraries to facilitate access to primary as well as secondary source of information to the scientific and academic community. The following figure-1 illustrates the supply chain of traditional scholarly.

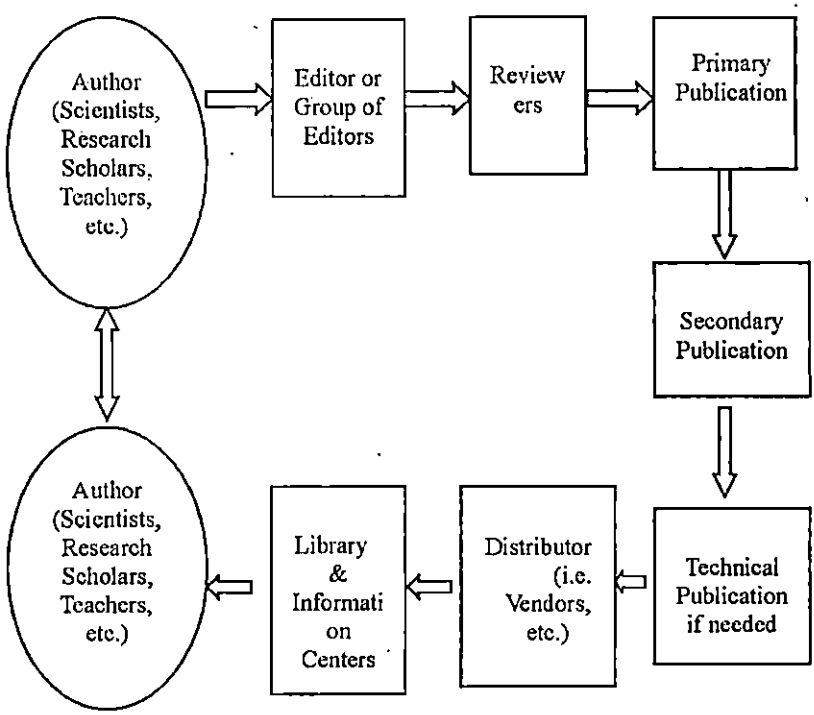


Figure.1. Scholarly Publication Value Chain

There are three models of scholarly communication, which are ecognized and accepted throughout the world. They are as follows:
The traditional paper-based journal publishing process.
E-publishing on commercial basis.
The Open Access publishing.

The scholarly publication value chain extends from the source of information to the point of usage. The traditional paper-based journal publishing process took a long time of about 36-52 weeks for journals to publish whereas E-publishing gave a big boost to the scholarly publishing domain, and brought down the publishing period to merely 3-4 weeks. The basic difference between traditional publishing process and E-publishing is the de-linking of printing from the publishing process.

However, with the increasing use of Internet in the field of information technology, the scenario of scholarly publication has changed considerably by dramatically shrinking the supply chain of information. The advantages of online access technology have given rise to a third category of scholarly communication, which is known as Open Access Publishing/ Scholarly Archive Publication. These have emerged as a result of the Open Access Movement, which is growing popular globally. In the latest system of Open Access Publishing the authors can publish their findings at an incredibly fast pace of a few minutes.

The figure (Figure.2.) illustrates comparatively the main features and merits of the three established systems of Scholarly Communication namely:
Traditional paper-based publishing
E-publishing
Open Access

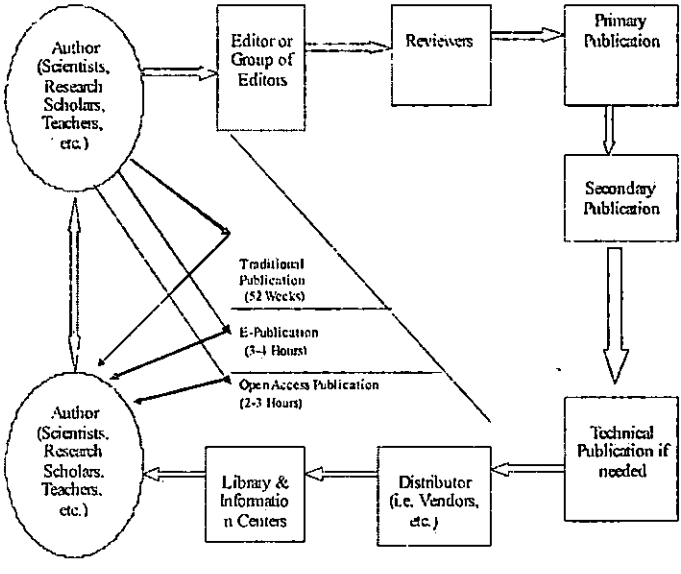


Figure.2. Upcoming Models of Scholarly Communication Value Chain

The concept of Digital Institutional Repositories is an outcome of Open Access to Information (OAI) movement, which was instrumental in the development of Digital Libraries. The term Open Access refers to the novel concept of universal free access to scholarly information. The Open Access process is all assuring that the scholarly content is made available online, thereby releasing the scholarly content from the clutches of the monopoly of profiteering publishers. The ultimate goal of the Open Access Movement is to make possible the worldwide electronic distribution of the peer-reviewed journal literature and its completely free and unrestricted access to scientists, scholars, researchers and academicians. There are two ways to attain this goal:

1. Open Access Publishing (OAP), commonly known as "Golden" road to Open Access.
2. Open Access Archive (OAA) or Open Access self-archiving also known as "Green" road to Open Access.

Open Access papers get increased visibility through novel modules of harvesting done by search engines such as the Google, Citeseer etc. The interoperability among similar archives achieved through the Open Archives Initiative (OAI) Protocol for Metadata Harvesting (PMH) has lent unparalleled value addition to OA Archives. When we say that Institutional Repositories are open and interoperable- it implies that they are Open Access to Information (OAI)-compliant and allow open access to scholarly research. The interoperability framework provided by the Open Archives Initiative (OAI- www.openarchives.org) is a major development that has facilitated the development of Information Repositories. This framework, through the protocol for metadata harvesting (OAI-PMH), enables different digital libraries to expose their metadata for the purpose of automatic metadata extraction from all participating digital libraries and building various services, including a Central Metadata Index and search systems. The many repository platforms available today are changing the nature of scholarly communication. The Institutional Repository development has got momentum in research and University libraries with the availability of open source digital library softwares like E-prints, Dspace, Greenstone, etc.

Proposal and Planning of an Institutional Repository

An Institutional Repository has become an easy means of digital archiving, which enables access to digital information. Repositories are important for Universities and Institutions as they help to manage and capture intellectual assets and their long term preservation, survival and utility as a part of their objective. Each Institutional Repository service will be unique to the Institution where it is built.

The following steps are the major milestones in building an Institutional Repository:

Developing a Service Definition and Service Plan: Conduct a need assessment of the Institution; Develop a cost model based on this plan; create a schedule and time frame and develop policies that govern content acquisition, distribution and maintenance.
Assembling a Team: There should be a highly skilled team, which should be entrusted with a task of designing and building the Institutional Repository.
Selection of Technology: Appropriate software platform should be chosen and installed to build the Institutional Repository.
Marketing Strategy: An effective marketing strategy should be planned and adopted to run the Institutional Repository successfully.

Each Institution requires a customized approach while building an Institutional Repository as it has unique culture and assets. The information model that best suits the Institution should be adopted for designing the Institutional Repository. As Institutional Repositories are a new breed of services and software, the technology is constantly changing and new information on building and running these services needs to be updated.

The planning of an Institutional Repository depends to a great extent on the service definition of the proposed Repository. To develop a service definition means the services the Institutional Repository will offer, determining the policy decisions, who will deposit content in the repository as well as end users and the business plans of the service. An Institutional Repository is not defined merely by the software and database that comprise the digital collection, but it is a set of services- for those who deposit content, the academic and research communities included and for end users.

Hardware Requirement
The following equipments are required as a pre-requisite for setting up an Institutional Repository:
Intel Pentium-4 Processor, Clock Speed 3.0 Ghz; 1 MZ L2 Cache; 800 MHz FSB; 512 MB PC 2700 ECC DDR RAM; 2X36 GB ULTRA 320 SCSI HDD/ 3X80 GB SERIAL ATA Hard Disk; 2X10/100 Mbps LAN Card; DVD-R/W; Intel Advance Graphic Cards; Integrated Audio Serial and Parallel I/O Ports; Windows Software.
A4 Size, Flat Bed, 24 Bit Colour Scanner; 4800X9600 DPI; USB Connectivity bundled with OCR Software.
Printer: HP Laser Jet 1020
UPS

Software Requirement:

An Institutional Repository system is constituted with the following technology building blocks:

- Windows or Unix/Linux Servers;
- Web Server, such as Apache and related web application tools;
- Database, such as MySQL, DB2, Oracle, Postgres, SQL Server;
- Institutional Repository Software.

Various Institutional Repository Software Platforms are available in several different licensing and distribution models:

1. Proprietary Software
2. Open Source Software
3. Software Service Model

Open Society Institute (2004) has published "A Guide to Institutional Repository Software" which contains a detailed discussion regarding software available via open license and complies with latest version of OAI PMH. Some leading Software Platforms available presently for building Institutional Repositories are mentioned as follows:

DSpace, Archimede, Bepress, EPrints, Fedora, Greenstone, CDSware (CERN Document Server Software), OPUS, I-Tor, My CoRe, Open Repository, CONTENTdm, etc.

Besides these several other software platforms are also available, which the libraries may examine closely in order to choose the one, which matches best their specific needs.

Findings of Survey

The IIM, Lucknow was set up by the Government of India in 1984 for creation, dissemination and application of management knowledge to the various sectors of the economy and society. It is one of the six national level management institutes established by the Govt. of India to help improve the management of the corporate and non corporate sectors and also the public systems, through pursuit of excellence in management education, research, consultancy and training. IIM, Lucknow undertakes a diverse range of academic activities, which includes Post-Graduate Programme in Management (PGP), Fellow Programme in Management (FPM) and research activities.

The IIM, Lucknow has a spacious 30,000 sq. feet double storied library called **Gyanodaya**, which has a core collection of over 70,000 select documents in various forms. The library is well equipped with all modern equipments to supports its diverse range of activities. The library

remains open round-the-clock, all days of the week, including Saturdays and Sundays except Government gazetted holidays. The library has a rich collection of about 40,000 books on management, agriculture, social sciences and other allied areas, besides 891 e-journals; 26 e-data bases and 11,875 microfilms and fiches. It also subscribes to 562 periodicals, which includes 210 Indian periodicals and 352 foreign periodicals. This library caters to the information needs of 620 members.

Digital Library

The library of IIM, Lucknow offers a diverse range of services, which includes Computerized Issue Return; OPAC; Reference & Information; CAS; ILL, bibliographic & reprographic; Micro-forms & Audio-Visual; Database Access, Search & Retrieval; Internet based services; On-line/Off-line Document Delivery, Specialized Documentation Services, etc. A young, enthusiastic and dedicated professional team of 14 staff members manages the library.

The library of IIM, Lucknow has developed a digital repository using Green Stone Digital Library Software (GSDL). This Institutional repository contains archive of IIM, Lucknow Newsletters, Metamorphosis journals and research papers published by IIM, Lucknow faculty members in various leading journals, books and conference proceedings. However, this repository does not contain any thesis or dissertation in digital form.

Conclusion

Digital or Institutional Repositories are a new breed of services, which facilitate on-line storage, preservation, retrieval and dissemination of information. It provides on-line access facility, as all library materials are available in digital form. They provide open access to valuable research information and maximize the research impact of achieved publications. These services are very economical and highly feasible for research scholars, students, faculty members, scientists and academicians. They are playing a major role in the modern scholarly communication process. Institutional Repositories provide universal free access to scholarly information and release the scholarly contents from the monopoly of commercial publishers, thereby making it available freely to the scientific and academic community worldwide. The development of Institutional repositories has made possible the worldwide electronic distribution of the peer-reviewed journal literature to scientists, scholars, teachers and students. They help to accelerate research, enrich education and share the learning experiences of the scientific and academic community.

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Knowledge Sharing

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ABSTRACT

The paper presents definition of Knowledge Management and Knowledge Sharing. Benefits Quality, Principles and collaboration technologies in knowledge sharing. Some details are also provided for knowledge sharing in India with study of Consortia like INDEST, CSIR, UGC and ICICI. Document delivery and interlibrary cooperation are also discussed in this article.

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Public Libraries are Knowledge Resource Centre: An Overview of Tamil Nadu Public Library System

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ABSTRACT

This paper attempts to focus on the present state of the Public Library System in Tamil Nadu state through the evolution of library legislation in Tamil Nadu and in India. More emphasis is given to explain the working nature of the system. The recent attempts made by the Local Library Authority to implement ICT are traced out and focus also has been made on the role of public libraries as a knowledge resource centres. The difficulties experienced by users and staff is also highlighted.

Introduction

Public Library as its name suggests, it is for the people, by the people and of the people. It exists from the civilization of mankind and act as the important custodian of human culture, knowledge and social customs. The UNESCO Manifesto on Public Libraries tells that Public library is a living force for education, culture and information and as an essential agent for the fostering of peace and understanding between people and between nations.

The Manifesto also published the aims and objectives of public libraries and revised by IFLA, important few are summarized below:

- To act as a supplementary towards formal and informal education of the country
- To act as information centre and referral point
- To encourage the public libraries to assume the role of initiators and organizer of cultural events
- To provide general leisure materials for the public

The issue of public libraries becoming knowledge centres is one that needs to be addressed by library managers and their funding bodies so that public libraries can continue to contribute to the lifelong learning of the population. A role that has belonged to public libraries since their inception is to disseminate the knowledge to their local needs. If people are unable to use the new technologies that are being developed to access the information they need to survive and to make their lives more enriched, then the new knowledge economy will be open only to those with the financial capability to exploit it.

The public libraries are established and managed by legislation and maintained by public found. The Tamil Nadu state is the pioneer towards the public library movement in the country by enacting first library legislation in the country.

Public Library Movement in Tamil Nadu

A Public Library is tax- supported organization, serving a city, town, country or other local area, which is owned and maintained by the public for utilization of its learning materials for free service to the continuing education, and for recreation. Public Libraries often serve as culture centres with facilities with facilities for meetings, lectures, concerts exhibits and film presentation.

In 1930, Dr. S.R. Ranganathan prepared a model public library act and presented with the help of Honorable Dr. P. Subbrayan the then Minister for Education. The Government under its order sanctioned and distributes grants to the public libraries. Sri. T. Avinasilingam then the Education Minister introduced the Madras Public Libraries Bill in the legislature to provide the establishment organization of a comprehensive rural and urban library services. The Madras Public Library Act adapted 1948 and it was a milestone in the growth of libraries in Tamil Nadu as well as country. The act was published in the fort St. George Gazette on 8th Feb 1949; it came into force from 1st April 1950.

The Connemara Public Library designated as State Central Library and serves to the public of the Tamil Nadu state. The library act has provision for collection of nominal education cess over the property tax. A separate Directorate of Public Libraries was created on 1st August 1972. A Library Reorganization Committee has made some valuable recommendation on December 1976 a separate professional District Library Officer for each Local Library Authority was posted to effective administration of the Public Libraries. And all the Staff members of the Department of Public Libraries are to be paid directly by the Govt.

3. Public Library System in Tamil Nadu

3.1 Library System

The government passed the Public Libraries act in state as early as in 1948 for the establishment and organization of a comprehensive rural and urban library services and the act has provisions for the establishment of State Library Committee, creation of a Directorate of Public Libraries, establishment of an autonomous Local Library Authority. Thus State Central Library, District Central Libraries, Branch Libraries, Mobile Libraries are established in the state. Circle Libraries as a part of public library system has been started in Chennai city and are functioning effectively and significantly with more services than the District Libraries.

The present set up of Public Library System in Tamil Nadu is as follows:

- State Central Library (Connemara Public Library)
- District Central Library
- Circle Libraries
- Branch Libraries
- Mobile Libraries
- Part-time Libraries

3.2 Current Status of Public Library System in Tamil Nadu

As on date, the state has the following Public Library Service units.

- State Central Library –1
- District Central Library – 20
- Branch Libraries – 1568
- Village Libraries – 1492
- Part-time Libraries – 649
- Mobile Libraries – 12

3.3. Library Services

The Public Libraries in the state provide the following types of services to the people:

- Mobile library Service
- Library for Prisoners in Jail
- Library service for Police Personal
- Library service for estate workers and remote scatters on the hills
- Hospital library service
- Rural library service
- Library service for the Blind
- Out reach or part-time library service
- Library service for students library service for scholars and competitors for various services

- MALIBNET (Madras Library Network) GISTNIC (General information of National Informatics Centre) facilities through computers.

3.4 Eight Point Programme

In the recent years, the Directorate of Public Libraries, to provide such broad based services entirely not only depending on library cess collected and the grant by the state government, it has initiated Eight Point Programme to mobilize public support to the Public libraries in Tamil Nadu. The Eight Point Programme is as follows:

1. To Enroll every educated person as a member of the Library
2. To acquire free site for enemy Library in Tamilnadu
3. To fulfill the basic requirements of the libraries such as racks, furniture, and electrical fittings through public donation.
4. To open part-time libraries at the rate of one to each library
5. To get books, newspapers and periodicals through public donation, for every Library
6. To enroll patrons to every Library and develop library movement
7. To house every library in its own building by the end of the twentieth century
8. To give every library for adoption be a bank or a business house for sustained development.

4. ICT application: An Over view

Knowledge that is already available is essential in the general struggle for survival, to keep pace with technology development, for rational planning and intervening in a world, which is becoming smaller and smaller through modern methods of communication. The library is the instrument which collects and make available both knowledge and documents.

Out of the grant made by the government, 20 District Central Libraries are being automated with four nodes and one server. *AutoLib* software has been used for this purpose. It is also to note that a LAN has been established in each library with Windows server 2003 software.

The State Central Library has been automated with well established LAN system. The Digital Library has been initiated with powerful Minolta – 7000 scanners and OCR software. Digital conversion is kept as PDF and Tiff formats and the digital Library is in the progress yet to operate.

4.1 The Barriers for the ICT application

The followings are opined by the professionals who are involved in the applications of ICT in the Public Library System in the state:

- Inadequate fund provisions
- Lack of trained manpower
- Lack of motivation

5. What has changed in the role of public libraries?

What has changed is that public libraries are in the vanguard of the new information technology revolution. What has also changed is that people need to be taught how to navigate the new information in order to get the same knowledge they previously obtained from the printed word.

As the world's system of information becomes digitized and far more accessible through the new technology, it is the new role of public libraries, not only to provide access to the networked information, but to teach people how to get the most value from it and to be discerning in the use of the information they access.

The choice for public libraries is not books or information technology. They must now supplement the printed word with the huge resources available electronically. In so doing, public libraries need to become trainers and learning centres enabling the public, who come to them for information, to access the increasingly wide range of electronic information.

6. Conclusion

The public library system is unable to cope up with the proliferating quick changing Information and Communication Technologies. As a result there exists a vast generation gap among the public libraries of the Indian sub continent with that of the western public libraries. So to over come this, there is a requirement for designing a long range planning and financial allocations. It is also note that the existing Public Library Acts in the several states are in primitive nature and they need drastic immediate revision.

Four basic obstacles may prevent effective participation in lifelong learning: (1) librarians' reluctance to assume a non-traditional role; (2) poor public perception of the library's function; (3) lack of resources; and (4) the absence of an underlying philosophy to serve as a basis for coherent planning. Librarians tend to be uncomfortable with a role that requires advising and counselling... the profession tends to accept services that require a minimum of involvement and interaction.

Public Libraries need to prepare themselves to participate in the knowledge economy and move quickly to supply the existing client base and the potential client base with the skills and opportunities to use the new technology that provides the infrastructure for the gateways to the new knowledge economy.

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Public Libraries as a Community Information / Knowledge Centers in Relation to e-Governance Projects in India: A Case Study of Madhya Pradesh

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ABSTRACT

The paper is based on e-governance projects. E-governance is more than just a government website on the internet. The strategic objectives of e-governance is to support and simplify governance for three parties; government, citizens and business. The use of ICTs can connect all three parties e-governance support and stimulate good governance. Therefore, the objectives of e-governance are similar to the objectives of good governance. Successful e-governance is must for successful democracy many Indian states have started e-governance projects like Bhoomi, Khajane, E-Seva, Card, Fast, Voice, E-Cops, Ultp, Friends, Akshaya, Vidyavahini, Lok-Mitra, Janmitra, Setu, Mahitishakti, Warana Wired Village, Drishtee, Webciti, Mudra etc. Further the paper highlights e-governance projects of M.P. which is second largest state and located in the heart of India. It has a population of over 50 million and is easily accessible from every corner of the country. The central government is funding 10 mission mode projects of the state that pertains to land records, Tranport, Police, Treasuries, Property, Registration, Employment Exchange, Agriculture, Municipalities, Grampanchayat and Commercial Taxes. The result of the investigation of the research suggests that public library shall act community information center/ knowledge center by taking the responsibility of e-governance projects as well it will save the manpower and provide better services. The librarians / information mangers are trained professionally to fulfill the various needs of information as demanded by the users. The objectives of

the e-governance are nothing but to act as information provider to its masses in the community for overall development of the society with pure and free from corruption. The paper also suggests that village libraries should be strengthened with infrastructure so that the e-governance projects may render the services with maximum bridging information divide.

Keywords E-governance, Public Library, Community Information centre

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Public Library : A Dynamic Community Information Centre for the Socio-Cultural Change of Rural Areas in Bangladesh

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ABSTRACT

The area of Bangladesh, which came into existence as an independent state on 16 December 1971, is 147998 sq. km. The public library movement in Bangladesh dates back to the mid 19th century. In 1854, four non-government public libraries were established in the important district head quarters of this region. But the establishment of govt. public libraries started with the opening of the Bangladesh Central Public Library (BCPL) in 1954. Public library is that type of library free to the public community, creed, sex, age, social and educational status, free of charge and either under government control or govt. aided, or by any other non-government authority. Public library works as a basic instrument in promoting peace and understanding and a vital force for education, information and culture, independent decision making, individual development and freedom of expression, supporting reading and ensuring literacy, making available and forms of document and all kinds of information to which the general public has access. Public library is social institution charged with the most important function of disbursing knowledge to the ignorant and the informed alike. The present article also states the concept and objectives of public libraries and their establishment in Bangladesh. Most of the people in Bangladesh live in rural areas. Only public library can change the rural community in their various parts of life. It lends active support to different socio-cultural groups and pro vides them the conducive environment to develop their activities. On the other hand, the author shows the importance of public libraries in the socio-cultural change of their life-style of the rural community in Bangladesh.

Introduction

Bangladesh is a multilingual and multi-cultural society. A large parts of the country's population is rural and constitutes 77% of population and

spread in 68 thousands villages, only 23% of our population live in urban areas. Even after 36 years of our liberation, the rural Bangladesh presents a dismal scenario. The pace of development has been patchy, segmented, imbalanced and lopsided. In spite of government allocating huge resources to rural areas in their respective budgets planned strategies to counter poverty in all the Five Year Plans of Bangladesh, yet the present scenario is far from satisfactory (Jatana, 2003).

The era of evolution of libraries in East Bengal began from the middle of the 19th century. It was the time when upward growth in social, political, industrial and other changes that took place in the society. Immediate after the enactment of the public library act in Britain in 1850, an incentive was created among the philanthropists of the British Bengal to set up public libraries at the private initiative. As an outcome of this eventuality, public libraries were established in this part of the then Bengal i.e. 4 libraries were established in Bogra, Rangpur, Barisal and Jessore. After that public library development was occurred gradually in Bangladesh (Sarker, 2005).

Methodology

To write this paper, the author has consulted relevant literature published in different national and international journals, bulletins and seminar proceedings on public library, rural development and public library development in Bangladesh, public library as community information centre to get some insights into the problems and to know opinions of others in this field. The author also consulted a good number of senior public library experts to draw some recommendations.

Objectives of Public Library

According to Unesco, the objectives which relate to information literacy, education and culture should be at the core of public library services. There objectives are specified as under (Unesco, 1994).

1. Creating and strengthening reading habits in children from an early age.
2. Supporting both individual and self conducted education as well as formal education at all levels.
3. Providing opportunities for personal creative development.
4. Stimulating the imagination and creativity of children and young people.
5. Promoting awareness of cultural heritage, appreciation of the arts, scientific achievements and innovations.
6. Providing access to cultural expressions of all performing arts.
7. Fostering inter-cultural dialogue and favouring cultural diversity.

8. Supporting the oral tradition.
9. Ensuring access for citizens to all sorts of community information.
10. Providing adequate information services to local enterprises, associations and interest groups.
11. Facilitating the development of information and computer literacy skills and.
12. Supporting and participating in library activities and programmes for all age groups and initiating such activities if necessary.

Public Libraries as Institutions of the Masses

Public libraries come up as institutions for the masses where the illiterates were educated with the aid of pictures, stories and demonstrations lecturers and readings from the epics and other literature of our country where the nearly educated were helped to widen their knowledge with the aid of selected books on various subjects and educations through literacy classes was imported to women and children also through magic lantern, puppet shows and theatre, etc. (Begum & Goswami, 2003).

Rural libraries have been established and maintained in several parts of the country by the agencies like Union Parislads, Co-operative Societies, Religious endowments, Youth organizations, Voluntary organizations. On the other hand, the Directorate of Non-formal Education has established Gram-Shikkha Kendra for the rural people.

Public Libraries: Catalytic Change Agent

The role of public libraries in rural areas can be multi-dimensional and may have cascading effect on the overall development scenario. They can act as effective intermediaries. They can provide direct linkage, missing so far between the various agencies meant to take care of villages. Village library can act as a hub for all the activities of a village, whether it is the meeting of the Gram Sarker or the organization of exhibition/show, cultural activities discussions and as dissemination of information related to any new government initiative or schemes.

The primary objective of Grameen (rural) libraries should be dissemination of information, keeping alive the cultural heritage, enhancing vocational competence and encouraging learning, reading and writing amongst the general masses. It is through these public libraries that information could be disseminated to all, irrespective of age. In our villages where a large number of adults are illiterate, this could be the best source of their getting informal education. To meet the above

mentioned objectives the librarian's role in Bangladesh is multifarious in the overall community development.

Public Library and Adult Education

Education plays a vital role in the overall development of an individual; public library should be the living force behind it. It should cover all sections of the society including the illiterate, neo-literate, semiskilled, children and youth, housewives etc. If the public library system reaches the grass roots levels that is villages, the Grameen library will take care of neo-literate and provide them a relevant material. It should create reading habits among the rural people through distribution of books, display of attractive pictures, attractive wall news papers etc. These materials should be related to better techniques of farming, new seed technology, pesticides, good health, family planning programmes, cultural values, small savings arid other activities related to social evils, which will fulfilled the purpose of libraries (Khosla, 2003).

Public Libraries and Social Development

Public library has an important role to play in the national programme of social reconstruction and nation building. A librarian in the rural areas in Bangladesh should not be a custodian of books but also a provider of authentic information.

He/she should interact with the heads or members of Union Parishad, block supervisions, rural bank officers, religious heads, local political leaders, teachers, health assistants and others. Sound rapport with them will make the task easier. Feed back from them can provide relevant information. Public library can develop the character and conduct of the rural people of Bangladesh and gives knowledge regarding social sciences. It can also help care social problems like child marriage, evils of dowry system, superstitions belief, drug addiction, communalism and regionalism and crime against women and so on.

Public Libraries and Cultural Development

Bangladesh is an ancient land with distinct and glorious cultural heritage. Public libraries could be the best source to keep alive country's cultural ethos. Public libraries have now been regarded as cultural centres-be it recreation, education on information. It necessitates on the ground of its services to be rendered to the community as a whole. A Public librarian should know the social structure of his community with which he is concerned and specially the problems involved in the transformation of culture. The public lib plays a vital role in collecting and preserving the cultural heritage of the locality and making it readily available to the people of the locality to enrich its cultural awareness. Libraries could play a major roles by educating people and disseminating information

which could eradicate their superstitions, blind faiths and beliefs traditional rigid dowry related ideas. It could change the peoples mindset regarding widow re-marriage inter caste marriage, child marriage and equality of sex. Public libraries should lay stress on collecting books on 'mythology' giving people on insight of their social and cultural values. In order to facilitate the reach of books to the rural masses, the books should be in the local dialect (Jatana, 2003).

Public Libraries and role of NGO's

Public libraries with the co-operation of NGOs working in the different parts of Bangladesh can play an extremely important role in the upliftment of the socio cultural life of the rural people. They could bridge the gap between the rural masses and the libraries. NGOs study the ground realities, needs and demands of people and could be the best source of providing the requirements of the masses and apprising the same to the libraries. Some leading NGOs in Bangladesh can also play an important role in education for the rural masses about the usefulness of the library.

Distribution of printed material

Print media plays an important role in shaping the psyche and the mindset of the rural people. Information in the form of magazines newspapers and pamphlets constitute an important area of print media. They are mainly devoted to the presentation of country's current information reading the government policies/ schemes to the citizens. All types of news papers can play a vital role informing the public opinions. As the cheapest source of providing information regarding social, political, economic and cultural events, it is the most popular among the mass people of rural Bangladesh.

Role of mass media in changing socio-cultural activities of the rural people

The satellite transmission technology has paved the way of large terrestrial broadcasting. In this field popular cinema, T.V, radio including distance education has become important medium for transmission of information to the rural areas of Bangladesh. They play an extremely important role in moulding and shaping the behaviour of the members of the society. Suitable media/presentation software should be developed which should cover the following:

- Information about the family & child health care to the rural people.
- Documentaries on cultivation practices, preservation of crop and harvesting.
- Updating of market price

- Information regarding culture, handicraft and other traits of the region.

Public libraries based in rural Bangladesh should be provided with complete multimedia gadgets in order to give them an exposure to information technology. At present so called information society, libraries could explore another excellent medium to reach the users home by cable TV which can offer localised community information services.

Public Library and the Information Technology

The use of computers for information storage and retrieval began with the production of computer generated indexes for scientific and technical literature during sixties. By the early seventies several published indexing and abstracting journals such as chemical abstracts, Biological abstracts are made available as computer readable with the databases on magnetic tapes. Since eighties there is an unprecedented development in computer technology. As a result not so expensive computing power is now within the reach of libraries. The tremendous potential of computer can be fully realised through the existing communication and information technology. Information technology is used to describe products and services which improve the efficiency the barriers in the access and dissemination of the information (Raju, 1999). Libraries are the riches source of information for the socio-cultural and economic development of the nation. Information technology plays vital role in the country's programme for development and national reconstruction, particularly in the areas such as spread of education, dissemination of information, utilization of leisure time in useful activities and for all over socio-cultural development. The onslaught of information technology/ techniques has necessitated a change in the role of the library personnel. Multimedia technique could be a very effective media to educate rural masses due to their audio-visual impact. There is a dire need and desirability to automate the public libraries. It can not live in isolation. Sooner or later they have to be computerized and networked in Bangladesh.

Suggestions

The establishment of public libraries should be brought into top priority for rural areas. This will ensure the proper growth and strengthening of public libraries effort should be made to promote and establish model public libraries on the pattern of govt. model schools. Access to information for all specially for the backward classes is essential for joining the mainstream of development in the country. The all important role being played by the NGOs may further be given boost. Mobile libraries should be encouraged by the government in order to access to people in rural areas of Bangladesh. Public library services should be declared as the fundamental right as a follow up of primary education.

Conclusion

The above discussion reveals that public library is a very important social and democratic institution. It plays a significant role in the development of our society. The social progress largely depends on education which is provided to the common people. Public libraries only can play the role efficiently. Bangladesh is lagging behind in appreciating the importance of public library and its role in developing the rural society. To keep pace with the rest of the world, we have a large task ahead. If we fail to give an impetus for develcping public libraries our endeavors in other spheres of life for development may be hampered.

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Public Library as a Community Information/Knowledge Centre: A Case Survey of Ernakulam Public Library

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ABSTRACT

Public libraries have to play a crucial role in the modern society in meeting many of the social needs like communication, education, promotion of literacy, utilization of leisure time, etc. With the introduction of computer networking, the role of public libraries as information centres has increased. Attempts have been made in the present paper to analyze and find out by how much a public library can serve as a community information centre. Results of a study conducted taking the case of Ernakulam Public Library which has got the status of district library as a sample is presented here in the form of a paper.

Keywords: Information, KGS (Kerala Grandhasala Sangham), Ernakulam Public Library (EPL).Public Library, Community Information.

Introduction

A public library is an institution for the dissemination of knowledge, promotion of learning and the advancement of education. It is intended to serve the educational and information needs of all types of readers. It is an institution for the public, by the public and of the public. In almost all countries, the public library services have been re- organized in line with the goals and purpose of the citizens. As aptly called by Alvin Johnson, public library is a "people's university".

A survey of public libraries shows that almost all countries have public libraries where documents are provided for either free of charge or for small subscription. Almost everywhere they were established by charitable bodies, educationalist, social and religious organizations. Public libraries are created and organized to give the maximum and most consequential service possible to the greatest number of citizens. If we

search through the leaves of the history, we will get examples of great men who have been built up by the grassroot service rendered by public libraries. Rashtrakavi Puttapa, Andrew Carnegie who became a millionaire; Thomas Alva Edison et al are some of them.

Objectives of The Study

The objectives of the present study includes to:

- ❖ Have a bird's eye view of public library developments in India.
- ❖ Have a bird's eye view of the history of public libraries and KGS in Kerala.
- ❖ Analyze the functions of pubic libraries.

  Analyze different sections of the society getting benefits of public libraries.
- ❖ Analyze different fields of human development that can get benefits of PLs.
- ❖ Analyze the role of public libraries as a community information center.
- ❖ Find out the following details about EPL:
  - membership(males / females)
  - collection
  - number of books issued per day
  - average number of people visiting the library per day
  - number of people making use of newspaper reading facility per day
  - availability of computerized information retrieval facilities
  - Publications etc.

Public Libraries in India

Even though India has a long and rich tradition in education, scientific research, culture, arts, etc. the pace of development of PLs have been comparatively slow. Our first public libraries were private libraries. The first significant year in the development of PL in India maybe said to be 1808 when the Bombay government initiated a proposal to register libraries which are to be given copies of books published from the

"Funds for the encouragement of Literature". By the middle of the 19th century, the three presidency towns of Bombay, Calcutta and Madras had their public libraries with the active support and initiatives of Europeans in those towns.

The Library Act of Madras, 1948 and the inclusion of the scheme of improvement of library services in the first 5-Year Plan of educational development, 1951-'56 etc are some milestones in the annals of the development of PLs in India.

Literacy and Public Libraries in Kerala

A literary survey shows that in Ernakulam district, 93.49% people are literate and it is the 7th most literate district out of 593 listed in the ' Census of India Report-2001' and all the 14 districts of Kerala fall within the first 24 ranks.

Libraries had been in existence in Kerala from early 19th century. These libraries were established under the initiatives of groups of enlightened people. Trivandrum Public Library was established in 1829 and confined only to the Travancore-government for establishing a free library to be handed over to the public. The EPL came to existence in 1870 and it was opened to the public from its very inception.

Table 1: Some of the public libraries established in Kerala in the 19th century

Name of the PL	Year of establishment
Trivandrum Public Library	1829
Ernakulam Public Library	1870
Trichur Public Library	1873
Kottayam Public Library	1882
Sugunaposhini Vayanasala, Vanchiyoor	1894

The Trivandrum Public Library has now got the status of State Central Library. The State Central Library is run by the state government, district central libraries and taluk or block level libraries are covered by the libraries set up by voluntary organizations. A widespread system of libraries started in Kerala only with the emergence of KGS.

The KGS was started in 1945 as the 'All Travancore Grandhasala Sangham' with a membership of just 47 libraries. With the integration of Travancore and Cochin states in 1949, the name of the Sangham was changed to 'Travancore Cochin Grandhasala Sangham'. After the formation of Kerala state in 1956, it assumed its present title as the 'Kerala Grandhasala Sangham'. A survey shows that there are little more than 6200 affiliated PLs in all in Kerala. The efforts of the KGS remain

as the most glorious chapters in the history of public library movement in India.

Library Legislation

Even before the formation of Kerala state in 1956, there had been attempts to enact library legislation in its constitution units of Travancore and Kochi. But due to many reasons, this dream of the Keralites did not materialize until 1989.

Kerala Public Libraries Act (KPLA), 1989

In 1989, the Kerala Public Libraries Act (KGS Act) was passed by the state legislature and it received the assent of the president in the same year. The framing of the rules had taken place in 1991 and election process was completed only in 1994 and the State Library Council assumed office in April, 1994.

Some of the Functions of a Modern Public Library

- Creation and strengthening of reading habits in children from an early age.
- Supporting both individual and self conducted education at all levels.
- Providing opportunities for personal creative development.
- Stimulating the imagination and creativity of children and young people.
- Providing awareness about our rich cultural heritage.

In general, work for the continued well- being of the society.

PLs and Human Development

Some sections of the society benefited by information provided by PLs and different fields of human development that can be achieved by the services of PLs are given in figures 1 and 2 respectively.

Fig. 1 some sections of the society benefited by information services of PLs

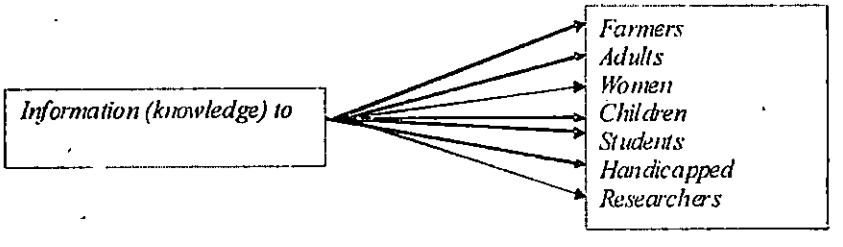
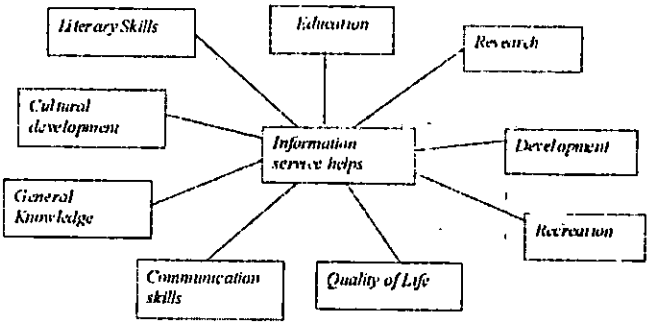


Fig.2 Fields of human development that can be achived by PLs



Information Transfer

Information is a dynamic and unending resource that affects all disciplines and all walks of life. Information transfer can be achieved by audio visual method, distributing news letters, notices etc., giving advices, educational messages, formation of literary groups etc.

To find out by how much the public library can function as a community information center/ knowledge center, a study was conducted in which special reference was given to EPL.

Ernakulam Public Library (EPL)

Established in 1870, situated at the heart, EPL continues to remain as a feather on the crown of 'The Queen of the Arabian Sea – KOCHI'. The library which originally started functioning in a thatched building in 1870 is now housed in a multi- storied building 18,000 sq. ft.(out of which 9,000 sq. ft. is rented out)in the city of Kochi. This library celebrated its centenary in 1970 and 137 years of sustained effort by many dedicated people made the library grow to the present state with a membership of 10,000 and a collection of 1.25 lakhs of volumes to suit the taste and attitude of its users.

MEMBERSHIP

Membership to EPL is given in different groups as given below:

Table 2: Membership details of EPL

Membership				
	Life membership	A Class	B Class	C Class
Entrance Fee (Rs)	10	10	10	10
Deposit (Rs)	5000	1000	500	250
Monthly Fee (Rs)	-	60	30	15
Total (Rs)	5010	1070	540	275
No of Books that can be borrowed	4	4	2	1

About 30% of the members are students and the rest only are others. About 45% are females and 55% males.

Table 3: Category wise Membership

Students	Others
30%	70%

Fig. 3 Category wise Membership

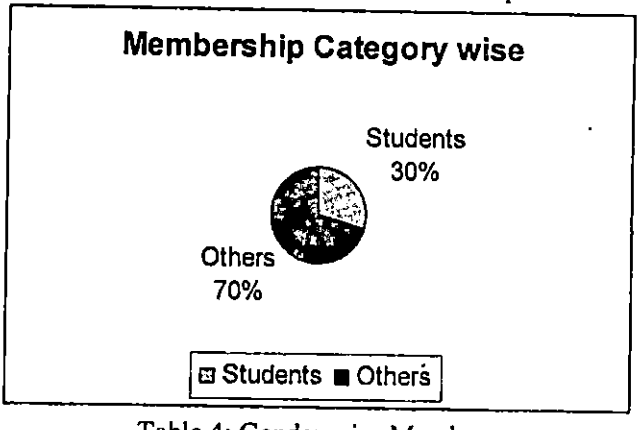
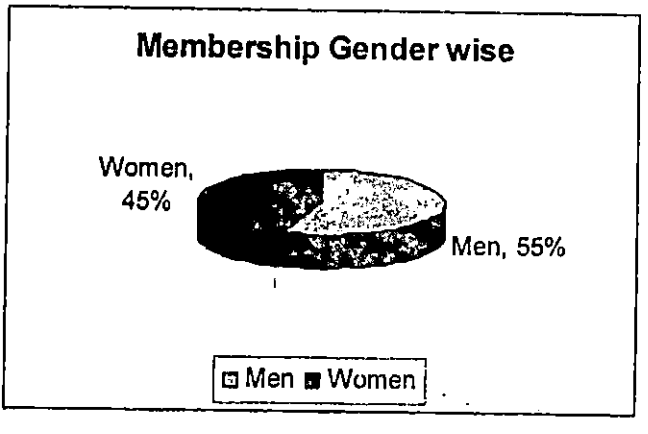


Table 4: Gender wise Members

Men	Women
55%	45%

Fig. 4 Gender wise Members



Working Time

The library and the reading room function on all the seven days of the week except on notified holidays. Library hours are from 10 AM to 7 PM

and the reading room is opened from 8AM to 8PM. The number of holidays in an year is only 18 for the library and 10 for the reading room. It is to be noted that the 355 days of work in the library is done by only 15 library staff.

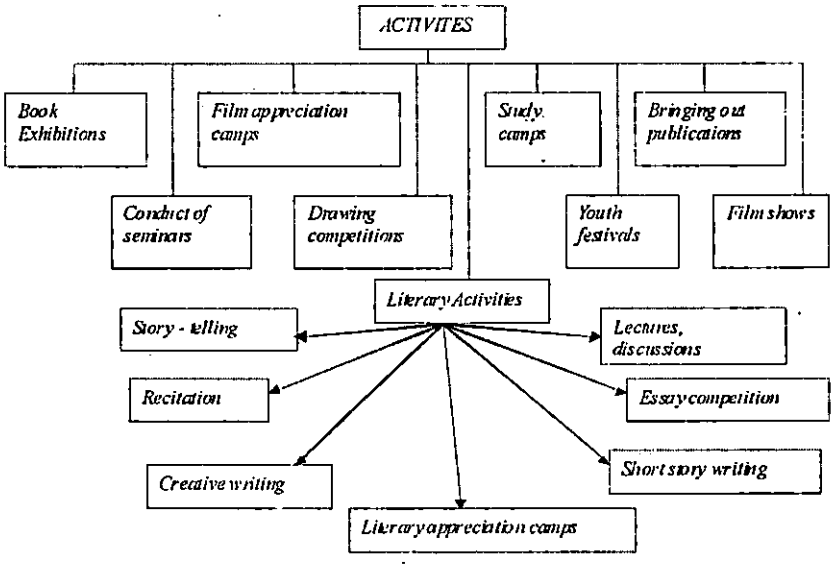
Table 5

No. of visitors of the library per day	500
No. of books referred per day	1000
No. of people reading periodicals / newspapers per day	1000

Information Services Provided By EPL

A public library can work as an information centre in many different ways. Some of the activities conducted by EPL so as to share the information among the public are given below in fig 3

Fig 3: Activities conducted at EPL so as to share the information among the members



Publications

EPL brings out a publication called 'Smaranika' which is a quarterly bulletin of the library. It gives a lot of chances for information transfer and many budding artists develop their skills by contributing articles to the bulletin.

Impact of it on Information Transfer

Nowadays library networks are available among groups of libraries coming together with some agreement of understanding to help each other with a view to satisfy the information needs of their clientele. With the help of networking, it is possible to co ordinate with other regional, national and international exchange of information.

The EPL is not an exemption. This library also has IT devices like computers, CD players, Multimedia projectors, television etc. facilities like LAN, WAN etc. are also available. A survey conducted at EPL shows that even though a lot of activities are undertaken by the library, it can still do more in the near future. The main reason for not having enough IT facilities is nothing but the shortage of funds.

Findings, Suggestions and Conclusions

The following findings have been obtained from the above study:

- PLs are doing a very good service in Kerala.
- KGS is playing a very important role in promoting the service and activities of PLs in Kerala.
- Reading habits of the people of Kerala are comparatively high.
- EPL has been undertaking a lot of activities for the development of the public.
- A very good number of the public (about 1000 per day) make use of the newspapers / periodicals reading facilities at EPL.
- Computerized information retrieval service is provided on selected cases at EPL.
- Satisfaction levels of the users of EPL are found to be a little more than 50%.
- The newspaper reading habits of the Kochiites around EPL is very high. The reason maybe attributed to the fact that Ernakulam is the 7th most literate district in India (Census of India, 2001) and that the public library is situated in the city of Kochi.

The whole -hearted effort of the librarians can do wonders in the development of the country. Let us hope that a network of public library services connecting state libraries, district libraries, taluk libraries, village libraries etc. can be achieved in the near future so that public libraries become the nerve centre for the dissemination of information which is possible only with sincere support from the government.

Therefore the central and the state governments should encourage the developments of public libraries by providing them with more grants.

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Public Library as a Community Information Centre: a Present Scenario in Maharashtra State

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ABSTRACT

Making India one of the fastest developing nations by setting various plans with a vision to eradicate poverty, providing education to all etc. In this context we need to attract attention to give importance for the development of the Library System in general and the Public Library system in particular, as we all know the role Library plays in providing information and also imparting knowledge in any given society. The importance of this knowledge center is very essential to cater to the information needs of all members of the society.

Introduction

Library is a place where a reader is satisfied with full of his / her required information. It is also known as trinity of books, readers and staff. The libraries are of several types. The three i.e. Public, Academic and Special libraries are well known. The library not only serves the readers but also preserves the glorious past with full of literature. It is best school for any type of a man.

Public libraries are the real libraries, which provide information to every type of users without any barrier of discipline, space, and etc. future holds these types of libraries as prominent ones. Thus, these libraries come in direct control of Government.

A pubic library is an institution mean for public, by the public and of the public .It is freely open to every person irrespective of class, creed, colour, age or sex etc.

According to Ronald Benge, the concept of public library consists of four elements. "First, the public libraries are available for loan of materials and for reference purposes to all citizens. Second, the public libraries are mainly supported from public funds either on a local or a national basis. Third, the services should be free to all individuals. Fourth, the material should be made available as an integral part of right.

They provide the user with the documents or information he needs for his responsibilities as a citizen and individual and they organize discussion groups, film show, talks, exhibitions etc. to stimulate his interest in topics which require thought and attention. They provide free service to all without any discrimination based on cast, creed, age, sex or level of literacy and education.

Definitions of Public Library:

As stated in the UNESCO Public Library Manifesto. "The public library is a practical demonstration of democracy's faith in universal education as a continuing and life long process, in the appreciation of the achievement of humanity in knowledge and culture". Thus a public library aims at serving the general public in the community concerned. It is basically a service library. Which is meant to provide free service or charge a nominal fee for its service.

The public library is a social institution. The purpose of which is "to educate" to inform" and "to entertain" the public. Its importance is more than that of formal institution for education, such as schools, colleges, universities etc.

According to the advisory committee for libraries (1959), the internationally accepted definition of public library is that, it is a library. Which:

1. is financed for the most part from the public funds;
2. Charges no fees from the readers and yet it is open for full use to the public without distinction of class, creed or sex;
3. is intended as an auxiliary educational institution providing a means of self education which is endless; and
4. houses learning materials giving reliable information freely without partiality or prejudice on a wide variety of subjects as well satisfy the interest of readers.

Public Libraries in Maharashtra :

Public libraries in Maharashtra are governed by Maharashtra Public Libraries Act, 1967 under the department of education, Government of Maharashtra .In all by end of 2004-2005, there are 7000 Public Libraries in the state are classified into A, B, C and D categories. Public libraries in Maharashtra are providing mainly circulation service for entertainment

with books and periodicals. Few libraries arrange exhibitions, cultural programmes, audiovisual shows, reader's forum, etc.

Table 1. Shows development of public libraries in division wise in Maharashtra State .

Year	Divisions											
	Mumbai				Pune				Nagpur			
	A	B	C	D	A	B	C	D	A	B	C	D
2002-03	46	94	232	268	40	160	449	649	18	73	293	376
2003-04	48	102	235	330	42	180	521	841	20	75	300	470
2004-05	48	102	235	335	51	193	582	958	20	80	310	575

Year	Divisions											
	Aurangabad				Amravati				Nashik			
	A	B	C	D	A	B	C	D	A	B	C	D
2002-03	22	161	501	969	16	118	402	589	33	86	224	299
2003-04	18	134	172	1271	19	131	513	562	33	88	240	325
2004-05	12	111	86	1225	20	142	591	572	37	95	260	360

Year	Total Divisions				
	Total				Total
	A	B	C	D	
2002-03	175	692	2101	3150	6118
2003-04	180	710	2081	3799	6770
2004-05	188	723	2064	4025	7000

Information

Information is the most precious resource or input for development – economic, social, culture, spiritual and political. The economic progress of a country can be gauged by the priority and proportion of budget

allocation made to the R & D exchange of scientific and technical information. Which have played a leading part in historical development of the industrial societies. Advances in knowledge are the result of the two way flow of information among the scientist and the engineers or again between latter and those who are potentially capable of benefiting from such advances or of putting them in use.

Information is vital for the economic and social development of an individual in a society. It enables one to develop one's mind and make sound and mature judgments. Students, farmers, businessmen and professional require specialized information to meet their desired goals. The general public also required information to function as responsible and enlightened citizens. So vital is the need for information that every individual in a community must be provided with the right type of information at the right time in an easily comprehensible format to ensure economic prosperity and social progress.

For an overwhelming majority of the population, the public libraries provide quickest and easiest access to the worlds best thoughts. They are the depositories of ancient as well as modern knowledge. In order to satisfy the bibliographic and information needs of varied user community, public libraries have to be established and systematically organized and provided with adequate resources to effectively carryout their state objectives.

Community Information (CI)

According to Michel Edwards "CI is considered to be that information required by members of the public to make effective use of the resources potentially available to them in the communities in which they live. Such information may be needed to help to solve problems in the fields of housing, disability, household finance, marriage, employment and so on".

Elaine Kempson defined CI as "information for self –reliance & self-determination".

If we study the term "community information" we get combination of two term "community" and "information" where information refers to "Discrete piece of meaningful data which inform people about something" and community refers to "A group of people having common interests" so we can say that community information carries some meaningful data for the people having some common interest thus belonging to the same community. Community Information System (CIS) does not mean providing service to single community identified by

race, caste, sex etc but it refers to a group of community and CIS services are offered by considering the need of everyone within the community.

CIS provide the "common information" to satisfy the "common need" of "common people" of a "community". "Community Information Center" act as a nodal point providing access to the different information resources like information of health, education, human right, from a single window. Information need differ from one man to another and one situation to another and it is not possible for a single system to collect all these information. Various govt. & private organizations collect repackage and disseminate information to the public for there specific need, beside creating their own information resources, public library or community information center can use these resources to satisfy the information need of the respective community.

Role of CIS

Satisfy the information need of common People.

- Reduce the cost of information rendering
- Avoid the duplication of same information.
- It helps in right decision making.
- Helps to react knowledgeably & rationally in all situations
- Helps to know one's own right.

Development of a country mostly depends on sound information infrastructure, proper utilization of existing information and proper information dissemination, which can be possible through community information service.

Changes to Public Library into Information Community Centre:

The changes to Public library into information Community center services consequent upon the development and use of new technology are complex and involve alterations to working practices, working relationships, attitudes, and levels of expertise, as well as technical changes to process and equipment. It is best to view them as manifestations of socio-technical change and however small will also have an effect on the social aspects of the working environment. Both the technological and social aspects are subject to change. Much library and information work forms parts of a service enterprise. Libraries and information workers are intermediaries and their services are considered valuable because users recognize that their work can be made easier through the use of these services. So far it has been suggested that as a manager .The librarian or information worker will have to cope up with a considerable degree of complexity in running the library and information services. Added to this are the technological changes occurring due to the

shift from print based technology to the use of electronic systems and information technology.

Resources of Public Libraries

Public libraries should provide books and reading material to every section of the community without any discrimination of caste, colour, creed, sex, age etc. Not only this they have to care for mental needs of stick, physically and socially handicapped. They have, therefore, gardener and govern a wide collection of books, which meets the needs of cross section of people.

Public libraries have to fulfill educational, recreational and informational needs of its reading community, which makes it necessary to identify what is the resources for public libraries for which it is necessary for public libraries and identify their needs.

Area of variables:

The following variables are covered in this community information service.

1) Total population
2) Literate –illiterate population
3) Sex
4) Rural-urban population
5) Children
6) Young adults
7) Adults and middle aged
8) Senior citizens
9) Aged
10) Physically handicapped
11) Prisoners
12) Patients
13) Religious groups
14) Linguistic groups
15) Workers

To reach at the every resource of public libraries, it is necessary for the public libraries to identify information needs of its community and development the collection accordingly.

Managing Information Resources

Modern information management should be able to guarantee that virtually any document in the universe of available literature or any data contained in documents should be accessible to any member of the user community served. This implies that the " universe of document resources" should be available to the user population of different levels of accessibility. Since no library and information center can own

everything, it is important that the document that is does add to its collection have the greatest probability of being of value to its own users. It is also important, however that the information center should be able to acquire, as rapidly as possible any other document for which there is a legitimate need in the user community, through purchase, photocopying or interlibrary loan. Moreover, in the centers own collections, documents need to be organized according to expected levels of demand, those likely to be used being most accessible.

Role of Librarian or Information Officer in Public Library

The librarian or information officer should know something about his clients for effective information planning. Every library has a unique population to serve .The librarian will want to know who of this potential population, use library services; which services they use, how frequently and for what purpose; whether and how non-users can be drawn into the library's sphere of influence. He will also be curious about how the library fits into the general pattern of information flow and communication. The answer to all these queries will be specific to the library in question. Public libraries have a wider audience that any other type of library; yet even here, different libraries play different roles.

Strategy of Information Planning:

According to their disciplines, concepts of values and roles in society, users have different levels of requirement. Until users draw upon this body of records and knowledge. It cannot be said to be information in any dynamic sense; custodians down the centuries have sought both to preserve these resources and make them available at the same time. However, making them available in terms of physical access must be distinguished from intellectual access.

User's Requirement

Librarians have traditionally sought to assist the users in two ways. The first is by providing an end product in the shape of information required by the users. This is reference work whereby all necessary citations, monographs and similar materials are place before the reader.

The second is by providing guidance to readers through the various retrieval systems but essentially leaving to the reader the responsibility for finding the required material. A library has much in common concerning user needs, but in addition there are special problems.

Assessing the Needs

Librarians have traditionally been function as information transfer agents. They have gathered up data, stored it and waited for someone to come along who wanted to know. Today we are faced with a society

dependent upon a technology; which thrives, on speed and with that speed goes social change. And if society cannot find the information it needs to know to meet the accelerated pace of decision making, technology becomes useless. To cater to the needs of their clients, librarians will benefit greatly from each other's experience.

User Expectations and Information Technology

A public library should be able to supply information to the right users in the right form at the right time by employing modern technology. Public libraries should be equipped with computers to automate all library activities. For effective management and administration Information technology should also be used in every public library. Computer networks can help end users share resources, ideas, and knowledge electronically and communicate with the users worldwide. Paper documents should gradually be replaced with electronic formats wherever possible. Every public library should acquire these technologies to meet the complex demands of the user and also to deal with space problems in the library.

Uses of Information for Decision Making

The modern age belongs to science and technology. Hence information technology plays a major and vital role in achieving social, culture, and political and economic goals of every country. There is no doubt that information has an impact on virtually every facets of our daily lives including our work, leisure, transportation, communication and general welfare. Scientific information embodies not only the heritage of men's verified knowledge, but also the current records.

On the basis needs the rural people especially the farmers, and business communities have to be provided with bibliographic information on topics of their interest exhaustively and expeditiously. Towards this end the public library units with appropriate stock of reading materials have to be established in rural areas.

The following suggestions are made to strengthen the rural public library system.

1) Design of a Master Plan

The Government shall prepare a master plan for the development of public libraries in the state. The contents of the master plan shall include two essential factors. Viz. spread of public library units in urban and rural areas and also the consolidation of existing libraries, whereby each public library unit improves its book stock.

2) Development of the Public Library System:

A public library system envisages grouping of various public library units and providing linkages among them. It will be an integrated statewide network of public libraries. It allows for free flow of bibliographic resources and services among various public library units. It is suggested that the public library units in the state from the State Central Library to the village libraries need to be linked to one another, so that it results in a hierarchical structure. The public libraries in each category function under the control of library unit in the next upper layer in the hierarchy.

3) Effective Role of The State Central Public Library

The State Central Public Library which holds apex position in the system has a vital role to play in areas such as:

a. Centralized classification and cataloguing of books. Before the books are supplied to the branch /village libraries. They have to be provided with classification number and the catalogue cards prepared, so that the receiving libraries have to file the catalogue cards.

b. Reference /information services .the village /branch libraries, which cannot answer information /reference queries from their stock of books, shall forward the same to the state central library through regional libraries. The state central library upon the receipt of such queries shall immediately respond to such demands. The state central library shall also supply Xerox copies of articles from books and journals on the topics of special interest.

c. Village public libraries should connect to the State Central Library by network. So village/rural people can get information of their interest by online interface.

Conclusion

According to UNESCO's main strategy in the area of information consist of awareness – rising about importance of information at all levels of the education and public libraries through its various services can play a significant role in changing the society\into a true information community. Such type of community information service will be fruitful only when relevant and authentic information is collected in an organized manner. Proper user orientation programmed is also required so that user will came to know that such type of information are available for them. It is the best way to prove the potentiality of public library and its librarians, through this type of services librarians can play a major role within their community and can perform their social responsibility seriously.

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The Use Pattern of Public Library Services A Survey of Sri Gowthami Regional Public Library

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ABSTRACT

Libraries are mainly entrusted with a host of predetermined tasks like acquiring, organizing, preserving, retrieving and disseminating information to the used. The Present study seeks user's opinion and service pattern of Sri Gowthami regional library.

Key Words: Public Library System, Utilisation, Services.

Introduction

The public library is a living, force for popular education and for the growth of international understanding and there by for the promotion of peace. The public library is a product of modern democracy and practical demonstration for democracy's faith in universal education as a life long process. As a democratic institution operated by the people, the public library should be established and maintained under clear authority of law, supported wholly or mainly from public funds, opened for free use on equal terms to all members of the community regardless of occupation, creed, class or race.

The Public library of today is fulfill and meet the educational, cultural and informational needs of the public through print & non – print materials. We can trace out different types of libraries that are organized for catering to the requirements of different communities of clientele in a country. Public library is one of them which is open to all irrespective of age, profession, race, sex, colour and in it there is free access to any literature required.

Objectives

The objectives of the present study were :

- To study the use pattern of Sri Gowthami Regional Library, Rajahmundry.

- To know the users purpose of visiting the library
- To know the regarding books and magazine collections of the library
- To asses the opinion on internet services in the library
- To asses the opinion of the users about the overall performance of the library.

Methodology

The present study aimed at as pertaining the use patterns of Sri Gowthami Regional Library, Rajahmundry evaluating the usefulness of the services provided by the library.

Sample Selection

The study adopted random sampling technique and surveyed 300 people who visited the library at different time intervals during the period of study.

Collection of Data

For the purpose of case study, information has been collected from the library records, Annual Reports, thorough discussion with the librarian & library staffs & personal observation.

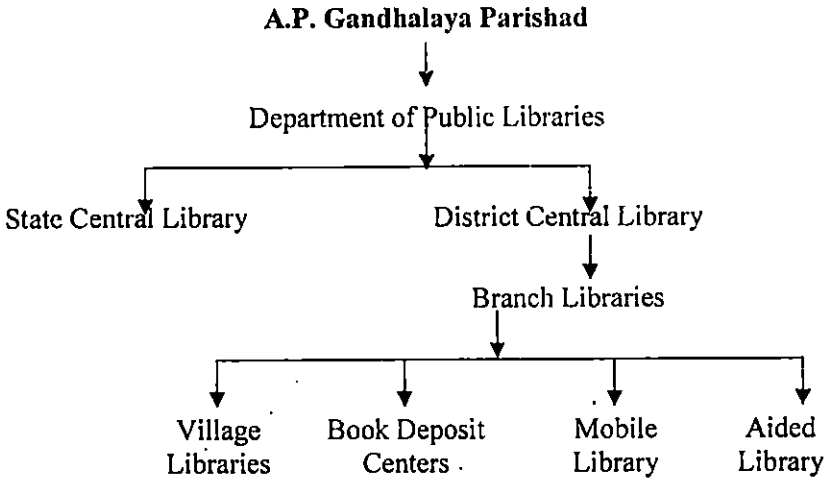
A questionnaire (Appendix) was circulated amongst the user's at the time of their visit to the library between 30/07/07 to 19/08/07. This was done on different days of weeks at different hours. Twenty percent of the population was taken as sample from the total strength of the borrowers. A total of 300 questionnaires were distributed to users out of which 264 (88%) were responded.

Public Library System in Andhra Pradesh

Public libraries in India, came into existence based on the Public Library legislation. Out of the 29 states and 6 union territories, only 12 states have so far passed the library services are rendered through the provision of the AP Public Library Act of 1960. The public library system of AP consists of a State Central Library at Hyderabad, capital city of state, 6 Government Regional Libraries, 23 District Central Libraries and 2348 village libraries, branch libraries, mobile libraries and book deposit centers and 1455 other libraries. Thus nearly 5000 public libraries provide the services in the state. The present structure of the public library system was based on the AP Public Library Act to provide library services to the urban and rural population of the state covering a population of 3285092. In 1989, the state government constituted an apex body known as "Grandhalaya Parishad" (means Library Board) by amending the existing APPL Act, 1960. At the district level, District Central Libraries(DCLs) were constituted under section 9 (1) of the Act

which states that each municipal town having more than 50,000 population should have a main library. There should be an addition of a branch library for every 25,000 people in excess of 50,000. As per this month, main libraries have been opened in 92 municipal cities and towns.

A.P. LIBRARY SYSTEM CHART



Number of Public Libraries in A.P.

Sl. No	Types of Libraries	No. of Libraries	Total
1.	a) Govt Libraries	1	8
	b) Regional Library (Guntur, Nizambad, Rajahmundry, Tirupathi, Visakhapatnam, Warangal)	6	
	c) Mobile Library (Eluru)	1	
2.	Libraries Under Zilla Grandhalaya Samstha	23	1766
	District Central Library		
	City Central Library (Hyderabad)		
	Branch Libraries	797	
	Mobile Libraries	2	
	Village Libraries	362	
	Book Deposit Centers	582	
3.	Aided Libraries		2353
	Grampanchyat Libraries (Mandal Parjapatishat Libraries)	1531	
	Co – Operative Society Libraries	67	
	Private Management Libraries	755	
	Total		**4127**

Profile of Rajahmundry City

The erstwhile name of Rajahmundry was Rajamahendri (or) Raja Mahendravaram. It is the headquarters of East Godavari District and also the biggest town in it. It lies on left bank of the Godavari and has two railway Stations namely "Godavari" and "Rajahmundry" Howrah Chennai Railway line passes through the town longitudinally. The bridge constructed on the Godavari river. Linking Kovvur and Rajahmundry allows bimodal transport i.e., road way and railway. It is considered as a marvelous engineering feat and is the second largest road and rail bridge in Asia. It has a population of about 3 lakhs with an average literacy of 70%. Rajahmundry is a place having historical significant too. Many great personalities like Nannaya. The poet laurate who was called "Adi Kavi" of Telugu and Kandukuri Verresalingam a social Reformer and author of "Rajasekhara Charithra" first telugu novel, belonged to this place. It has the "Mahatma Gandhi" cloth complex which is one of the biggest shopping complex in Andhra Pradesh. The City also hosted a few corporate and multinational organizations such as ITC LTD, ILTD Division, A.P. Paper Mills, oil and Natural Gas Corporation (ONGC), CTRI (Central Tobacco Research Institute) Headquarters etc. as a part of its industrial development.

Rahamundry is also the abode of many educational institutions like the Nannaya University and Autonomous Arts college and also the national wide reputed institution namely university of Petroleum Energy studies (UPES) Which is present only in a few other centers in India. Godavari Institute of Engineering and Technology (GIET) the famous institution offering education in engineering along with various other fields like Biotechnology and Master of Computer Applications (MCA).

Profile of Sri Gowthami Regional Library

The Library evolved from the Personal collection of a poet, Nalam Krishna Rao, in 1898. It was called "Vasuraya Grandhalayam" initially and later came to be know as "Veerasalingam Pustaka Bhandagaram" In 1979, in response to an agition, the State Government took over and accorded it the status of a regional library. The library holds collection of 82,290 books in Telugu, English, Hindi, and Sanskrit Languages. Library provide Lending, Reference, News Paper, Magazine Service. This Regional Library covers East & West Godavari, Krishna District. Gowthami Library had Manual Scripts, Copper Plates, Bharathi Magazine.

Survey Findings

As described in the previous sections, as regional public library Sri Gowthami Regional Library is surveying not only the population of Rajahmundry but also many researchers coming from different parts of

the country. In order to collection know the opinions of users about various and services offered by the library. A survey of users of this library has been conducted. A questionnaire was prepared. Areas covered in the questionnaire include frequency of visits to the library, purpose of using the library, reasons for not using the library regularly, extent of availability of required its in the library, opinions about the library services, suggestions regarding improving the existing collection and services, demand for new services, willingness to pay for services and opinion on overall satisfaction level of users about the library as a whole.

This section presents the data collected in the form of tables and analysis the findings in the form of percentages. A graphical presentation of the data also has been done where ever necessary to present the findings in a more effective manner.

Frequency of use:

The extent of use of the library depends on various factors. One of the measure to assess the frequency of use is to assess the nature of frequency of visits made to the library by the user. Following table presents the data on frequency of visits to the library by the respondents.

Table 1: Frequency of Visits

Frequency of Visits	Number of Respondents
Daily	93 (35.24)
Weekly	105 (39.77)
Monthly	30 (11.36)
Once in 3 Months	36 (13.63)
Total	264 (100)

The frequency of visits to the library by users depended upon the nature of library, its collection, organization and maintenance. Table 1 indicates that majority of the users visited the regional library weekly once (39%) followed by made daily (35%). Significant person (13%) of users found to be visiting the library once in three months.

Factors that discourage the use of the library

In spite of having various information requirements and necessity to refer the library, many of the user will not utilize the services of public library

for many reasons. Following table shows details on this aspect of the study.

Table 2: Factors which discourage the use of library

Factors	No. of Respondents
Lack of transportation	0 (0)
Inadequate Library Service	27 (10.25)
Library Timings are in Convenient	129 (48.86)
Inadequate collection	39 (14.77)
Physical disability	15 (5.68)
Do not read library books regularly	51 (19.31)
Others	3 (1.13)
Total	264 (100)

It is evident from table 2, the library timings are the main hurdle that effecting the library use. Nearly 49% of the users expressed the opinion that the library opening and closing hours are not convenient. Another important reason found to be influencing the library use is the decreasing book reading habit among the users (19%) nearly (15%) felt that the existing collection of books is in adequate in form of number, coverage and occurency. None of the users pointed out the location of the library.

Purpose of using the library

The present study has also attempted to find out the reasons for using the library. Table 3 shows the details.

Table 3: Library Usage

Purpose of Using Library	No. of Respondents
Information on current events	42 (15.95)
Information of materials related to work / Career	39 (14.77)
Hobby / Personal interest	57 (21.59)

School / College assignments	42 (15.90)
Reading for enjoyment	18 (6.81)
Health information	0
Job Information	60 (22.72)
Legal Information	0
Banking Information	3 (1.13)
Other	3 (1.13)
Total	264 (100)

Analysis of data in table 3, indicates the majority of the users (22%) are using the library in search of job information. The highest percent of users (21%) are visiting the library out of personal interest and as a hobby. Nearly (16%) of the users are using the library for information on current affairs and also for the purpose academic assignments. For the sake of work related information, nearly (15%) of the users coming to the library.

Degree of Availability of Required Items

Availability and Accessibility of library materials play very important role in deciding the effectiveness and use of the library. Table 4 presents data related to the extent of availability of library books or information as perceived by the uses.

Table 4: Degree of Availability of Books (or) formation in the Library

Availability	No. of Respondents
Never	9 (3.43)
Seldom	51 (19.31)
Usually	111 (42.04)
Always	93 (35.22)
Total	264 (100)

The analysis of data reveals interesting findings. Majority (42%) felt that usually the required books are available in the library. 35% stated that always they are successful in getting the required books from the library. Only 3% complained that they never found the information they wanted in the library.

Rating of Library Collection

It is the primary responsibility of any library to develop collections that are user need oriented. Depending on their usefulness, the library users are asked to rate them. The following table shows the ratings given by the users.

Table 5: rating for services.

Service	No. of Respondents					Total
	Excellent	Good	Fair	Poor	Don't Know	
Reference Collection	42 (15.93)	27 (10.22)	69 (26.13)	81 (30.68)	45 (17.04)	264 (100)
News Papers	9 (3.43)	21 (7.95)	36 (13.63)	93 (35.22)	105 (39.77)	264 (100)
Magazine	21 (7.97)	30 11.36)	81 30.67)	87 (32.95)	45 (17.04)	264 (100)
Fiction Collection	135 (51.16)	39 (14.77)	51 (19.31)	21 (7.95)	18 (6.81)	264 (100)
Manuscript	141 (53.88)	18 (6.81)	51 (19.31)	21 (7.95)	33 (12.5)	264 (100)

The findings on user rating of different collections in the library reveal interesting facts. Among different collections, manuscript collection in the library has been rated as excellent by the users (54%). The second place was occupied by fiction collection with (51%). Among those items rated as poor, the newspaper collections were considered to be poor by majority (35%) of the users both magazines (33%) and reference collection (30%) have also been rated as poor collection by significant percent of the user.

Suggestions for Improvement

The present study has also tried to seek suggestion from users regarding different areas for improving the existing facility. Table 6 present the details covering various suggestions from users.

Table 6: Suggestions for improvement

Suggestions	No. of Respondents
More books for adult	24 (9.14)
More books for youth	48 (18.18)
More books for children	3 (1.13)
More audio/video/cd Collection	12 (4.54)
More business/financial references	9 (3.40)
More scientific/technical reference	51 (19.31)
Exclusive collection for women	3 (1.13)
Programmes for adults	0 (0)
Programmes for children	9 (3.40)
More books for competitive	105 (39.77)
Total	264 (100)

Majority of the users requested for improving collections that help the unemployed students to appear for competitive examination. The second highest percent (19%) of them suggested to add more number of reference books in science and technology. Another request made by (18%) of the users is for increasing the number of that satisfy the interests of youth.

Suggestions Regarding Facilities and Services

To know the demands of users for IT based services and other facilities in the library suggestions were asked from users. Table 7 shows various new services demanded by users.

Table 7: Extended electronic service required in the library with the existing one

Electronic Service	No. of Respondents
Library's OPAC	57 (21.62)
Xerox facility	45 (17.04)
Computer for public use	51 (19.31)
Internet browsing facility	75 (28.40)
Online access to other library cataloguing in the city	33 (12.5)
Access to E – Journals	03 (1.13)
Total	264 (100)

It may be observed form the table 7 that majority of the users (28%) wanted internet access to be provided by the library. Provision of computers for general use is also one of the requests from (19%) of users. The second highest percent of users requested the library to create a library OPAC. Significant percent of users demanded for the provision of Xerox facility in the library.

Charges for Services

Since the library is not having separate budget for providing new and I.T.based services the users were asked to indicate their opinion on charging the services. The following table indicates user's opinion in this regard.

Table 8: Chargers for services

Willingness to pay for services	Responses
Yes	67 (25.37)
No	197 (74.63)
Total	264 (100)

Majority of the users nearly (75%) are not willing to pay for the new and IT based services, if charged by the library. However they stated that they accept an increase in the membership fee.

Satisfaction Levels About the Overall Functioning of the Library

The study also wanted to know how far the users are satisfied with the library and its services as a whole. The data revealing the users responses is presented in the following table.

Table 9: Users opinion

Users opinion	Response
Satisfied	245 (92.80)
Not satisfied	19 (7.20)
Total	264 (100)

Table 9 indicates that (93%) of users are satisfied with the library services only (7.20%) of the expressed their unhappiness about the library services.

Findings

Major findings of the survey are

- A majority of users visited the library weekly once.
- Nearly half of the users expressed library timings are inconvenient.
- The maximum users of the library are seeking job information.
- Highest percentage of the users expressed that the required books are available in the library.
- Half of the users rated Manual script service as excellent.
- Majority of the users expressed that they require internet access in the library.
- Most of users are not willing to pay for new I.T. based services.
- Maximum users satisfied with overall library services.

Suggestions

Based on the findings of the study. The following suggestions were recommended to improve the use of the library service.

- The library working hours should be altered keeping in view the suggestion from the user population to encourage

proper use of the library collection, a regular catalogue need to be maintained.

- Books should be kept in proper racks.
- Internet, Xerox facility is required in the library.
- More staff should be appointed in the library.

Conclusion

In the present study, opinions of the user were collected regarding the Sri Gowthami Regional Library. Internet is a boon to the user community. Provision access to internet opens the doors for user to global information sources. Since the costs of computers and internet access have reduced greater extent the management can think about providing these facilities to users. Majority of the users are satisfied with the library services. However they wanted the present facilities may be extended to include internet, Xerox, opac facilities. The library users are found to be having clear idea about the collections. Their opinion about collections reveals both strengths and weakness of the existing collection.

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Use and Awareness Survey of Electronic Resources: A Case of Study Engineering and Technological Institutes of India

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ABSTRACT

The paper focuses on the use and awareness of e-resources in Indian Institutes of Engineering & Technology in India. These days due to increase of subscription of e-journals, every institute is reducing subscription of printed journals, this requires a study to know the awareness and usage of e-journals among the students and faculty of that institute. In this direction a survey was conducted in 2005-06 in four prestigious institutes of Engineering and Technology of India. Questionnaire method was used to study the usage and awareness. The result demonstrates that those institutes e-library is used most whose users are more aware of their library e-resources and they used e-resources more as compared to print documents. Although they prefer to search through e-information as to save time but interested to read through print material. It has been found that users trying using electronic information resources.

Key Words: Electronic Resources, Use, Usage, awareness.

Introduction

An electronic communication revolution has brought dynamic changes in academic libraries for providing information and dissemination of knowledge to its end user's. Today libraries are no more occupied with traditional printed collections but also having electronic resources. The large amount is being spent on these resources, so as to provide up to

date information to its users. The value of information resources increase by using and therefore it is important to know the usage of electronic resources and their awareness among users.

Overview of Electronic Library Resources

In Indian Institute of Technology (I.I.T.), Delhi library electronic resources are available through INDEST (Indian National Digital library in Engineering Science & Technology) consortium. The library is also a member of DELNET .The users have access to 6,500 full text e-journals and 6 bibliographic databases. The library subscribes to 615 current journals and several of them are also accessible online from the publisher's web site. The full text electronic journals are available through the library web site, Libsys web OPAC. User's can have access to electronic books from Elsevier series through the science direct platform (http; //www. science direct.com). The CDs that comes along with books can also be accessed through CD-Mirror server. Many other resources like Encyclopedias, databases, Conferences Proceedings, e-books can be searched through the web site http;//www.iitd.ac.in.inlibrary/resource/cd mirror .html.

The e-resources in the **Indian Institute of Technology (I.I.T), Roorkee** are available also through INDEST consortium; more than 8000 e-journals can be accessed through http://192.168.125.5 and http;11192.168.121.13. For providing latest information to its users the library has made arrangement to provide internet search access to its users with the help of 50 user systems. Users can also have access to on line journals. There is provision of access to complete set of about 650 non-medical Kluwer journals. The CD-ROM services/on line data bases are also available for access. The CD-ROM's available with the library are compendex plus, metadex & materials abstracts, biotechnology abstracts, Math Sci., Inspec Ondisc, International Civil Engineering abstract, Energy & environment abstract and water resources abstract.

The Thapar University (TU), Patiala, Library subscribes to various e-journals through UGC INFONET and has database of electronic theses and dissertations of TU students

- Bibliographic Databases like Engineering Index Compendex (1988 onwards), BIOSIS (1995 onwards) Chemical Abstracts (1907 onwards):
- Electronic Journals more than 3000 full text electronic journals.
- Subject gateways links to important evaluated resources on the internet for researches in various disciplines.

Punjab Engineering College (PEC), Chandigarh Library is members of INDEST consortium under the ministry of HRD. This consortium offers online access to a number of technical journals through portals such as, IEL online, ASCE, ASM, Directory of open access journals, and BSU journals in chemistry, EEVL (engineering, math and computer science).

The library is also housed with approximately 450 CDs and 50 video cassettes.

Objective of the Study

There has been an obvious lack of studies to know the use of electronic information resources by users in technical institute library. The main objectives of this study are find out the following:

- To know the awareness and use of electronic resources by the users.

Scope

The scope of the present study is limited to the Indian Institutes of technology in India. The following institutes have been taken up for collecting the data and to study the use and awareness of e-resources by users.

1. Indian Institute of Technology, (I.I.T.), Delhi
2. Indian Institute of Technology, (I.I.T.) Roorkee
3. Thapar University (Formerly Thapar Indian Institute of Engineering and Technology), Patiala

   and

4. Punjab Engineering College, (PEC) (Deemed University) Chandigarh

The present study will help institutes understand advantage of using electronic resources, and motivate them to implement/ update their resources/libraries accordingly in the interest of their students, faculty and other users.

Methodology

Observation and questionnaire method was used for which a questionnaire was prepared and used as a tool for collection of data. Stratified random sample method was used, 20 percent sample was collected from the four institutes taken for the survey. The questionnaire was administrated personally to the users.

Table-1
Institutions wise distributions of Data

Level of Institutes	I.I.T, Delhi	I.I.T, Roorkee	TU, Patiala	PEC, Chandigarh	Total
Total population of users	4885	4363	2506	2056	13810
Questionnaires distributed	977	873	501	411	2762
Response received	825	623	485	389	2322

The table 1 shows that total population of all the four institutes was 13810. The questionnaires distributed to the users were 2762 and response received 2322. The data indicates that I.I.T., Delhi population was 4885, the questionnaires were distributed to 977 users and response received was 825. From the population of 4363 at I.I.T., Roorkee, the questionnaires was distributed to 873 and response received 623. The population of TU, Patiala was 2506, questionnaires were distributed to 501 and response received 485, while at PEC, Chandigarh population was 2056, 411 questionnaires were distributed and response received was 389.

Analysis and discussion

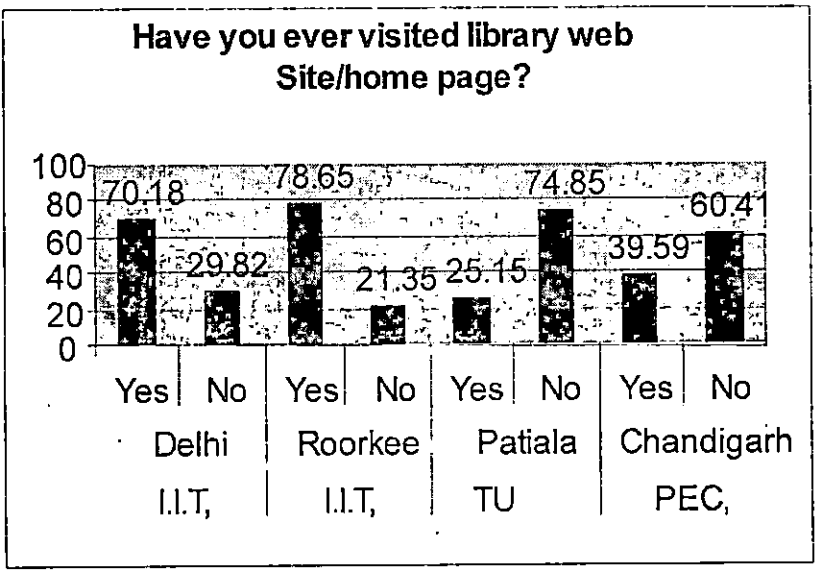
The collected data has been analyzed with the help of SPSS statistical software. This paper gives the results of the total numbers of users using the e-resources. The results are shown in percentages and some of the findings have been presented. This study is the small part of survey done in the last two years (2005 and 2006).

Have you ever visited library webpage/home page?

Table-2

I.I.T, Delhi		I.I.T, Roorkee		TU, Patiala		P.E.C, Chandigarh		Total	
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
579 (70.18)	246 (29.82)	490 (78.65)	133 (21.35)	122 (25.15)	363 (74.85)	154 (39.59)	235 (60.41)	1345 (57.92)	977 (42.08)

Figure-1



From **figure-1** the libraries are having their home page websites from which the information about the e-resources and services to their users is provided. The libraries are also producing current information on new addition to their collection. The users were asked whether they have visited their library websites homepage. The results indicates that 579 (70.18%) users from IIT, Delhi, 490 (78.65%) from IIT, Roorkee, 122 (25.15%) from Thapar university, Patiala and 154 (39.59%) from PEC, Chandigarh response positively.

It has been found that users from both the I.I.T's have visited their library website /homepage more as compared to users from TU, Patiala and PEC, Chandigarh.

The results show from the total population of the four institutes that 1345 (57.92%) users have visited library website home page and 977 (42.08%) users have not visited.

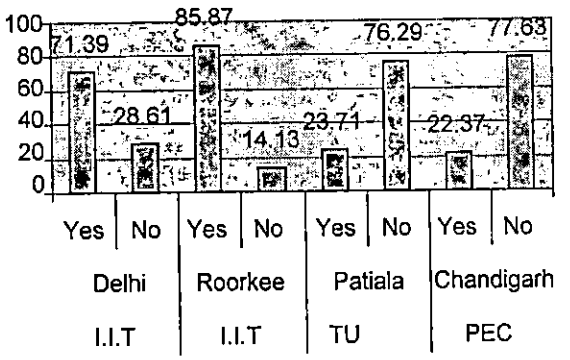
Are you aware of e-resources subscribed by your Institute?

Table-3

I.I.T, Delhi		I.I.T, Roorkee		TU, Patiala		P.E.C, Chandigarh		Total	
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
589 (71.39)	236 (28.61)	535 (85.87)	88 (14.13)	115 23 71	370 76.29	87 (22.37)	302 (77.63)	1326 (57.10)	996 (42.90)

Figure-2

Are you aware of e-resources subscribed by your institute?



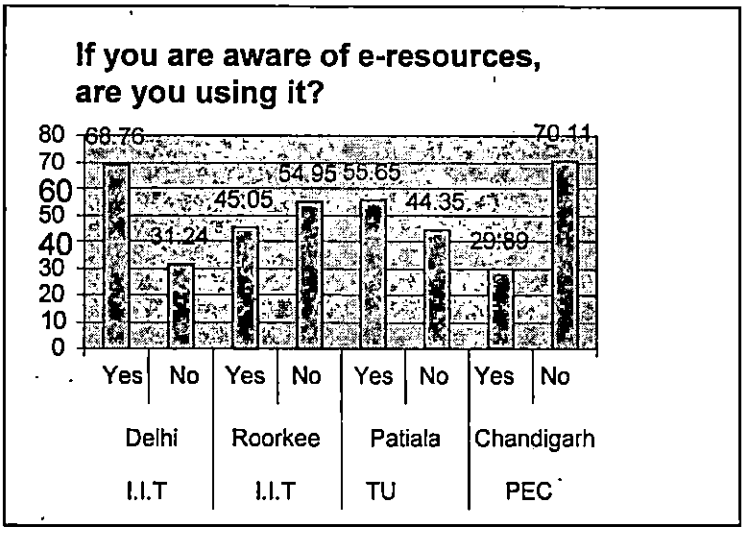
From the figure-2 the data indicates that 589 users (71.39%) from IIT Delhi, 535 users (85.87%) from IIT, Roorkee while 115 users (23.71%) from TU, Patiala and 87(22.37%) from PEC, Chandigarh were aware of their institute e-resources consortium subscribed by their institute library .The results shows that users form both the I.I.T's were more aware as compared to users from TU and PEC. It has been found from the total users data that 1326(57.10%) of them were aware of e-resources consortium and 996(42.89%) were not were of it.

If you are aware of your institute's library e-resources, are you using it?

Table-4

I.I.T, Delhi		I.I.T, Roorkee		TU, Patiala		P.E.C, Chandigarh		Total	
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
405 (68.76)	184 (31.24)	241 (45.05)	294 (54.95)	64 55.65	51 44.35	26 (29.89)	61 (70.11)	736 (55.50)	590 (44.50)

Figure-3



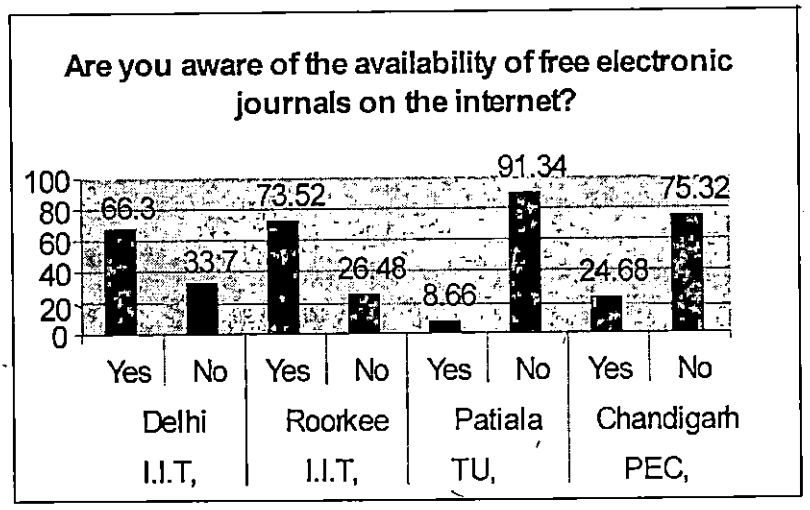
The figure -3 shows who were aware of e-resources and the percentage of users using it. 405(68.76%) users form IIT Delhi response to positive and 184(31.24%) gave negative response. The users from IIT Roorkee 241(45.05%) were using their e-resources and 294(54.95%) users were not using it, 64 users (55.65%) from TU, Patiala responded yes and 51(44.35%) responded no While 26 (29.89%) users from PEC, Chandigarh answered yes and 61(70.11%) users answered no. The results shows that total 672 users (55.49%) were only using e-resources consortium and 539 users (44.51%) said they did not use it.

Are you aware of availability of free Electronic journals on the internet?

Table-5

I.I.T, Delhi		I.I.T, Roorkee		TU, Patiala		P.E.C, Chandigarh		Total	
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
547 (66.30)	278 (33.70)	458 (73.52)	165 (26.48)	42 (8.66)	443 (91.34)	96 (24.68)	293 (75.32)	1143 (49.22)	1179 (50.78)

Figure-4



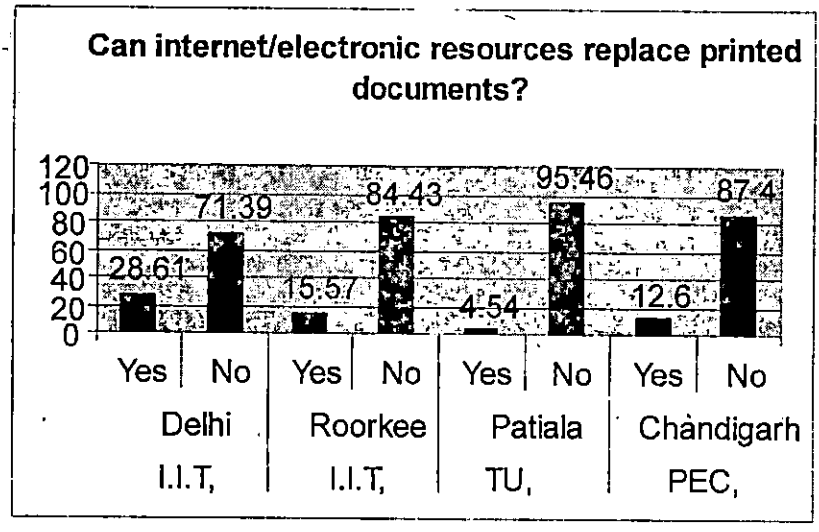
There are several free e journal portals on the internet which can be browsed any time. 547(66.30%) users from IIT Delhi were aware of available of free e-journal on the net and 278(33.70%) of users were not aware of it. From IIT, Roorkee 458(73.52%) users were aware and 165(26.48%) of users were not aware of it. Users 42(8.66%) from Thapar university, Patiala were aware of free e-journals and 443(91.34%) of users answered in negative. 96 (24.68%) of users from PEC response positively and 293(75.32%) of users response were negative. From the total population the result shows that 1143(49.22%) of users were aware of free e-journals portals on the net and 1179(50.78%) users were not aware of it.

5. Can Internet /Electronic resources replace print document?

Table-6

I.I.T, Delhi		I.I.T, Roorkee		TU, Patiala		P.E.C, Chandigarh		Total	
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
236 (28.61)	589 (71.39)	97 (15.57)	526 (84.43)	22 (4.54)	463 (95.46)	49 (12.60)	340 (87.40)	404 (17.39)	1918 (82.60)

Figure 5



From figure-5 the data indicated that 236 users from IIT Delhi (28.61%) answered yes, while 589(71.39%) answered no. 97(15.51%) users form IIT, Roorkee response was yes and 526(84.43%) response was no. In Thapar University Patiala 22 users 4.54% said they feel that electronic resources can replace printed document while 340(87.40%) said they did not feel so. 49 users from PEC, Chandigarh (12.60%) answered yes and 340(87.40%) users answered no.

The results indicated that out of 2322 users 404(17.39%) response positively and 1918(82.60%) response negatively.

Findings

1. It has bee found that users from both the IIT's users have visited their library website/home page as compared to users from Thapar university, Patiala and PEC, Chandigarh.
2. Also, majority of users from both the IITs were more aware of their library e-resources compared to Thapar University and PEC. The users who are aware of their library e-resources were also using it. It has been found that users from both the IITs were using e-resources more as compared to Thapar University & PEC users.
3. The result shows that users from both the IITs were more aware of free e-journals/portals available on the internet as compared to users from other institutes.
4. The majority of users were comfortable with electronic information but they also feel that internet/electronic resources can not replace printed document.

The study shows that users are trying on using the electronic information and they are accepting this format. They are giving more importance to electronic documents.. Those institutes e-library is used most whose users are more aware of their library e-resources and they used e-resources more as compared to print documents. Although they prefer to search through e-information as to save time but interested to read through print material. It has been found that users trying for using electronic information resources.

Suggestions:

The libraries are spending huge amount of funds on the purchase of print materials and e-resources. It has been found that despite many advantages offered by e-resources over traditional resources of information; these resources are not fully utilized. The comparisons of all the four institutes show that IIT users are more aware and are using more e-resources as compared to Thapar University and PEC. Therefore, to ensure maximum usage of e-resources, libraries should subscribe to e-resources keeping in view of basis of priorities and preferences of specific institutions and users. Library should announce the availability of new e-resources or new database. Library should provide the facilities for the user to get familiar with e-resources subscribed by the library; this can be done by the presentation organized by the publisher or vendor concerned. Above all a regular orientation programs and lectures should be organized to make users aware of these facilities

References:

1. http://www.iitd.ac.in/library.
2. http://www.iitr.ernet.in/resources/libray.
3. http://www.tiet.ac.in/centers_library
4. http://www.pec.ac.in/centers_libary.