Sustainable Library and Information Services

Seminar Papers

of the Fortythird All India Library Conference
Punjab University Library, Chandigarh
5 - 8 November 1997

Editors
Dr T A V Murthy
N Datta
Dr R P Kumar

Indian Library Association, Delhi 110 009
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FOREWORD

Librarianship over the years has woven into two strands together — the one a strand of human service that called for mind and spirit and had one of its sacramental assumptions the notion that Librarianship was more than just another way of making a living. It was a calling to enlighten the users of Libraries, to inspire in them the passion for reading, to, in short, help people become all they are capable of becoming. The other strand of librarianship was that characteristic fascination with machinery and systems and management or 'economy', elements which would help Librarians to, in the hoariest of cliches, get the right book to the right reader of the right time.

With the pioneers in the professionalization of librarianship, both strands were important: They were missionaries, dedicated persons, and the nation that the humanistic thrust of librarianship could be separated from the technological would have been pernicious to them. In short, librarianship in our country had from the beginning convergent and divergent elements to it.

Library and information management today is out of balance in the relative emphasis given to the convergent and divergent aspect of the discipline. We have witnessed the systems growing over the last few decades in shifting attitude towards reading, scholarship and faculty status for librarians.

Automation is to free librarians for less mechanical tasks and further the profession in its quest for intellectual parity with other disciplines in the academic community. Paradoxically the outlook for genuine academic status as directors, disseminators and interpreters of knowledge and information declined with the growth of technology when librarians become more proficient technicians. There are indeed some who seen to glory in the decline of real goal of Librarianship and are keen to become career minded managers, administrators and technicians. This is due to the technological thrust of librarianship Librarianship has to weave together the two strands in the information and communication environment.

The topic sustainable Library and Information services has therefore been chosen as the sponsored by ILA. The facets of the theme have rightly been made into :

(i) Sustainable General Librarianship
(ii) Sustainable Library and Information Management
(iii) Sustainable Library and Information Technology
(iv) Sustainable Library and Information Manpower Development
(v) Sustainable Library Finances

65 papers have been received from well know contributors and some from the emerging news. The editors have arranged them into the related area of the theme of the Conference.

The volume containing papers has been provided with an Author and short Subject Index/Keywords Index of Subject Index has been drawn from Title, headings and subheading of every paper.

The editors deserve the credit for bringing out the volume in "very short time to enable the authors of papers and the delegates to the conference to have fruitful discussions to sustain the volume of humanistic approach to librarianship.

The Shriwal Advertising & Designing deserve also our thanks for the way the press has been able to bring out the volume in a very short time.

P.N. Kaula
President, ILA

20 Oct. 1997.

PREFACE

I am delighted to present before you, the much delayed Pre-Conference Papers of the 43rd All India Library Conference–an annual feature, held at Chandigarh during 5-8 November 1997. The delay was due to certain unavoidable happenings which had paralysed the functioning of ILA. We began functioning from 17 October 1998 and it was my first priority to put our entire energy and attention in updating our publication programme including the Pre-Conference volume of the Chandigarh conference. Due to the paucity of time the present volume is being printed as has been received by us.

The ever increasing threat due to rapid developments in the field of information technology, the threat to change the nomenclature attached with the Librarianship etc. has been considerably effecting the profession and sustaining the professionalism has become a challenge before us. We need to have an introspection on the entire professional activities and find out ways and means to sustain them. Therefore, the topic of the Conference 'Sustainable Library and Information Services' is timely and deliberations require attention at the national level. The authors had come forward in expressing their concern by presenting their views in their 'Papers'. The various facets on which the Conference was directed to deliberate upon are:

1 Sustainable Librarianship,

2 Sustainable Library and Information Management,

3 Sustainable Library and Information Technology,

4 Sustainable Library and Information Manpower Development, and

5 Sustainable Library Finance.

Going through the inner contents of the 'Papers' written by our professional coleleagues, it gives me a great satisfaction that almost all the components required to be handled on such a sensitive topic of 'sustainability' have been covered in the Pre-Conferance volume. The components like Total Quality Management (TQM); Job Satisfaction; Modernisation of Library Work; Strategies for Development; Role of Multi Media, Hypertext, HTM Tools, Internet, CD-ROM etc; Appropriate Technology; Responsive Manpower Development; LIS Education and Curriculum; Teaching Strategies; Reading Habits; Future Librarianship; Marketing Strategies; Pricing Behaviour; Role of Resource Sharing; Database Creation; Augmenting Library Finances, etc have been dealt in the document with an emphasis on various case studies in an actual environment. The papers have been divided into various chapters based on the facets mentioned above.

Sustainable Librarianship: It includes four papers. While, Dr H S Chopra has traced the history of librarianship; Padma V Upadhya brings out various issues of sustainability and also the methods to attain it; Sonal Singh and Surendra Singh have ventured on the job satisfaction among the college librarians of Indore using survey method.

Sustainable Library and Information Management: This facet has 19 papers on various components. While K C Dabas, Sheela Dabas and N S Gill discuss the TQM in university libraries; Basudeb Saha deals with the modernisation of library work at IIMC; Mahesh V Mudhol discusses systems approach to the problem; Madhav A N Rattihali deals with TQM in public libraries; R D Mehla discusses the sustainable information management; Amruth Sherikar and S L Sangam deal with TQM on information services; Roshan Raina highlights on TQM perspectives of sustainability; Anuradha Gupta deals with sustainability of college library management; Reality, desirability and feasibility of TQM has been discussed by P Anuradha; Keya Basu highlights on the strategies for development of library; R Rama Nair has dealt with the sustainability of information system in agricultural universities; Subal Chandra Biswas and Kanchan Kamila discuss the challenging issues of TQM; R L Arora and Renuka Lekhi in their article deal with the changes in library management; Manju Kant has identified some of the key elements of sustainability.

Rajyalaksmi while discussing various approaches for successful track record of implementation through TQM brings out possible changes in the organisation; Mallinath Kumbar and M Sujatha Mathad also discuss the implementation of TQM in information science environment; Dinesh Kumar Gupta lays emphasis on the quality in service as a measure of sustainability; and P Rajarattnam Chetty and Prof P Kamaiah have ventured on TQM to overhaul university libraries management in India.

Sustainable Library and Information Technology: This section has eight papers. M Vijayakumar and others bring out the role of multi-media and their application as a measure of sustainability; G Nanaji and Madhukar N Shewali discuss the development of Web Pages using Hypertext and HTML tools; T A V Murthy and O N Choubey have dealt with the cultural perspective of information technology; Shankar Singh, Rambir Singh and Sonika Nandwani bring out various features of Internet resources and the steps for searches; while Suresh Jange and M M Koganurmath discuss the role of appropriate technology to sustain librarianship and their assimilation; R K Bhatt and J P Srivastava deal with the CD-ROM databases at IIT/D; Neeru Bhatia and Sunaina Khanna deal with the need, impact and certain constraints of information technology in sustaining the library activities; K C

Dabas and N S Gill discuss various applications of TQM in libraries and have highlighted the role of appropriate technology in the qualitative librarianship.

Sustainable Library and Information Manpower Development: Thirteen papers have been included in this section. S S Pal initiating the concept of manpower development lays emphasis on restructuring of LIS educationsystem; Sanjay Mishra and Manoj K Joshi emphasise on the holistic research in LIS to cope with the challenges and have discussed the status of LIS education in India; Ranjana Vohra also discusses the reorganisation of LIS education based on the focus on computer technology; S Ally Sornam makes some valuable suggestions for LIS education; Khaisar Muneebulla Khan points on the problems of LIS education in Karnataka and sought for changes based on the recommendations of CDC of UGC; Abdul Majid Baba stresses on the need for sustainability in LIS with particular reference to library education; Preeti Goel discusses the need for the library managers and stresses on the curriculum development, internship and in-service training for these managers; Rajendra Kumbhar spells out the pattern of LIS education to be followed by library schools.

Anil Shukla and H B Nandwana discuss the teaching strategies in LIS and have proposed some new strategies; Mary George Chacko has surveyed the reading habits among the school children as factor for sustainability; Shinde Ganapathi and Mallikarjun Weddenkeri discuss the reading habits among teachers and the role played by the libraries in the upliftment of reading habits; A K Baradol discusses the status of library and information manpower development in India and stresses on the need based manpower development; and P G Tadasad and B S Maheswarappa trace the LIS education in India and have identified the issues to make the LIS profession more relevant.

Sustainable Library Finance: This section has 21 papers. C V Herimath, N M Koganurmath and T S Kumbar discuss about the steps and strategies involved in marketing of library and information services; P V Malleswar discusses the financial crunch being faced by the Public Library System in Andhra Pradesh and suggests fee based services to sustain the financial crunch; Saroj Bala has made a study on the pricing behaviour of periodicals emanating from UK, USA and India: Chandrakant Pharande, Veena Dedgaonkar and Shilpa More disscuss various alternatives to sustain financial resources by giving membership to commercial and industrial units to use the resources of the University Library at Pune; N C Ghatak discusses the role of economics to attain sustainability in financial matters and stresses the use of information as a 'commodity'; Vinod Grover and Neelam Sharma emphasise on the resource sharing as a means for sustaining the financial problems; Navjeet Kaur explains the concept of marketing, the difficulties involved in its

handling and identifies the saleable library services to augment financial resources; B U Kannappanavar discusses on various provisions of financial resources in the legislation for public library system in India; Mallinath Kumbhar and B S Biradar emphasise on the use of various media in the public libraries for rural community; T Rama Bhadra Sarma discusses the sustainability in special library information services through resource sharing from Internet, various networks and digital libraries; K Andhra Matha traces the role of modern librarian in the price structure of communication and explains the necessity of curriculum re-orientation in LIS; B. Ramesh Babu, V Chandrakumar and P L Sujatha emphasise on the use of CDS/ISIS as a sustainable software for bibliographical database; P D Panda traces the history of financial provisions in public libraries in Orissa and suggests certain measures to sustain financial resources in the public library system; S B Patil traces the present financial system of libraries and proposes new modified transitional financial resources for libraries.

Leena Khullar and Mona Pall discuss the resource sharing as a means for cost effectiveness in academic libraries. H S Chopra discusses the marketing of the university libraries services by making the information as a salable commodity; Jalaja V and Dineshan Koovakkai highlight the importance of career information products to earn revenue for public and academic libraries; Sukhdev Singh discusses the importance of Colon Classification to sustain the challenges of using the classification schemes in 21st century–an age of information technology; V G Tamberwade discusses the need for resource sharing in agricultural university libraries in Maharashtra through ring like networking; Harish Chandra discusses the augmentation of library finances in Science and Technology libraries; and lastly A R Sethi observes on certain significant issues concerning the sustainability of library and informaton services.

It is heartening to note that the seminar was directed by an emninent personality, namely, Professor P B Mangla and various technical sessions were chaired by professionals of eminence

Prof J L Sardana
President, ILA

30th November 1998

LIBRARIANSHIP THROUGH THE AGES

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Deputy Librarian, Guru Nanak Dev University Library,

Amritsar (Punjab)

Abstract This paper stresses on the need of resource-sharing, its objectives and its various areas, on which the participating libraries would mainly dwell for the optimum utilization of library services and resources towards the fulfilment of diversified needs of their users. It also discusses the importance of cost-effectiveness which would be the main criteria for the development of any library. In the age of information technology, although the participating libraries are making the best use of their resources through the introduction of latest technologies keeping cost-effectiveness in mind, yet there are certain discrepancies which are to be removed. The paper provides suggestions to improve the library methods. Equipments and techniques with the changing demands of the information users in order to cope with the problem of knowledge explosion. It is only with the elimination of these barriers that the sustainability in librarianship can be maintained and the future libraries can enter the next century with great determination.

The present scenario of Information, Technology, Computerisation, Internet, Virtual Library has compelled the scholars to think of the survival of librarianship.

Librarianship must have existed since the beginning of the first libraries. This fact is proved by the excavated manuscripts from different Oriental countries. Oriental civilisations have contributed a lot to the advanced civilisations of modern times.

Undoubtedly, the original approaches were primitive. The catalogue in use in the seventeenth century B.C. were very similar to those which are now in use in the twentieth century A.D. The archaeological excavations at

Nineveh revealed that bibliographical information was recorded on tablets during the region of king Amurbanipal (668-627 B.C.). These tablets served as crude location device by recording title (Occasionally with opening words), number of tablets, number of lines, distinct subdivisions, and a location or classification symbol. A similar method was adopted at Edfu. The Alexandria Library supposedly had an extensive catalogue compiled by Callimachus in the form of pinakes in 250 B.C. It was described as a classified catalogue complete in 120 books.

Greek civilisation's works can be conjectured as quasi classified with a broad subject and form arrangement that resembled an embryonic shelf list.

It may be any civilisation or any library, some sort of methodology was adopted by the concerned librarian to classify can catalogue the manuscripts. Undoubtedly, learned persons must have been appointed for this purpose. A person with complete knowledge of various subjects, scripts, formation of different forms of writing materials, care and preservation etc. was only considered to be suitable.

In ancient India there were a number of libraries established in the educational institutions. These universities were absolutely dependent upon the teachers or manuscripts in the libraries. A large number of manuscripts relating to different subjects were preserved by the libraries. Unluckily most of the educational institutions (Universities) disappeared with the passage of time without providing us with any written documents. The fault lies not with the preserver but with the invaders who always consider that their culture, educational system, social customs, etc. are more superior to those of the defeated ones. An unforgettable and unrepairable damage has been done to our cultural heritage by the fanatic invaders. Libraries and educational centres were their primary targets. Rarely any inscription or writing material before 600 B.C. is available in India. However, the great libraries of Kuru, Panchala, Videha, Matsya, Taxila, Usinara, Nalanda etc. were not without scholar librarians.

During the medieval period the rulers were fond of maintaining their personal libraries. Sometimes a learned scholar was appointed as its caretaker. The librarian of medieval times was not an ordinary person, he was well aware of the cultural scenario of his times, best judge to decide about the use of paper, ink, coloured inks, illumination, illustration etc. The Mughal rulers tried their best to maintain libraries with consisted of well illustrated and illuminated manuscripts. These manuscripts were very costly as these were prepared after a long labour of the artists, calligraphists and writers. For the proper care of the manuscripts a regular librarian was appointed who was generally a scholar. For the upliftment of literacy there was always encouragement to the paper manufactures. Fine quality paper was prepared for the manuscripts. This is one of the reasons that even today, these is one of the reasons that even

today, these manuscripts have an excellent condition.

In order to make the manuscripts entertaining calligraphists played a significant role. During the medieval period kings and princes used to take special interest in this art. If we count the famous calligraphists the list may run into hundreds of names. During the reign of Akbar, Abul Fedl was prime authority of calligraphic art.

Abul-Fadl tells us that Akbar's library was divided into several parts : some of the books were kept within and some outside the Harem. Each part of the library was sub-divided according to the value of the books. There was also a translation department. According to De Lact Akbar's Library consisted of 24,000 valumes. Jahangir, Shahjahan and Aurangazeb did not let this are of writing, preparation of manuscripts and the encouragement to writers, decline in any way.

So for as the eminent librarians are concerned Babar has mentioned Khwaja Muhammed' Ali Kitab-dai. Nizam or his son was librarian during the reign of Humayun. Mulla Bilal and Inayat-Ullah were librarian during the rule of Akbar. According to Jahangir, Maktub Khab was the superintendent of the 'Imperial Library' and 'Picture Gallery'.

During the reign of Shahjahan Rashida was the Darogha-i-Kitab Khana. Mir Salih son of the Mir Abdulla who was a calligraphist was appointed librarian. He was also a Mansabdar too. Aurangazeb appointed Sayyid Ali Khan Jawahir Raqam as the curator of the Imperial library. So far as the salary is concerned undoubtedly, it was very high. Even abdul Rahim's personal librarian was getting Rs. 4000/ per mensem. It is the only reference of salary of librarians.

Advent of the Britishers gave a new enthusiasm, push and life to the library profession and libraries. The British scholars tried to improve the condition of libraries. Two American scholars of library science introduced a number of reforms in the states of Baroda and Punjab. William Alanson Borden made every possible effort to make the libraries within the reach of the common people. The Maharaja who was an educated one gave him every possible help to create an atmosphere of learning and a network of libraries throughout the state of Baroda.

Contribution of Mr. Asa Don Dickinson and William Alanson Borden in the field of libraries and librarianship can never be forgotten by Indians. Undoubtedly, they worked day and night to make the local people realise the significance of the libraries. A new outlook was given by Mr. Asa Don Dickinson to the deterioration condition of the libraries and librarianship. In India. There was no specific training for the librarians. A regular training programme for the librarians was started by Dickinson. Its effect was recog-

nised throughout India. It was felt that prestige of the librarians would improve only if there was proper, quick, excellent service from the librarians to the user. In his 'Punjab Library Primer' he discussed every aspect which he knew was relevant in those days. Librarians of the early 20th century when new libraries were being established were sincere to their profession. They wanted to help the readers and make their libraries worth use. Undoubtedly, it was the beginning of the modern period yet their contribution cannot be ignored. Most of the early scholars of various subjects were students of foreign universities. They were also helpful in guiding the librarians. Those who adopted this profession had zest, vigour and desire for making the libraries serviceable. Service was their motto. The meagre staff who was generally less trained was guided and trained by the librarians.

After 1960's there was virtually an information explosion in almost every subject. Because of the growth of universities, colleges and research and development centres, information increased by leaps and bounds. The number of research articles rose to millions, as the number of research journals adds upto about 2 lakhs. Similarly, millions of new titles have been added over the years. All this material cannot be procured by one library even the richest countries cannot afford to purchase each and every document. This problem was not faced by our earlier librarians.

During the present period, the librarians are facing a number of problems. In additions to glut of information, the new information technology has invaded our libraries. The librarians need a specific training to understand the implications of the new working conditions. Knowledge of computer working is essential and should be made compulsory for the future recruitments. The time has come when the modern librarian will have to make emphasis on providing users services. The reference service should include selective dissemination of information, current awareness service, contents page service, short range and long range reference service, bibliographical service etc. The librarian should try to market the information to the users at the earliest possible. Now the librarian is not supposed to only take care of the books.

Use of Microfilm readers, CD-Rom, E-Mail, Internet etc. has become the in-thing and will stay in our academic circles inspite of some drawbacks. Therefore, only, a trained librarian can provide better services. To become an excellent librarian in the modern times one should be fully qualified, trained in latest technology, have the leadership qualities, and knowledge of even the minute work of the library. He should be a researcher so that he may understand the difficulties of the researchers also. Acceptance of any form of library will depend upon the users. There is no immediate danger to books or traditional (Paper) libraries. Latest technology has come and will go on coming in more improved form but it will only strengthen the present form of libraries.

SUSTAINABLE DEVELOPMENT IN LIBRARIANSHIP AND INFORMATION SYSTEM

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INTRODUCTION

Information is defined as intelligence of knowledge that contributes to the social, economic and cultural well being of the society. Today information is considered as a major development resource. It also accelerates the development of the human, natural and financial resources. In our country since over time we have failed to recognize the fact that information plays a crucial role in the development of the individual and the society. It emphasize that the agencies that collect, organize, store and disseminate information should be well supported. This is the due time to consider librarianship as an important professional activity.

In this context the issue of susceptibility in librarianship is very relevant and also has become crucial. Susceptibility attempts to concentrate on the problems faced by the libraries and the information centres and to identify the criteria which may help in attaining the susceptibility.

In this paper an attempt is made to understand the concept of made understand the concept of sustainablity, sustainable development (SD), SD in the context of librarianship, issues in SD and how sustainablity can be achieved etc.

WHAT IS SUSTAINABLE DEVELOPMENT

Over a period of time, the society has found the depletion of natural resources with its resultant environmental effects. Since then the concept of sustainable development has been spread to other fields like agriculture, industrialization, water supply, sanitation and women studies etc., i.e. sustainable development is considered as one of the basic issue to be considered and to be studies in all facets of human activities.

The Brundtland Commission has defined the sustainable development as "Path of human progress which meet the needs and aspirations of the present

generation without compromising the ability of the future generations to meet their needs. Sustainable development is a strategy which is considered as global issue inorder to integrate economic development. In otherwords sustainability can be defined as independency to achieve success without any burden on other resources. To attain sustainable development in different fields it is essential to understand that the strategies adopted may be different and will be according to the environment and prevailing situations i.e. the sustainable development strategies must be such that it should suit the area of application.

In the context of librarianship or information system/centre, sustainable development is concerned with the maintenance can continuity of the services and system functions efficiently in accordance with its mandate and objectives so that it may satisfy the information needs of its user community.

The Sustainable development in the librarianship can also be a strategy which involves development of human capacity, marketing of information service and products, create professional awareness of unrealised potential on continuous basis inorder to adopt the changing environment in librarianship.

In librarianship Sustainable Development is essential as librarianship is facing new challenges and the people in librarianship is facing new challenges and the people in librarianship have to prepare themselves to cope with a dynamic and fast changing environment.

ISSUES IN SD IN LIBRARIANSHIP/INFORMATION SYSTEM

Librarianship or information system mainly is an operation which is established to meet the information needs of a community of users involving a coherent series of formally designed 'value added' process to achieve its objectives. Unfortunately the librarianship/information system is not well supported. The lack of support has caused the formation of an unstable information system. It is observed and studies that certain pre conditions are necessary to have a sustainable librarianship.

3.1 Pre Conditions for sustainability

Preconditions are the criteria and broad policies which would positively influence on the attainment of sustainablity. The following are the factors identified as preconditions for attaining the sustainability.

a. Stable Government
b. Stable Institutions

c. Adoption of enabling policies
d. Support and cooperation at local, regional, national and international level
e. Adequate staff
f. Good communication system
g. Management's awareness to importance of information
h. Client support
i. Good financial support
j. Access to financial resources
k. Provide services to sectors willing to pay
l. Tailor information to services and their values
m. Promotion of services and their values
n. Sound marketing of information services
o. Evolving of systems to suit the situation they are placed in.
p. Clearly stated objectives and mandate
q. Sufficient number of users
r. Provision of service to identifiable clientele

A Study conducted by International Development Research Centre on sustainablity of information system in developing countries has identified the following criteria for attaining the sustainablity in librarianship or information system.

1. Support from parent organization

The support from parent organization can be considered with the aspects related to

a. Adequate financial allocation
b. Adequate staff provision and their related development
c. Provision of equipment
d. Provision of space
e. Have a mandate in the system in order to provide efficient information service
f. Commitment on the need for information services
g. Recognition of importance and value of information
h. Placing the information system/librarianship higherup in the organizational structure
i. Including the library/information centre staff in planning process etc.

2. Good Management Practice

This criteria includes the following aspects.

a. Properly defining the objectives

b. Good communication practice and participatory approach
c. Efficient governance patterns and organizational structure
d. Encouraging team practice and flexibility in management
e. Cost effective operations
f. Evaluation of library operations and information services
g. Supervision quality at all levels etc.

3. Use of appropriate Technology

Planning the use of appropriate hardware/software which are locally available, making aware of the new developments, use of appropriate communication facility and providing necessary training for the use of technology will ensure the proper use of technology.

4. Promotion and Marketing of Services

This is one of the important activity/criteria to attain the sustainability. To Promote marketing of services it is necessary to study market, planning the different products and services, feedback and evaluation of services, visibility in the information system are the basis of evaluation and improving the quality of the product. Apart from this planning of the pricing policy and accordingly giving the value added services also enhances the marketing of services.

5. Promoting the Concept of Intrinsic Value of Information

This criteria is the foremost to be considered. Until the management or parent organization is convinced about the value of information one may not be able to get the proper support from the parent organization. This include understanding the broad spectrum of information, know how information is used by the users and for what purpose, develop measures to value information and educating the user on the value of information etc.

6. Generation of Income

Considering this criteria one would be in dilemma how to generate income in the field of librarianship which re quires maximum financial resources and is considered as one of spending institution in the society. For this purpose facts like pricing policies, evaluating charging policy, identifying alternative source of funding etc., can be thought of. By minimizing the foreign exchange and identifying the local vendors for payment on behalf of the institution and use of exchange schemes will no doubt generate some amount of income to the library.

7. Human resource Development and Enhancement of Self

Human resources development is one of the important activity. Unless the personnel are trained for the proper utilization of resources librarianship fails to provide efficient services. Career development, continuing education, training in skill development to acquire technical competence etc., have to be considered in human resource development which leads to enhance self reliant activities and develop leadership.

METHODS TO ATTAIN SUSTAINABILITY

To attain sustainablity in librarianship in our country it is necessary and useful to understand the background in which they are placed. It ensures that librarianship is also one of our basic need as food, water, shelter, health, employment and education etc. In a developing country like our country, we can adopt some strategies/methods to attain sustainability in librarianship/information system. Some of the strategies/methods which can be adopted are as follow :

1. Government Policy on Information :

Sine each country has its own circumstance and problems it is essential to have national information policy which will dictate the role of Government in the provision of information to the people at all level. It also ensures that any form of development will have its influence and effect on the national development as information is considered as one of the developmental resource.

2. Value and Benefits of Information :

It is the duty of the people in librarianship and information professionals to compile the ways to justify the value of information, its benefits and how without it Government can fall. It is necessary to serve the information needs of the key officials at different levels so that they are convinced about the importance of information.

3. Marketing and Promotion of Information Services

One reason identified for the poor use of the information services has been the lack of awareness of the information services by the potential users. Here application of marketing strategies will help to achieve the greater use of the information services.

4. Good Management Practice

It if found that improvement can be achieved by having good management practice. The clear stated objectives, fair division of labour, effective management structure, multilevel communication facility in the information system, team spirit, harmonious inter personnel relationship will contribute to the effective management of the system. The goal of providing qualitative services can be achieved over time with good management practice and good relationship.

5. Resource Sharing and Cooperation

Resource sharing is one of the well known aspect in librarianship, but unfortunately the concept of resource sharing is not practically applied in the field of librarianship. Unless it is practically practically applied we may not be able to achieve sustainability in librarianship as resource sharing leads to minimize the duplication of all efforts and resources.

6. Training Development and Continuing Education of Library Professionals and Information Professionals

This is one of the prerequisite to achieve sustainability in librarianship. Unless the people are made aware of the development and application of new technology in the field of librarianship sustainability in librarianship is day dreaming. This will inculcate the positive thinking towards the developments and its proper utilisation in the profession. Positive thinking also enhances the user and staff relationship and the people in library interact more freely and professionally.

7. Effective Use of Information Technology

To use the Information technology it is essential to know the nature of technology and how best it can be applied to the librarianship. It is always better to use the technology which area available locally and then adopt the new innovation according to the situation. This will enhance the productivity in all aspects.

CONCLUSION

Sustainablity is one of the essential aspect to be leaned and taught in the school of librarianship. Mere theoretical views about the librarianship and blindly following the concepts may not be practically ensure the sustainablity

in the librarianship. It is in the hands of the people in librarianship to ensure the use of information by the users and make them aware of the value of information among the clientele and as well as among the planners and the policy makers. It is therefore study the nature of services provided in different areas of librarianship and make suggestion for their improvement. Bodies like INFLIBNET which funds the libraries and associations like which work for the improvement of the information sector also must look into this aspect and how far the libraries have achieved the sustainability once the funding is stopped. Case studies and survey must be done to study the concept of librarianship and different levels. This will no doubt ensure the institutions to give importance to librarianship and we can hope of real sustainability in librarianship.

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SUSTAINABLE LIBRARIANSHIP AND JOB SATISFACTION AMONG LIBRARY PROFESSIONALS WITH SPECIAL REFERENCE TO COLLEGE LIBRARIES OF INDORE

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Abstract Sustainable Librarianship demands the active role of libraries in the educational, scientific and socio-economic development of the country. Information age has rechanged our profession. There is a change in the focus of the library from record keeping to `skill centres' or `switching centres' for information. An information centre is known by the services it renders and an information officer is known by his behaviour and capabilities of establishing a rapid contact between reader and his required information. Thus, an information officer must have a positive attitude towards his job. To provide effective and satisfactory services, information officer should be satisfied with his job. Thus, job satisfaction plays a vital role in achieving sustainable librarianship. A survey of college librarians of Indore is conducted to study the job satisfaction. The information has been analysed and necessary suggestions have been provided.

INTRODUCTION

"Sustainable Librarianship" : Why this question has arisen ? Why we have to think of the sustainable librarianship today ? It is because of tremendous developments in computer, communication and information technologies which have lead to information revolution and information based society. Due to scientific and technological developments during the last fifty years we have entered into a new era of information. Information age has changed our

profession also. Modern libraries are quite different from the libraries of earlier times. Introduction of modern technologies in the field of information science has entirely altered the image of profession and the libraries have shifted to `information centres'.

Computer is a revolutionary change and today every job performed in the library needs automation for prompt result or action. No doubt, computer is now a major factor is the field of library and information science. Offering a number of choices in its application to acquisition, storage, retrieval and dissemination of information, but it is a dead mass. The modern era of librarianship is the era of Machine and Method, which are operated by the human touch - the man i.e. librarian. The librarian is at the supreme position of this information era, because human touch is necessarily required in information handling Librarians are the active partners in the information flow. They can read the pulse of the readers. They can imbibe a sense of self confidence in readers. They can be proper environment builder. They act as a convessing agent of the reading material and can be a bridge between user and the information required. The book itself is a dead object and remains so, as long as it escapes from the ye of its reader. It is the library personnel who make them living tools by practicing the ideal of bringing the right book to the right reader at the right time with the ultimate motive to achieve reader's satisfaction.

The technological developments have dramatically changed the face of library profession. Dynamic progress in the information environment is a challenge before information officers which forces them for continuing education for developing information handling competencies. The professionals handling information can no longer remain as traditional, static, linear contact between the readers and the documents. They must be dynamic and capable of altering and moving in the communication channels of the networks, at any point in any direction. The quality of workforce (manpower) will determine the quality of services which the users of library and information centres will enjoy in any organisation. An effective and informed staff will mean an efficient service to the users and will also promote a good library image. The heart of library is found in its leader. A library requires good leadership to provide effective service to its readers. Thus a librarian must possess adaptability, awareness, courtesy, discrimination, enthusiasm, imagination, initiative, responsibility, tact, understanding, willingness, vitality and zeal.

The purpose of an academic library is to promote learning and to extend boundaries of human knowledge. Sustainable librarianship demands continuous development and updating of knowledge. Besides fulfilling the information needs, the library should work as an active centre of informal education. Sustainable librarianship involves a meticulous planning of reading materials at one hand and of men involved to carry out the task on the other hand.

The productivity and satisfaction of people to serve as incentives for a more careful and higher quality of work is the soul of sustainable librarianship. One must work on a job that provides the opportunity for growth and responsibilities and the change to exercise and develop ourselves to the utmost. Routine, boring or non-challenging work cannot satisfy this need, no matter how high a salary is paid.

Job satisfaction represents a cluster of attitudes, feelings, likes and dislikes about one's work. It is affected by both, the job related and personal factors. It is what follows from the experience and outcome of results, after being motivated to work to achieve some goals. Job satisfaction has to be studied by the management so as to provide effective and satisfactory functioning of any establishment. Staff is the vital force for establishing a close contact between a reader and his precise document. Utmost importance therefore should be given to develop positive attitude in the staff towards their job by motivating them. Library is a service organisation where the end product is service. It is closely linked with attitudes of serving staff themselves and is not possible by inspection to reveal a service in the easy way, that faulty material can be detected.

To study the factors that affect job satisfaction and to investigate and identify factors closely related to motivation, a survey should be conducted with the help of questionnaire and/or interview.

Library is the biggest of all the agencies of education which offers a "principal road to achievement". It takes firm roots in the social concepts and becomes an axiomatic truth.

College library is a power house of knowledge and provides service to the students, teachers and research scholars. College library supplements the classroom teaching imparted by the teachers. It nourishes the spirits of the youths at the college and plays an important role in the democratic set up of the country by making them responsible citizen of the country. It helps the readers to think effectively in the right direction, to make relevant judgement and to discriminate among values. Thus, a college librarian should work as a friend, philosopher and guide of the readers.

A survey of college librarians of Indore was conducted to study the job satisfaction which is the foundation of sustainable librarianship.

COLLEGES OF INDORE CITY

Indore is the headquarter of Devi Ahilya Vishwavidhyalaya, which was established in 1964. In addition to teaching departments, the university

has affiliated colleges also. The city of Indore has 23 colleges. They are :

1. Devi Ahilya Girls Degree College;
2. Government Girls Post Graduate College;
3. Government Arts and Commerce College;
4. Government Asthang Aurvedic college;
5. Government New Girls Degree College;
6. Government Sanskrit Degree College;
7. Holkar Science College;
8. Indore Christian College;
9. Indore School of Social work;
10. I K College;
11. Kasturbagram Rural Institute;
12. M.G.M. Medical College;
13. Shree Mateshwari Sugni Devi Kanya Mahavidhyalaya;
14. P.M.B. Gujrati Arts and Law College;
15. P.M.B. Gujrati Commerce College;
16. P.M.B. Gujrati Science College;
17. Shri Cloth Market Girls Commerce College;
18. Shri G.S. Institute of Technology and Science;
19. Shri vaishnav Commerce College;
20. College of Nursing;
22. Agriculture College and
23. M.K.H.S. Gujrati Girls College.

METHODOLOGY

To get the required information, a questionnaire was prepared and circulated among the librarians of the different colleges. This had to be followed by personal meetings, either to clarify the questions or to get a more clear picture. Census method has been adopted for the coverage of college librarians in Indore.

The information obtained is base don the analysis and interpretation of the data thus collected through the questionnaire. An attempt has been made to know the actual position, to find out the problems, and provide suggestions to improve the situation.

SCOPE

Out of the total 23 respondents, 18 (78.26%) returned the filled in questionnaires and 5 (21.74%) did not respond.

QUALIFICATION

A librarian has to deal with whole universe of knowledge. He has to satisfy the reader's demands. Thus a librarian should be educationally qualified and professionally trained. The minimum qualifications prescribed for a college librarian is Master Degree in Library Science with a least fifty five percent marks or its equivalent grade and consistently good academic record or he should a post-graduate in any subject with fifty five percent marks and should possess BLISC degree. Qualifications of librarians are presented below.

TABLE - 1

QUALIFICATIONS OF LIBRARIANS

Qualification	Number	Percentage
Dip. Lib. Sc.	2	12%
B. Lib. Sc.	15	82%
M. Lib. Sc.	1	6%

Table 1 clarified that percentage of B. Lib. Sc. degree holder is highest 82%, Diploma holders 12% and M. Lib. Sc. degree holders 6%.

AGE GROUP

The age groups of college librarians in Indore are as under.

TABLE - 2

AGE GROUPS OF COLLEGE LIBRARIANS IN INDORE

Age Group	Number	Percentage
Below 25 years	1	6%
26-35 years	7	38%
36-45 years	6	34%
46-55 years	4	22%

Table 2 indicates that percentage of age group 26 - 35 years is the highest.

JOB SATISFACTION

Library is a trinity of staff, reading materials and readers. Staff is the vital force which brings about a happy union between reading material and readers. Hence, it is necessary for the staff to utilize human resources fully to fulfil the basic objective of the library i.e. maximum services at minimum cost. Success of any institution depends upon the efforts of the individual or the team spirit of the staff. Utmost importance therefore should be given to develop positive attitude in the staff towards their job by motivating them through a provision of incentives.

7.1 Attendance at Professional Seminars, Conferences etc.

It is very necessary for the librarians to know the latest developments which are taking place in the field of Library & Information Science. By attending conferences, seminars etc. they can know about the latest technologies which can improve the quality of library services. A question was asked "Do you attend professional seminars, symposia etc. ?" The answers to this are analysed below :

TABLE - 3

LIBRARIANS ATTENDING SEMINARS ETC

Librarians attending	Librarians not attending	
Number	15	3
Percentage	82%	18%

Table shows that 82% Librarians attended seminars, conferences etc. where 18% did not.

7.1.1 Facilities for attending Seminars

The employers should motivate the librarians to attend the seminars by providing them duty leave, financial assistance etc. It will definitely im-

prove the quality of service provided by them, and they will work with full enthusiasm. A question was asked "Do you get adequate facilities for attending professional seminars etc.?" The answers obtained are tabulated below :

TABLE - 4

FACILITIES FOR ATTENDING SEMINARS

Librarians	Number	Percentage
Receiving facilities	14	77%
Not receiving Facilities	4	23%

7.2 participation in Decision Making

A librarian is the manager of the library. He has to look after the over all administration of the library. He tries his best to satisfy the readers by applying various library techniques like classification, cataloguing, indexing, abstracting, bibliographical, documentation and information services. Librarian is the only person who knows the reader's requirement and the present library collection, problems of the staff and solutions. Thus, he can take a better decision about the library. A question was asked "Do you participate in decision making"? The answers obtained are tabulated as under :

TABLE - 5

PARTICIPATION IN DECISION MAKING

Participation	Number	Percentage
Yes	14	77%
No	4	23%

Table 5 shows that 23% librarians do not participate in the decision making of the library working or they are not consulted. 77% librarians take part in decision making policies of their library.

7.3 Participation in Social and Cultural Activities / Functions

Librarian is a part and parcel of the college and assists in various

academic, cultural and co-activities of the college. He must be invited to social and cultural activities that are held in the college from time to time. It will help in developing better campus relations, and emotional attachment. It will also add to psychological satisfaction. A question was asked, "Are you invited to the cultural and other trivialities that are held in your college from time to time ?" The answers are tabulated as below :

TABLE - 6

PARTICIPATION IN COLLEGE ACTIVITIES

Librarians	Number	Percentage
Invited to the functions	14	77%
Not invited for the functions	4	23%

The above table shows that 14 librarians (77%) are invited to the college activities and the remaining 4 librarians (23%) are left out.

7.4 Faculty Relationship

Librarian is not merely an administrator, but is friend, philosopher and guide of the readers. He should develop cordial relationship with the faculty, students, staff and authorities. On the other hand adequate status, pay etc. be given to the librarian. The question asked was How does your supervisor officer (principal) treat you - as an academic staff member or as a administrative staff member?" Surprisingly, all the 18 librarians are considered as administrative staff and not academic staff. This effects the smooth and efficient functioning of the library and its services.

Another question, as a carollary to the above, was asked, "Do you receive cooperation and/or appreciation from your supervisor; subordinates; colleagues; teachers, students?" The answers are tabulated in the following table :

TABLE - 7

COOPERATION AND/OR APPRECIATION

Cooperating agency	No. of Librarians receiving cooperation	Percentage	No. of Librarians not receiving cooperation	Percentage
Superiors	16	88%	2	12%
Subordinates	18	100%	Nil	0%
Teachers	18	100%	Nil	0%
Students	17	94%	1	6%

7.5 Promotion Chances

Every body wants to get promotion in his life. If, there are chances of promotion, it will definitely encourage working librarians and they will work with more enthusiasm. A question was asked, "What are their promotion prospects in their present line ?" The answers are,

TABLE 8

PROMOTION CHANCES

Number of Librarians expecting promotion	Percentage	Number of Librarians not expecting promotion	Percentage
3	18%	15	82%

Table shows that only 3 (18%) are entertaining hopes of promotion in the profession. It will adversely effect the job of librarians. Library services will also be effected and the aims of library will not be fulfilled.

7.6 Attitude towards Job

Job satisfaction has to be studied in order to provide effective and satisfactory services or functioning of any establishment. Utmost importance should be given to develop positive attitude in the staff towards their job. When the librarians were asked. "How do you consider your present job - Routine/ Challenging/Boring/Creative/frustrating?" their answers were :

TABLE - 9

ATTITUDE TOWARDS JOB

Form of opinion having corresponding feeling	No. of librarians	Percentage
Routine	15	82%
Challenging	1	6%
Boring	2	12%
Creative	Nil	0%
Frustrating	Nil	0%

The above table shows that only 1 (6%) librarian takes the job as challenging. 15 (82%) librarians take their job as routine one; and 2 (12%) librarians treat the job as boring. The table clarifies that librarian's job happens to be taken up as a profession of change and not one of choice. Thus, we can not expect qualitative services with this attitude. For improvement of library services, librarian's attitude needs a change.

7.7 Overall Satisfaction

It is very necessary to know that whether the college librarians in Indore are satisfied with their jobs or not. The respondents answers to the question. "Are you satisfied with your present job?", reveal the following results :

TABLE - 10

JOB SATISFACTION

Librarians	Number	Percentage
Satisfied	14	77 %
Not satisfied	4	23%

14 (77%) librarians admit that they are satisfied with their job. 4 (23%) librarians are not satisfied with the job.

OBSERVATIONS AND SUGGESTIONS

On the basis of personal observations and suggestions of respondents, the following points are considered very necessary for improving library services qualitatively and quantitatively.

1. There should be adequate quantity and quality of staff;
2. Librarian is the head of library. He knows his library collection and its future requirements. So he must be given a free had in book selection;
3. For providing better library services a separate and functional library building with all minimum physical facilities should be provided;
4. For efficient functioning of the library, academic status should be accorded to working librarians;
5. Improved service conditions and good pay are also required for performing a job with full satisfaction and devotion;
6. The higher authorities should also change their attitude towards the library. The should consider library as a indispensable part of the institution. The should take much interest in the working and improvement of the library and library services;
7. Seminars, workshops and refresher courses must be organised so that librarians can be aware of the latest technological developments in the field and
8. Library is an overgrowing and spending institution. In the age of educational improvement the library services have to cope up with requires the permanent source of supply of adequate library finance, which can meet the needs of its readers and proper maintenance of library in every respect.

CONCLUSION

Library is the heart of an institution. It is an essential pre-requisite for successful implementation of higher education programmes. Without the library, no formal educational programme can be fruitful.

A teacher's field is limited only upto his subject and class-room teaching. But a librarian's field is unlimited. He is supposed to be the master of universe of knowledge. He is a teacher of teachers. He has to perform multidimensional duties and functions. He should provide right reading material to the right reader at the right time. Teachers task is to provide formal education which in no way is sufficient to build up a full bloomed personality of the students. Librarians provide real and informal education by providing material for extra reading.

When a librarian is expected to do all these works, he should be free to take decisions in all matters concerning library, and should be accorded proper status salary.

Librarianship has got all the essential attributes of a profession and as a profession; librarianship aims at service. `Service before self' must be the motto of a librarian since he is there not for himself but for fulfilling the reading requirements of the readers. Librarian should have a sympathetic attitude towards the readers and should try to inculcate self confidence amongst them.

Thus, job satisfaction requires cooperation and understanding from both the sides. In order to acquire better status and better service conditions, librarians should be highly qualified and professionally trained, with proper understanding of the academic requirements of readers. On the other hand, the higher authorities should realize the importance of library and librarian's role and he should be provided with good status, good pay scales and adequate facilities. Once the librarians feel satisfied with their job they will work with full devotion to satisfy their readers. Thus, job satisfaction is directly related to effective services which is the main element for the satisfaction of five laws of Library Science and for achieving sustainable librarianship".

SUSTAINABLE LIBRARIANSHIP

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Abstract As libraries are the indispensable part of the society, the services provided by them must modify with a change in the needs of the society. Libraries should sustain with modern technologies of information transmission and communication. Today's library is rightly known as information centre which provides timely access to relevant information by collecting, storing and processing recorded information. Hence, libraries increase national capabilities for innovative development, and for making optimum use of local and international information resources, so, and efficient library and information system is of the prime importance for any country wishing to achieve and maintain real independence. The development of information science is concerned with the transmission of information, which is the main theme of library profession. An information centre is known by the services it renders and an information officer is known by his behaviour and capabilities of providing right information to right seeker at right time. Modern librarianship demands for an information officer who is able to adapt himself to modern techniques with broad humanism. Hence "Sustainable Librarianship" is the need of the hour.

INTRODUCTION

To sustain means to survive with an ability to adapt according to the changing conditions. As per Hindu Mythology, Lord Brahma is the creator and Lord Shiva is the destroyer of this universe. But the significance of sustaining the universe has not been overlooked and therefore none other than Lord Vishnu is the sustainer of the universe. Similarly, the importance of "sustainable librarianship" cannot be overlooked and here, the sustainer of this universe of knowledge is none other than the librarian himself.

Librarianship is a noble profession which deals with dissemination of knowledge. Library is considered as an indispensable part of the society. Library provides information, inspiration and recreation for the enlightenment of the personality of the individual at the vital, spiritual and mental levels. The intellectual development of the society is possible only through libraries. Libraries help to inculcate social virtues, social responsibilities and social duties among the readers and in this way try to make them worthy citizens. Librarianship is an exalted profession which enhances the broadness of vision, increases the sphere of knowledge and the depth of friendship amongst humanbeings. The very essence of librarianship is the service before self. A librarian is supposed to be the friend, philosopher and a guide of the users. He must work hard to provide right reading material to the right reader at the right time. He should personally know each and every reader coming to library, his requirements and the complete library collection. Then only he is able to help his readers. Sustainable librarianship demands for a highly qualified and professionally trained librarian who is able to satisfy diversified demands of the readers. He should be the master of universe of knowledge. He is supposed to be the teacher of teachers. To maintain the image of the library profession, to participate actively in the national development, to walk with the speedy development of the world, a librarian should know and apply the latest technologies and appliances in the field of rapid dissemination of information.

Today's world is the world of information. We all became information oriented consciously or unconsciously. Today, if we don't have information we will be in great difficulty. Today, readers need not only books and other reading material from the library but they need exact information regarding their problem of study. History proves that according to the needs of the society, the library services have modified. In manuscript age, the aim of library was preservation of knowledge and with the development of printing technology the aim of library was changed from preservation to dissemination of knowledge. The modern society is taking more and more complex shape day by day. Today, information is considered as a vital resource for taking decisions which may be collective or individual, social or priyate. Thus, to

sustain the knowledge, a modern library should provide timely access to relevant information by collecting, storing and processing recorded information. To sustain, a library in today's world should function as an information centre, and a librarian as an information officer. Thus, sustainable librarianship is gradually slanting towards information science and information service.

INFORMATION SCIENCE

The importance of information science in modern librarianship can hardly be overemphasized. Today's world is the world of mechanisation and computerisation. Today, library services are also mechanised. The aim is to facilitate rapid and free flow of information from all parts of the nation and from all countries of the world. The aim is to provide access to precise and reliable information- scientific, technical, commercial or other, at the right time and to the right person in the form most conveniently usable by him, so that duplication of research may be avoided. Access to precise and reliable information at the right time can avoid entire wastage of resources, time, money and labour and one can make some fruitful decisions.

Current era is the era of information science which deals with information generation, processing, dissemination, distribution and use. Information science is the science of information handling and information transfer. Information science is the science that investigates the properties and behaviour of information, the forces governing the flow of information and the means of processing information for optimum accessibility and usability. The process includes origination, dissemination, collection, organisation, storage, retrieval, interpretation, and use of information.

" Information science is the discipline that is emerging from cross fertilization of ideas involving the ancient art of librarianship, new art of computing, art of new media of communication, transfer of organised thought". -FOSKET"

"Information science is concerned with the principles and techniques governing the transfer or communication of organised thought (knowledge) from one human mind to another, and ultimately to society".

C.G. VISHWANATHAN

"Information science is a true discipline that investigates the properties and behaviour of information for optimum accessibility and usability. It is concerned with the body of knowledge relating to the origination, collection,

organisation, storage and utilization of information. This includes the investigation of information representation in both natural and artificial systems, the use of codes for efficient message transmission and the study of information processing devices and techniques such as computers and their programming systems".

HERALD BROKE

Thus, information science is an extension of librarianship using improved and sophisticated technology for collection, storage, retrieval and transmission of information. Information science is gradually emerging as a complex, multidisciplinary discipline encompassing other related fields such as Behavioural science, communication theory, computer and telecommunication, classification and indexing etc.,

INFORMATION

Man is a decision maker and information is the vital source of decision making. Information is the power. It is a vitamin like source. Actually, information is the knowledge put to use. Information acts as the haemoglobin in the development of society. Today, information is considered as one of the resources. If, a nation has to develop, information is very important. Information is a vital national resource. It is the basic resource and link between a variety of intellectual and materialistic activities.

Today, information is an essential part of everyone's daily activities. The information is vital to modern research in science and technology. The information is vital for the socio-economic progress of a country. Information is becoming a vital raw material in our rapidly changing highly cost oriented society.

The word information generally means a message, a signal or a stimulus. Any data, news, statistics, facts, intelligence, advice or knowledge which can be used, transferred or communicated is information. It is derived from experience, observation, interaction and reading. It can be right or wrong, good or bad, organised or unorganised, and even related or unrelated. The amount of information which affects the behaviour of a recipient and makes him to take some decision, however varies from person to person, from time to time and from place to place.

Information is a human product. It is a result of human thinking. Actually it is the product of human brain in action, Man always concentrates on a problem and with the help of experiments and analysis comes to a conclusion and releases some new information. Thus, when knower knows the knowee, information is established. This information is stored and preserved for posterity. This stored information becomes knowledge. Thus, "the sum total of information conserved by civilization is knowledge. Information is broadly the recorded or communicated knowledge acquired by the mankind. It is the mankind's most valuable source, which has been playing a crucial role in building human civilization and society in all spheres-social, economic, political, scientific, technological and so on. Thus, information is the major surges on which qualitative development of our society is based. Unless relevant information is available, the decision maker cannot chose the best course of action in development problems. In the post industrial society, information becomes essential resource for planning and management of all other resources. Information is evergrowing and infinite. It is manifold and multidimensional. Information is used but it cannot be consumed. Information helps in establishing a continuity from past to present and to future. Information can be abstracted, extracted and summarised. It can be evaluated. Information can be recorded and translated. The continuous accumulation and proliferation of information at a tremendous rate is now described as a phenomenon of information explosion which has made an impact on storage, retrieval and dissemination of information. Libraries provide timely access to relevant information by collecting, storing and processing recorded information. Hence, libraries increase national capabilities for innovative development and for making optimum use of local and information resources. So, an efficient library and information system is of prime importance for any country wishing to achieve and maintain real independence. Today, library is rightly known as an information centre. It plays an important role in the development of a nation, by generating, processing, disseminating and distributing the information for its optimum and maximum use.

ROLE OF INFORMATION OFFICER

The development of information science is concerned with the transmission of information, which is the main theme of Library profession. Today, libraries are supposed to provide an active service of information. The maximum use with minimum cost and time is the motto of library service. It means there must be a human agency who can organise the service for timely access to relevant information. Thus, the information officer plays a significant role in information handling and information transfer. The efficiency of an information system is dependent upon the personal qualities of an information of-

ficer. An information centre is known by the services it renders and an information officer is known by his behaviour and capabilities of providing right information to right seeker at right time. Information officer must be the master of traditional as well as modern library techniques. So that he can select, evaluate and direct the material to the right user at the right time and in the form most useful to him. The role of information officer changes with a change in the needs of society. An information officer should be able to adapt himself to modern techniques with broad humanism. As a result of advances in communication technology, computers became the essential part of information handling. Information officer should have an ability of handling computers.

Librarianship in modern times is undergoing significant changes in outlook, functions, range and types of services and in methods and techniques. On one side the development of technology and their application to storage, processing and dissemination of information and on the other side the fast growth of subjects with complex interdisciplinary character and increasing demand for specific information have posed great challenges to information officers. Now, it is an established fact that library and information centres cannot be organised properly to provide optimum service to users, unless they are headed by highly educated and professionally trained information officer and are well equipped with modern equipments. Now, it is not sufficient to be familiar with information sources, present in library premises only, but an information officer must be aware of the fact that a single terminal can give access to a number of data bases. Information officer should have the knowledge of these data bases for their maximum use. He must also have the knowledge of searching strategies. Machine readable databases and on-line access to these databases have increased the capability of libraries to provide high level literature searching service. This is the electronic age of transmission. Information specialists are in great demand. Due to changed information environment, market needs of information specialists are also changed. Today, they are needed under different categories as, data processing technical services, on-line searching, in-house data base creation, market research, communication development etc.,

CONCLUSION

Thus, timely dissemination of information is very necessary in today's world of mechanisation and computerisation. The availability of information when it is needed, improves the ability of an individual, a business, a Government agency and various other organisations to make information based decisions, to conduct research et., and thus achieve the overall good of socio-economic development of a country.

The structure of information science has been built upon the foundation of library science. Information science has both, a theoritical side consisting of studies of what information is and how it can be used, and applied side concerned with practical techniques for assisting users of information. The theoretical side involves disciplines like library science, psychology and linguistics, while applied side draws upon a wide variety of discipline including mathematics, computer technology, operational research, telecommunication etc., Modern librarianship demands for an information officer who can act as an information consultant and can handle electronic transmission, computer technology and telecommunication. Unless the librarians adapt themselves to modern technologies of information transmission, the people from computer and telecommunication will overtake the field of library and information science and very soon the world will observe a librarian sitting as an insignificant clerk in the quiet corner of the library. Hence "sustainable librarianship" is the "need of the hour".

AN OVERVIEW OF SUSTAINABLE INFORMATION MANAGEMENT AND SERVICES

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Abstract The paper looks at some definitions of sustainability and from there defines Sustainable Information Management. Efforts are being made to explain the determinants responsible for deciding the Sustainable Information Management. It has been tried to present categorically that how systematically the information professionals have evolved the ways & means to perpetuate services to their users. Reference is also made about the evolution of databases and networks. The issues which are directly responsible for the development of Sustainable Information Management have been explained. The paper has been concluded that the Information System has been designed suiting to the country's needs and modified time to time to make it sustainable.

INTRODUCTION

There is general saying that most successful are those, who, have the "Best" information. It carries all development efforts in all disciplines of human endeavour. If this Best information is supplied with continuity over the long term to its target users can be termed as `Sustainable Information Management'. Agha (1991) has very rightly stated sustainability in relation to information systems, stating, "It should be concerned with maintenance and continuity of an information system over the long term, enabling it to perform its functions effectively in accordance with its user community".

The Sustainability, in case applied to the information management can be perceived as the "ability to utilise available infrastructural facilities, blend and adapt them to ensure continuous service in information processing, storage and directing an uninterrupted flow of information to the target audience, utilising available information management facilities".

In all these definitions of sustainability / sustainable information management one common denominator is the maintenance of continuous service to the user. On their own part, information specialists, documentalists, librarians and other information handlers are quietly reviewing how the word could be applied to information management and how the information specialist has been maintaining and will continue to maintain a continues flow of information in the whole scenario utilising available infrastructural facilities at his disposal.

FACTORS OF EFFECTIVE INFORMATION MANAGEMENT

The sustainable Information Management is usually considered in view of :--

(i) Cost - effectiveness : It can be measured in terms of - Is the cost of running an information system is balanced against the advantages it brings? Are the activities cost recovering - income generating products which could pay for its services? While the generation of income is certainly one factor that can be applied to determine cost effectiveness. But, satisfaction of user needs is the best yardstick by which cost effectiveness can be judged and it is the optimum way to ensure sustainability.

(ii) Need Based : In the case of information systems, and services, the context in which these information systems and services will be set up must be taken into account. The issue of the satisfaction of user needs will therefore assume an even greater importance in developing countries while determining the best Sustainable Information System. Its structure can be determined, on the basis of users needs and how efficiently and cost-effectively these needs can be met.

(iii) Technology adaptation and its application : Some of the key points for consideration are : Does the technology adoption and application conflict with the information consumers societal beliefs and way of life? Does he accept the technology innovation with suspicion or with equanimity? The consideration of these antecedents mentioned above will in no small measure impact the way information transfer process is sustained and also will make more effective the utilisation of information by the information consumer group.

In addition it has also been felt necessary that, with regard to information, sustainability needs to be seen in its wider context - knowledge gained, skills acquired, and progress achieved.

THE INFORMATION ORGANISATION AND TRANSFER

In order to disseminate the precise and relevant information, it must be properly organised, stored and retrieved with ease. To achieve this objective, information specialists have been devising time to time the different techniques for the description and indexing of documents. Similarly for many years, information professionals have been faced with the problem of evolving the best ways to perpetuate service to their clients and this has led to the modification and refinement of processes and procedures in the achievement of this goal. The oldest and yet the most popular information carrying medium is the print which has stood the test of time. Before the print medium, information dissemination was based on oral communication. The oral transfer of information gave way to organised grouping for the intent of passing information and this gave rise to meetings, discussion panels, symposia, seminars, workshops, demonstrations etc. Developments in technology gave way to the use of radios for radio talk shows, television and telephone. Then came the nonprint in graphic and microforms. In the 1960's micro-chip technology was introduced into information management to help or take over the more labour intensive and time consuming manual processes. Since the advent of computers, it has created a remarkable impact, becoming a basic tool in all sort of services including administrative planning.

With the advent of computers, the storage and dissemination of information as magnetic images became possible in which information is stored and read from magnetic disks with the help of these computers. Not content with the technology of magnetic images, information specialists made yet another debut-optical recognition technology which uses scanning technique to store information. One of the earliest types of optical scanners to be used, especially in educational application, was mark-sense recognition. The bar-coded Table recognition, widely used in supermarkets and retail shops, is another example. The most sophisticated of the scanning technology is optical character recognition (OCR) which uses light reflectance to identify the individual character of input documents. The characters are picked up and encoded in machine readable, computer processible format.

While OCR technology attempts to recognise individual characters contained in a textual document, a special type of optical scanning device called image digitizer was designed to convert graphic images such as photographis, drawings, maps and other textual or graphic documents to digitally coded, electronic information suitable for computer processing and storage. Then came the laser disk and technology which has helped in the preservation and conservation of delicate and deteriorating library materials.

Text digitizing technique is now one of the latest optical technologies. CD-ROM (compact disc-read only memory) technology is presently one

of the latest media technology. It is a mass data storage device produced by a mastering process. This technology has put information on the door steps of the remotest information consumer. Advances in this technology have produced multi-media CD-ROMs which have text images, audio and expert advisory systems encapsultated in an interactive hypermedia format.

A part from evolving new media to conserve information publication service, information professionals have also been fighting environmental war to conserve perishable library materials in print. Some libraries and information centres have embarked on transferring these disintegrating library books to other media. In libraries with modest facilities, these deteriorating priceless materials are photocopied and rebound, while libraries with advanced technology convert these materials into microform and optical disk formats.

With the above, it can be seen that information services, supply and conservation have gone through many reformations.

The idea behind this is to create many avenues to cushion the effect of changing needs brought about by developmental changes in the way information is handled. Through any of these media, the information searcher gets the information he wants at any time while of information gatekeeper makes sure the information is processed, preserved, conserved, reformatted and disseminated with continuity ulltilising the infrastructure facilities at his disposal. It is important to say that the level of service rendered by any information centre or library is dependent on the technologies development attained.

The foregoing account however presents individual and stand alone efforts being made by information professionals and libraries to sustain and provide information with continuity utilising techniques available at each time. With the upsurge in information publication and the various formats, it therefore became expedient for information professionals to be involved in information cooperation to remove gaps in their services and provide their clients with latest developments in their areas of interrest. This led to the establishment of information systems and databases. Some are global, others are regional or national. Their structure can be found in bibliographic, factual/source, abstract, directory and statistical formats.

ISSUES FOR CONSIDERATION

Much has been talked about these issues since the last two decades which are directly affecting the sustainability of infromation systems. Some of the issues that relate to developing sustainable information systems particularly in developing countries include :

Devising of Appropriate Policies for Information Acquisition : -- In order to avoid wasting resources on the acquisition of irrelevant information, policies should restrict the acquisition of documents and other information to those that meet clearly focussed needs. Knowledge of appropriate information sources is important. Information specialists should be aware of where the relevant information is, and how it can be selectively acquired.

One of the best and most relevant sources of information is that produced locally. In most countries, the grey literature produced locally which contain invaluable, relevant information has not been managed properly. Information specialists should ensure that all this local knowledge is captured and integrated with other sources to produce an information resource that will truly meet the specific needs of the country. The thing to remember when considering sustainability is to restrict all information collection to that which is relevant to the country's needs. Acquisition of material that will not be used has serious negative implication for resources, both human, physical and as a result financial.

National Information Networks : Another issue which is important when considering the sustainability of information systems is the question of devising appropriate local mechanisms for organizing and sharing information and knowledge, and for building national information networks. In situations where resources are scarce, which is one of the defining characteristics of developing countries, the sharing of resources through networks can maximize the use of those resources to meet the needs of different users. Such good management practices are one of the cornerstones for sustainable information systems at the national level.

Economical Ways to Provide Information : It is important to remember that information exists in many forms, not only in databanks or databases, but also in human resources. Some cost-effective ways to provide information include linking users with people of similar interests and backgrounds, such as scientists, through an awareness of each other's work; inter and intra country networking within similar interests; and setting up effective linkages with National and International Information Systems.

Effective Use of Information Technologies : It must be remembered that new technologies can be applied not only to accessing existing information but also in the design of new databases, services and products. Information specialists should realize that although it may be possible to access foreign databases through the use of telecommunication technologies, the expenses involved should be carefully considered and justified in terms of the benefits of such access. Also, it is important for the information specialist to understand the ways in which new information technologies can be applied to develop local databases, both bibliographic and non-bibliographic, that are relevant to

national needs. Applying technologies for these purposes can lead to information services that are both cost-effective and efficient.

Training and Continuing Education : Quality in information services and products requires qualified staff who know what to do and how to get about it. Information specialists should be on the look out for short term training and continuing education courses offered at national and international levels. Training programmes on new developments in the application of information technologies for information management can provide information specialists with skills that can be applied to the design and use of existing local databases and retrieval of information from international databases that are consistent with their resources and relevant to national needs.

Pricing of Services/ Products : Pricing is a dynamic, multi-stage process in which, the pricing objective determined by management with the organization's overall objectives in mind, produces pricing policy which in turn is translated into practice. The impact that pricing will have on the use of our services and products should be examined before actually pricing. It is stressed that charges for products/services should be so set that users can respond favourably because it can effect adversly also. There is growing consensus that he who benefits from our services/products must pay, and even where the service is being provided at the moment free of charge, there should be considerable pressure to make sure that atleast the marginal cost is recovered.

Finally, information specialists should consider a role for themselves as trainers. The ability to work the policy and decision markers and other users. Training programmes aimed at the sensitization of these categories of users through seminars and demonstrations need to be devised in order to create the climate for useful dialogue leading to the development of appropriate and sustainable information systems.

CONCLUSION

It can be seen from the issues raised above the information specialists over the year have made tremendous efforts to maintain continuous information flow from the source to the end user. Information is used to create new information which is a necessary input at all levels of the research and development. Information professionals long recognised this axiom and that is why they from time to time very their service techniques and principles so as to match up with changes taking place within their information environment. The information systems have been designed suiting to the country's needs and modified time to time to make them sustainable.

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CHANGING SCENARIO AND MANAGEMENT IN LIBRARIES

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Abstract The situation in libraries has changed dramatically in the last few years. The range of skills required is greater than ever, but many of these are not library skills; they are in computing, systems, design, marketing and so on. Staff have to learn to think and live in different ways. It is no longer enough for librarians to know how much they are spending; they need to know how well they are performing. The new structures, which can be implemented within a great hierarchy, would help to achieve the necessary changes. To determine how many staff, at what level, and with what skills, are needed in the future. Strategic planning can be a good way for staff to learn new skills and attitudes and to handle change.

INTRODUCTION

Several significant trends in management thinking have become apparent in the last few years. Influencing factors have been automation, computerization & the changed balance of work (more intellectual, less manual), to which this has led by improved telecommunications; the need for greater flexibility as the pace of change continues. New systems come on the market and new challenges have to be faced. There has been change in public sector as well as private sector. A Parallel trend, is increased, delegation of responsibility, management and financial, at all levels.

This paper considers the current management problems of libraries and the relevance to them of the above trends. Recent developments in computer application offer tremendous possibilities to improve information service.

LIBRARY MANAGEMENT

The word 'management' is a technique, device, art and even a science of managing an organisation or establishment. Library being a non-profit organisation gives a adequate scope for the concept 'management' which has a significant role to play. Management as a technique is being applied in every sphere of human activity today-be it a home, a hospital, a shop, an industry or office and is equally applicable to library and information centres too. Therefore, management can be defined in many different ways, but from a librarian's viewpoint (Mackenzie) 'Management is the direction of known resources, through systems, towards a defined set of objectives, within given constraints, using agreed measures to provide feedback to all segment of the total system.'

Application of management techniques to libraries becomes inevitable particularly in this era of information explosion and publication deluge.

SPECIAL FEATURES OF LIBRARIES

The main feature of a library is the collection and preservation of knowledge for its dissemination to all. But some features come in the way of library management.

Due to the rapid changes in the information scene, the librarians have to face many issues and problems which they have even not though of. Now a days, skills required are not library skills but the skills in computing, system design, marketing and so on.

Libraries are now becoming like other types of service organization and the Librarianship is becoming de-professionalized.

ROLE OF LIBRARIES AND LIBRARIANS

In this changing scenario libraries and librarians will continue to play an important role in handling traditional/conventional and electronic resources.

Upgradation of technology is forcing an unprecedented number of changes in libraries. So libraries must be quick to recognise and realise the advantages of Information Technology and must try to adopt it for their operations. The recent technological developments, highlight the impact of automation on staff and on the administration of library operations. It emphasizes that the library administrators and managers must develop mechanisms for dealing effectively with the changes caused by the introduction of new technology in a library.

There is also a need to re-examine the various collection development/management activities and policies for their amenability to these technologies. If not amenable, a reappraisal of the existing system vis-a-vis new technology should be undertaken.

On the other hand course contents need to be designed both for formal and continuing education programmes to keep the information professionals abreast of the knowledge and skills required for handling information technology.

MANAGEMENT PROBLEMS IN LIBRARIES DUE TO EXTERNAL FACTORS

It is obvious that libraries are facing acute problems at the present time. Their budgets are not keeping pace with price increase in books & periodicals. The growth in output and the increasing range and output of other media of recorded knowledge is also one of the external factor. More effort therefore has to be devoted to selection and this includes the use of performance measures. At the same time, improved bibliographic control is increasing users' awareness of what is published.

Staff members, however, are still being reduced due to the impact of automation. At the top, chief librarian and those immediately below them generally have greater competence, experience and confidence than those below. But they are mostly the products of a library world which have had any training in management.

What is needed today, is less specialisation and increased expertise-transferable skills, in fact systematic & analytical approaches to libraries. In many libraries they do not have much real responsibility dealing with library policies & Plans.

There is also a combination of low salaries and monotonous work so one can hardly blame the persons in libraries if they look elsewhere for jobs.

Last, but not the least the backlog of untrained librarians and the majority of the poorly trained persons before the administration of this country face an unprecedented challenge.

Some of the other internal factors affecting management in libraries are :-

i) Emergence of a variety of new demands of services,
ii) Evolution of inter-disciplinary subjects,
iii) Users' awareness about their rights;

iv) Demographic change;
v) Political influence and
vi) Considerable increase in Users' population.

Some of the problems listed above are not curable by the library in the short terms. Everything can-not be changed over-night, therefore a good deal that can be done including planning a better balance for the future.

TECHNICAL CHANGES IN LIBRARIES

Libraries are in the midst of a period of radical changes, precipitated in large part by rapid and penetrating advances in automation. Libraries currently are experiencing technological changes in, how services are provided and in what these services are.

REASONS FOR THE CHANGES IN LIBRARIES

i) The information explosion;
ii) Escalating library costs and
iii) Technology revolution.

The amount of materials published is now increasing at a rate of 2.5% each year and libraries are losing ground in proportion of new information they are able to purchase. Now it is becoming clear that the libraries will be unable to acquire materials as exhaustively as they used to acquire in the past.

With the expansion of library collections, library costs have also risen. In addition to rising costs, libraries of all types also have had to contend with diminishing levels of federal, state and local support, thus attempting to maintain excellence in a climate of economic austerity.

New technological developments have affected almost every function carried out in a library to some extent. The manner in which libraries process, store and retrieve information by advances in electronics, computerization and telecommunications.

The technological revolution in libraries has been called a "quiet revolution" because the new technology will most surely affect all libraries. Libraries are now in transition from manual to electronic systems. Information is being produced and stored in new forms. The use of computers in printing is leading to a new method of information transfer. Libraries are no longer self-sufficient but are linked through electronic networks of various types.

The changes brought out by technology have been so extensive that it is difficult to assess their total effect.

CHANGING PROCESSES AND SERVICES

To have a sustainable library management, librarians are seeking to merge new technologies into an existing organisation while maintaining and supporting many of its traditional features. The challenge facing libraries is to continue to implement those new innovations which are appropriate and to integrate them into existing operations. The introduction of automation requires :-

i) New Procedures;
ii) New staffing patterns;
iii) New budget and programme priority;
iv) Shifts in authority and decision making;
v) Changes in expenditure pattern and
vi) New and changing services.

Without doubt, libraries are changing and these changes are escalating. New strategies must be developed if libraries are to be reformed to meet the challenges facing them, during the rest of this century. So librarians should creatively and actively participate in shaping the future of libraries. Also technological changes are inevitable the future of libraries is open ended.

MANAGEMENT, LIBRARIANS AND THE FUTURE

Only recently there has been real concern about the manner in which libraries are managed. Today the size and complexity of libraries and the competition for available resources have forced a change. However the factors operating today will be operative over the next 50 years and in all probability they will increase in magnitude and importance. It seems reasonable to predict that no one will be able to function at the professional level without a solid foundation in management. Today the management seeks improvement in the concepts and design of information system and therefore the automation becomes important.

If the events of the past and the need of the present are any indication, we can express that the library of the future will undergo several changes. Perhaps the most significant of these are the expanded technological environments. The library of the future is also to be subjected to increasing pressures to modify its classical organisational structure. In this connection several trends are already becoming evident.

REQUIREMENTS IN THE NEXT FEW YEARS

If libraries are to move towards the highly desirable situation, they need to take several actions. One general requirement is for librarians to take much more cognizance of management in libraries.

Training can be given to library staff in the form of crash courses in such skills as costing, learning of managerial behaviour. Training in information technology and information environment should be a continuous process. Strategic planning can be a good way for staff to learn to see the organisation as a whole.

CONCLUSION

Today the size and complexity of libraries and the competition for available resources have forced to change. It has been predicted that the factors operating today will be operative over the next 25 years, and in all probability they will increase in magnitude and importance. It seems reasonable to predict that no one will be able to function at the professional level without a solid foundation in management.

We can expect that the library of the future will undergo several changes. Perhaps the most significant of these are the expanded technological environment, structural changes within the library and increasing interaction between the library and the rest of the society.

Finally, a major trend will be the continuation and acceleration of the current information explosion. Therefore, the effective information systems be developed and put into operation in future organizations by managers.

The most successful librarians will be those who combine management knowledge with a true interest in readers and their needs. The management policies can be modified significantly. But much is desirable any way, if libraries are to meet other challenges that face them.

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MANAGEMENT OF CHANGE IN CONTEXT OF MODERNIZATION OF LIBRARY WORK : A CASE STUDY OF B C ROY MEMORIAL LIBRARY OF IIMC.

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Abstract This paper discusse how modernization programme of B C Roy Memorial Library of IIMC changed working environment and users' information seeking behaviour. Also discusses the managerial problem arising out of change and how to cope with it.

INTRODUCTION

B C Roy Memorial Library is the working library of The Indian Institute of Management, Calcutta (IIMC) established by the Government of India in 1961 in collaboration with the MIT, USA. The Library has been primarily designed to meet the requirements of the institute's academic programmes.

The Library user community can be grouped as Faculty, Student. External Borrowing Members, External Reading Members and its total user community is 900. Library stock can be grouped as Books 98176, Bound Periodicals 30922, Current Periodicals 435, and Microdocuments, CD-ROM, VAN databases and Video films.

LIBRARY COMPUTERIZATION : SELECTION OF SOFTWARE/ HARDWARE

Selection of Hardware/Software is highly technical job and in this respect expert opinion was duly taken.

In the year 1993 MAITREYEE Software was installed on Wipro Landmark. As the MAITREYEE Software was found not satisfactory LIBSYS, a commercial Software was purchased and installed on the above computer in the month of August, 1996.

A training programme of 10 days for all our library professionals was conducted by the LIBSYS during the month of August 1996. Computerization of library work is being undertaken in a phased manner.

In the first phase 7 years holdings of 14,000 books computerized directly from shelf list. Time required were 3 months and job was done by 2 data entry operators on working days.

In the second phase 84000 holding of books were computerized directly from shelf list and time required four months by 4 data entry operators working round the week between 10 a.m. to 10 p.m.

In the last phase total holding of bound journals (30,000) computerized.directly from authority file. Time required was 60 days by 3 data entry operators during working days.

WHY CHANGE

Computers permit the reduction of the number of repetitive tasks. In general data once will only be entered and thereafter can be accessed and amended. Computer based systems may be cheaper or more efficient. An important asset of a computer based system is the added control, over all library functions that can be achieved with the aid of more comprehensive library management information. Perhaps one of the great achievement in the library management system is the move towards integrated systems. Integrated systems have one database which is used by all nodules and functions. Integrated housekeeping systems represent a leap forward in terms of functionality because they provide the libraries with a single source of management control for all housekeeping. The librarian is able to perform the acquisition for an item, transfer or have immediately available the basic catalogue details while most of early integrated systems were run on mini computers, a recent trend has been the introduction of fully integrated comprehensive microcomputer based systems. These make use of windowing, colour and can be used in network to provide multiuser applications.

The last 30 years have not only seen computer replacing manual methods of information retrieval, but the introduction of many kinds of computer retrieval systems. Some of these are located far way from users but can still be accessed rapidly even by users simultaneously while other are installed locally in the library. To supply the user community speedily, exhustively, efficiently computerization of library work is needed. It has developed and is capable to serve as follows :

Wide spread access of information
High speed of information Communication

Multimedia capability

Over the last decade improvements have been witnessed in data communication technology. The latest development in communication is the transmission by Fiber Optical.

USERS BEHAVIOURAL PATTERN OF SEEKING INFORMATION

The library has taken up a modernization project under which the following database and full text journals have been procured on electronic media:

a) ABI/INFORM Global edition a management edition on CD-ROM covering 1000 journals of which 500 are available in full text form. Moreover library has installed CD-ROM Drive and Laser printer to print the text from CD-ROM.
b) Corporation information of Management Media (CIMM) - A Corporate database covering Indian companies.
c) Value Added News Service (VANS) -a database of Indian news.

Most of the database are available on the Institutes Local Area Network (LAN).

It may be mentioned that these databases are widely used by the user community. The user community have express their view that the library should be fully computerized to access the data online. Keeping the view in mind the library has created a database of holding of 1,30,000 books and bound periodicals to access bibliographic data. All the housekeeping management functions of the library including serials control, book acquisition and circulation shall be computerized very soon.

MANAGING TECHNOLOGICAL CHANGE IN LIBRARIES

Change is a continuous and inevitable phenomenon. Whenever a new technology arrives on the scene, it forces a change at the work place.

The basic objective of each type of library is to acquire, process and disseminate information exhustively, expeditiously and pinpointedly and here IT helps us a lot.

Organizational change has become a way of life. Management is always under pressure to maintain performance under existing chaotic conditions. The workforce may be disheartened when there is a talk of change. People may fear it as a threat to their job security, way of doing things, skills.

Changing in job content means having to acquire new skills, to work with technology and to be re-trained. The range of emotions that can be set in train include anxiety about one's ability to master new skill, loss of esteem and selfrespect when traditional skills are no longer needed.

Regretfully, the general level of knowledge, skill and competence of library personnel in IT is quite low and here support of specialist and technical personnel is required. IT is multidisciplinary and interdisciplinary technology, the team effort with highest degree of co-operation and coordination between library personnel and IT specialist is necessary for effective utilisation of IT.

LEARNING ORGANIZATION

Organization in social institutions consists of group of people whose activities are directed towards the achievement of a common purpose. With these aspects of human beings related to his or her ability to perform an allotted task. This might include aptitudes skill and a range of personnel attributes such as honesty, reliability and diligence - human being, however, bring their whole selves to work.

For that, we must see that organizations are `learning organizations' and the individuals with learning potential. 'Learning organization' implies that the activities of the organization as a whole are continually monitored to provide feedback which then used as a basis of learning and how to improve performance.

To achieve excellence, an organization has to convert itself into a learning organization with the individual as the primary focus. Developing 'learning organization' means focusing on change of skills, attitudes and of culture of both the organization and the individual.

CONCLUSION

The library is a growing organism and technological change is inevitable and must be approached from the attitudinal or psychological point of view, even more then the technical view. All these technological revolutions in the library ask for a fresh approach to the welfare of the employee, who actually uses these information technology devices and many a time resists to change. Library can only implement the policy decision formulated by higher authority and it is expected that the library computerization policy should be widely circulated and to motivate the professionals to make it total success.

Most fundamental need for the successful implementation of modernising of library service using IT, is to develop mentally and technically preparing users and library staff at all levels and need a shared vision and positive attitudes to fulfill the mission of the Institute.

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MANAGEMENT OF CHANGE IN LIBRARIES : A SYSTEMS APPROACH

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Abstract Defines the terms like Management, change, systems etc. Suggests to approach and plan a system through Frich Jantsch's model along four dimensionsviz `horizontal' `vertical' `time' and `causality' and action. Lists systems analysis investigation stages. viz :

a. Defn. of objectives / project defn.
b. Feasibility study
c. Defn. Phase
d. Design Phase
e. Implementalian Phase
f. Evaluation.

What is systems analysis and Design ?

Systems analysis and design refers to the process of examining a library situation with the interest of improving it through better procedures and methods.

Systems development can generally be thought of as having two major components. Systems analysis and systems design. Systems design is the process of planning a new library system or one to replace or complement an existing system. But before this planning can be done, we must thoroughly understand the old system and determine how computers can best be used (if at all) to make its operations more effective, Systems analysis, then is the process of gathering and interpreting facts, diagnosing problems, and using the information to recommend improvements to the system. This is the job of the systems analyst.

What is a system?

In the broadest sense, a system is simply a set of components that interact to accomplish some purpose systems are all around us. For example, we experience physical sensations by means of a complex nervous system, a set of parts, including our brain, spinal cord, nerves and special sensitive cells under own skin, that work together to make us feel hot, itchy, and so on. We communicate by means of language, a highly developed system of words and symbols that conveys meanings to us and to others.

We live according to an economic system in which goods and services are exchanged for other goods and services of comparable value and by which the participants in the exchange benefit.

A library is also a system. Its components - Acquisition section, technical section, circulation section personnel - all work together to create a profit that benefits the users. Each of these components is itself a system.

What is Management ?

Confucius, that ancient Chinese sage who has been held responsible for so many pseudo - philosophical statements, was asked by one of his disciples what was the first thing he would do if he were appointed head of government. `I would rectify the use of terms' replied confucius. The disciple then enquired what such an action had to do with government, and received the answer "If words are not used correctly then speech becomes tied in knots, and business comes to a stand still". Confucius may have been stating the extreme case but never the less it is perhaps as well to define terms, so let begin with the verb `to manage'. The OED states that it derives from the Latin manus (a hand) and it can mean to train a horse in its paces; to make an object serve one's purpose; to control the course of affairs by one's actions; to administer; to husband; to treat a person with indulgence etc.

A manager is defined as one skilled in managing affairs, money etc. and one who manages a business or institution. Management can be defined as the Art, or science of controlling enterprises and organisations through people.

It is a process of agreeing and achieving organisational goals. The nature of managing is more concerned with enabling rather than control.

What is Change ?

Change is continuous, ongoing natural phenomenon. It is to aid survival and growth survival and growth are dependent upon adoptation to a changing environment. Environment can be and is influenced and shaped by the decision and actions of individuals and organisations.

Managing change means directing the energy and behaviour of individuals towards the desired direction in the fluid context. It is all about internal adoptation to external change.

Management of change and the success or failure of projects are strongly linked.

The Systems Approach :

The systems approach can provide a useful work for the manager / librarian, Concerned with an objective consideration of the future. Erich Jantsch has elaborated this idea by preparing a framework of model, which defines the activity of planning along four dimensions, called `Horizontal', `Vertical', `time and casuality' and `Action'.

1. The horizontal dimension (fig. 1) is concerned with the problem of system complexity. In analysing any management proposal it is possible to look at the likely effects at a macro level, where all the social, cultural, psychological, technical and other impacts that can be identified are taken into account. This is the complex view. It is often helpful to restrict one's view to a micro level, concerntrating on just a few of the impacts - perhaps those that are believed to be principally in volved in the proposed change. The systems approach reminds planners that, having analysed at the micro level, it is necessary to return to the macro level and check that was considered workable at the micro level will also be workable at the macro level.

Impact on society interms :		Impacton :
Culture		Individuals
Psychology		Single events
Technology		
etc.		
Macro level	(Fig 1)	Micro level

2. The vertical dimension (fig 2) emphasizes the need to consider planning at policy, strategic and operational levels. The policy level (ought to level) is concerned with the achievement of objectives of the system and strategic level (can do level) is concerned with the achievement of specific goals and at the operational level ("will level") planning activity is concerned with attaining fixed strategic targets such as levels of growth or the development of new services.

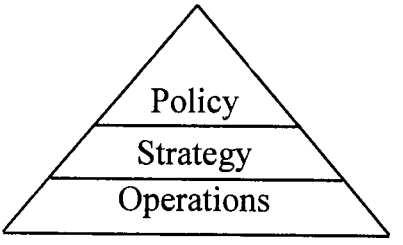


Fig (2)

3. The time and causality dimension is (fig 3) concerned with reconciling two modes of forecasting. The first mode is simple extrapolation from the preset state, sometimes called `normative' forecasting because it assumes that the past is a good predictor of the future and that the pre-vailing conditions will continue to apply. The second mode is concerned with exploratory forecasting, where a future beyond existing constraints contemplated.

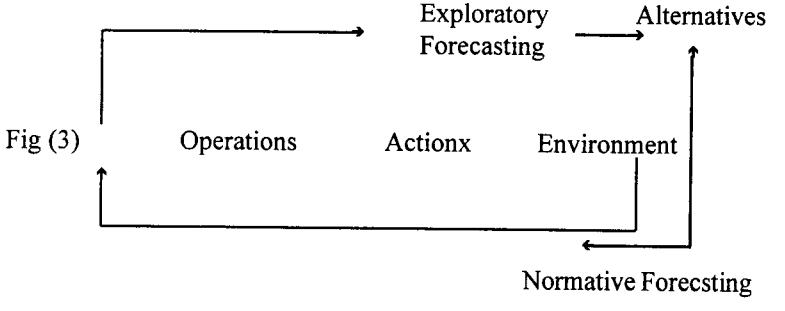


Fig (3)

4. The final dimension in Jantsch's model, that of action. (fig. 4) refers to the interaction between planning and implementation planning should lead to action and the consequences of action should provide feedback for further strategic and operational considerations.

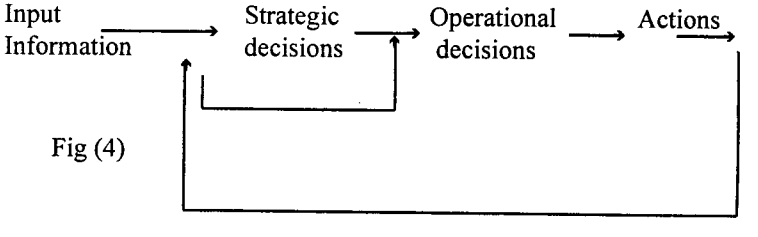


Fig (4)

PLANNING AND DESIGNING THE COMPUTERISED LIBRARY SYSTEM

A mechanisation programme for a library or get of library operations is a significant project. Before any system is installed a formal study will usually be undertaken to investigate the nature ad potential of any system. Mechanisation will affect the basic records of the library and information service. Changes in cataloguing, indexing, acquisition and circulation records can affect the chayacter of library services. An organised systems analysis exercise will contribute to successful inplementation.

A though systems analysis strategies very, the following six main steps are likely to be encountered in most systems analysis exercises.

a. Denf. of objectives / Project Defn.
b. Feasibility Study
c. Defn. phase
d. Design Phase
e. Implementation Phase
f. Evaluation.

a. Defn. of objectives

When a librarian first entertains the idea of mechanisation it is usually in response to some inadequacy in the extant situation. It includes demands for change from governing bodies and users, in creasing backlogs due to shortage of staffs, budget or space. The librarian may be faced with establishing a new information centre or library. The first step is to review established library policies and practices. Next is to develop objectives in terms of a planned progression of systems, starting with a simple improvement and moving, step by step, to the ultimate, more sophisticated system.

The objectives must identity which functions will be affected by the system - eg. cataloguing and information services.

b. Feasibility study :

This step is to complete a report summarising the possible ways of accomplishing the project objectives. It would be in the light of the costs and benefits of each approach. Cost-benefit analysis involves the listing and consideration of as many effects as can be identified, beneficial and adverse, short term, long-term, tangible and intangible on all persons or groups likely to be affected by a project or service costs associated with a mechanisation programme can be systems personnel costs, library personnel costs, equipment and material costs.

c. Definition phase :

The definition phase is directed towards compiling a system defn. Which will describe the library's system requirements in detail giving details of the frequency of operation of the system and machine time and programming effort. It also should include details of the production of any master files, in put requirements and procedures.

d. Design phase :

In this step a detailed design for both the computer system and the library personal is draffed. It is to include the document, containing tasks like, (1) the description of the physical and administration organisation of the library with the aid of charts, manuals etc. (2) collect data on file sizes, amounts of activity, processing times and costs. (3) Identity and prepare specifications for programme and manual procedures.

e. Implementation phase :

All planning has now been completed and the transformation to a fully operationed system can commence. The first jobs will be writing, debugging and documenting of all computer programme and their integration into a total system.

The establishment of master files will take place next. When the system is ready for implementation, emphasis switches to communication with library staff and users. Users also need to be informed about those aspects of the new system that will affect them. Existing files such as catalogues, serial records, borrower records and personnel files must all be converted from their present form. A phase approach is likely to be less traumatic and it gives the staff time to adjust to the new system.

f. Evaluation phase :

Once the system has been running for a, time, the extent to which the system is meeting its stated objectives should be reviewed. Often very small alternations in procedures of file organisation may be repaid by significant improvements in efficiency. If a large system undergoes a systems analysis, effort will normally be directed towards one subsystems at a time, eg. cataloguing serials control etc. Under such circumstances, it is useful to have a chart of the work to be completed in each function and to link the completion of the defferent phases to the financial control of the library. A system may be divided into subsystems by function, subject, material, location or objectives.

CONCLUSION

Technological advancement, increasing commercialisation client awareness, Fundamental social change, Demographic changes etc. are factors responsible for change. The Future library includes both print and Electronic media, both linar text and hyper text, Collection development ad access are both important in future library. Such a situation can only be tackled with systems approach and analysis techniques.

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MANAGING QUALITY IN UNIVERSITY LIBRARIES FOR SUSTAINABLE LIBRARY MANAGEMENT

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Abstract The article summarizes the general impact of information revolution on international order and special impact on information providers. Emphasizes the strategic and historical importance of the 'buzz' word 'quality'. Explains quality as the word which covers the entire gamut of library activities. Points out the fact that Indian librarianship is familiar with the term since 1931 even then libraries are lacking it. Emphasizes the need of quality in university libraries on this historical moment. Explains sustainable development as development that last for ever and sustainable librarianship as the librarianship that can move from vision to reality and can translate challenge into opportunity.

The paper compares Indian Philosophy of librarianship with the 'Kaizen' philosophy of Japan and claims that Dr. Demings 'TQM' could do the same miracles for Indian librarianship as it did for Japanese industries. Explores the concept of quality, service, quality and its characteristics, dimensions of service quality. Discusses related terms such as library effectiveness, performance, satisfaction, perceptions, expectations efficiency. Summarizes the mechanism for measuring quality, satisfaction, effectiveness and performance. Explains the inability of the librarians to measure the outcome of their services. Suggests suitable and workable measures of effectiveness as applied by educationists and the UGC for educational effectiveness. Recommends TQM as the most appropriate management

strategy for the measurement, improvement and management of quality in university libraries. Explores the relevance and implementation of TQM in university libraries for sustainable librarianship and library management. This paper draws heavily on TQM and service quality literature.

INTRODUCTION

Like other professions and organizations, it was the pursuit of the library profession in India to grow numerically targeting quantity of unorganized and haphazard collections in the initial stages of development. Thanks to U.G.C. that almost all the 8,500 colleges and 225 universities have their own libraries. However, most of these libraries have no proper mechanism to tell quickly and accurately where a particular document is at a given movement of time and are not maintaining proper statistics for judicious and optimum use of collection. This numerical and quantitative growth with less stress on quality will not sustain for long in a rapidly changing environment, where information revolution which is bigger than its earlier industrial revolutions has tremendously shaken world and globalization, liberalization, privatization and democratization have become the *'mantras'* of inter-national order.[1] The word 'Quality' has become the *"buzz"* word and symbol of survival and growth in manufacturing and commercial sector and has also started marketing inroads in information service sector. Many information providers' have started working as indirect competitors to the university libraries. Shrinking budgets, increasing costs, and increasing fees have enhanced the operational transparency and accountability of university libraries. Moreover, increasing awareness and consciousness of staff and users about good and bad, rights and privileges has made the situation more grim and complex to handle.

In such a challenging and complexed internal and external environment quantitative growth of university libraries will not only endanger the sustainable growth of libraries but even the survival of professional librarians.

This historical moment calls for the immediate concerns of academic librarianship. The author believes that total quality model than cost cutting model along with print and electronic culture is better model than external performance measurement standards. (i.e. a little bit American version of Indian librarianship) is the possible solution.[2] After exploring the need of quality management this article discusses briefly sustainable development as an approach which combines development, environment and society sustainable librarianship as the totality of philosophy, principles, practices and processes that ensures the continuous quantitative and qualitative growth of stock, staff, services and customers in libraries and also enable the librarian to translate challenge into opportunities and vision into reality. The article explores the theme

of the paper "quality along with similar earlier concepts in librarianship and also ways and means to measure, improve and manage quality".

SUSTAINABLE DEVELOPMENT

Sustainable development is an approach that combines aspects of traditional economic development with elements of environment where we live and social policy which governs our living. Since it is about the development that lasts and about being fair to future generations, so it requires a fundamental mind shift.[3] The Brundtland Commission Report 1987 entitled "Our Common Future" states that paths of human progress which meet the needs and aspirations of the present generation without compromising the ability of the future generation to meet their needs. It is not enough to leave behind a fixed quantity of resources equal to available now by reducing consumption and finding alternatives of scarce resources but rather the knowledge skills, techniques, technology and capacity to satisfy their wants by using resources efficiently and effectively.[4] Sustainable development also means creating agents of change. Internal and external forces constantly compelling the organizations to a new way of doing business. This shift is neither easy, nor quick and often painful. Jack Luskin (1996) points out that to move from vision to reality demands strong leadership from the top, sustained commitment throughout the organization and an ability to translate challenge into opportunities.[5] Sustainable development can be applied for any object of choice.

SUSTAINABLE LIBRARIANSHIP

The inability to learn and to constantly enact and react in the environment with sufficient knowledge and understanding of the community to be served, has continuously led to the high mortality rate of organizations in developing societies.

In librarianship there are four variables i.e. stock, staff, services and users. The size of stock, services and users is increasing, while the size of staff is remaining stable or decreasing. The gigantic increase in knowledge and information and also in various formats, places greater stress on the staff and management and compounds the situation of doing more with less. No doubt our existing philosophies, principles and practices, especially the five laws of library science are capable to cover the entire gamut of library activities and nothing concerning all of us is beyond their purview.[6] Even then we must not lag behind in adopting strategies tested by time and universal in nature from other better world.

This is the historical moment for all of us to redefine our vision, mission, goals, objectives and customers. To reexamine our commitments, attitudes work culture, to constantly review our methods, techniques, processes, procedures, standards, norms, services and products and also to reinvent librarianship. This will help us to turn challenges of environment into opportunity and will foster a new image of librarianship by linking our out comes with teaching faculties. Five laws of library science along with TQM can do the same for librarianship as 'Kaizen' did for Japan. Bradford law and present and future generations should be taken into account while building quality collection of the libraries. Access through library networks will complement and supplement the collection of university libraries. Quality in services depends on quality of personnel and quality of staff depends on level of quality management which is the hall mark of sustainable management.

WHAT IS QUALITY

"If you can not measure something, you can't understand it, if you can't understand it you can't control it; if you can't control it, you can't improve it."[7]

In our daily life we do quality assessment exercise by establishing a product-customer-purpose linkage. Harrey and Green offered five broad and simple approaches to quality.

1. The exceptional view sees quality as something special, distinctive and elitist and is linked to notions of excellence i.e. unattainable.
2. Quality as perfection sees quality as a consistent outcome.
3. Quality as fitness for purpose or conformance to requirements or customer defined.
4. Quality as value for money sees quality in terms of return on investment.
5. Quality as transformation is a classic notion of quality that seek it in terms of change from one state to another.[8]

In services there is usually a direct interaction between the customer and the service so whiter's on service quality have tended to focus strongly on customer requirement or fitness for purpose. Value for money view also plays a role, when it takes into account customers expectations and perceptions. The time and energy spent, efforts made and taxes and fees paid are the money value and results are the value for money. The library is a service organization. The fundamental characteristics of services are:

1. Intangibility : Services can't be evaluated in advance of use.

2. Perishability : Stock of the service element can not be held and services need to deal with demand and capacity directly.
3. Simultaniety : The customer must be present before the service can takes place.
4. Heterogeniety : There is inherent variability in the service offered.[9]

LIBRARY SERVICE QUALITY DIMENSIONS

Zeithaml, Parasuraman and Berry (1990) identifies ten dimensions of service quality. These are adapted with changes to illustrate the dimensions or aspects of quality within library services.

4.1 ***Reliability***: involves delivery of promised library service dependably and accurately.

* Giving correct answers to reference questions.
* Making relevant information available.
* Keeping records consistent with actual holdings/status.
* Keeping computer databases as well as manual records up to date.
* Making sure that overdue notices, fine notices are accurate.

4.2 ***Responsiveness***: Concerns the readiness and timeliness of library staff to provide service and information.

* Making new information available, checking in new journals and newspaper promptly, minimizing computer and manual response time, rush books quickly, minimizing turn around time for inter library loan.

4.3 ***Assurance***: refers to the knowledge and courtesy of the library staff and their ability to convey confidence. It involves politeness, friendliness as well as possession of skills to provide information about collections and services.

* Valuing all requests for information equally and conveying that sense of the worthiness of the enquiry to the patron.
* Clean and neat appearance of staff;
* Thorough understanding of the collection.
* Familiarity with the workings of equipment and technology
* Learning the patrons specific requirements
* Providing individual attention (go with patron to locate document).
* Recognizing the regular patron and providing personalized services.

4.4 ***Access***: means that there are sufficient numbers of staff and equipment as well as hours of operation.

* Minimum waiting time in circulation checkout lines.
* Catalogue and computer are available without waiting
* Working hours are sufficient to meet expectations
* Location of the library is central and convenient.

4.5 ***Communication***: means keeping the customers informed in language

they can understand and listening to them:

* It involves avoiding library jargon through Signs, symbols etc.
* Discerning what information a patron wants through negotiation.
* Developing precise, clear instructions at the point of use within computer databases and catalogues.
* Teaching the patron library skills.
* Assuring the patron that his/her problems will be handled.

4.6 ***Security*** is the freedom from danger, risk or doubt. It involves physical safety within the library and surrounding area, confidentiality regarding dealing with the library.

4.7 Tangibles include the maintenance of the physical facilities and serviceability of the equipment:

* Customers judge a library as much by its aesthetic as by its services-clean appearance of books, furniture, and building.
* Condition of the building (heating, lighting, cooling)
* Condition of equipment such as microfilm reader, video set, copiers, computers and generators etc.
* Impact of other patrons in the library.[10]

UNDERSTANDING QUALITY AND SIMILAR EARLIER TERMS FOR QUALITY IN UNIVERSITY LIBRARIES.

Quality is a basic philosophy and value of library profession and all libraries strive to deliver the highest quality service. But because of its metaphysical nature it is very challenging job to describe and measure quality. The chorus of an old song begins "love and marriage, love and marriage. They go together like a horse and carriage". The lyric represents the tightly-linked character of change and quality. Every change in environment leads to improvement in library processes and quality services.[11] Philip Tompkins argues forcefully that achieving library quality will be increasingly dependent on merging the print culture with the electronic culture. Quality and Aesthetics go together. While aesthetic invites quality sustains.[12]

QUALITY AND EFFECTIVENESS

Financial stringency and electronics networks are the twin threats that led the major motivation for effectiveness in the past and quality now. Effectiveness is an earlier term for quality in libraries. Many attempts have been made in the past to describe effectiveness and quality. The current prominence of quality emerges from the latest trend in business and industry but dovetails neatly with existing research and practice in libraries.[13]

Library effectiveness is concerned with the effect a library has on its users. The questions before us are:

i. How that effect can be measured and can be made more positive?
ii What do librarians contribute to the fulfillment of their parent bodies mission and goals?
iii How do we know any particular library is good?

These questions have led over the past few decades to an increasing interest in library effectiveness and which are leading to a similar interest in library quality.

The work of Richard Orr (1973) raised two issues.

i. How good is this library? This question relates to quality. It is the capacity of a library to meet the requirements of users. Bukland (1988) prefers to call this capability.
ii. How much good does this library do? Relates to value and should be answered by reference to the beneficial effect accruing from its use as viewed by founders. From effectiveness point of view quality and value are separate but from quality management point of view both the questions are not separable. Customer can judge both quality and value.[14]

EFFICIENCY, EFFECTIVENESS AND QUALITY

The founding father of scientific management F.W. Taylor said that if internal processes are working at an optimum level without regard to its effect on customers then success would be guaranteed. Here the organization is both efficient and effective. This creates confusion between efficiency, effectiveness and quite contrary to quality service.

QUALITY AND PERFORMANCE MEASUREMENT

Seaymour in his book on causing quality in higher education makes the point that quality is measurement and internal measurement is better than external measurement. Library performance is nothing more or less than the sum total of its individual staff members. All staff members add value. The cataloguer and classifier add value by grouping together like materials on the shelves and by providing access through card and on-line catalogue. Reference librarian add value by saving users time. Circulation staff ensure that loaned materials are returned so that others may use them. Goodwill (1988) Shapiro (1991) and Van House (1989) clarifies that performance is a broader term that may actually be used with measures of input, process, output and out comes.[15]

IFLA guidelines and performance indicators for Academic libraries can measure the quality of collection, catalogue, reference service, availability of items in the collection and user satisfaction.[16]

Van House, Weit and Mc.Clure : Measuring academic library performance : A Practical approach identifies 15 measures for performance measurement. The monitoring of performance on external standards is used for acquiring resources.[17]

QUALITY AND SATISFACTION

Total quality management gives priority to users satisfaction and the value of knowledge woven into the final product i.e. information.[18] Users satisfaction is a subjective concept, examines "specific transaction" perceived value and consumer preference. Service quality is also a subjective concept which differs from but is related to satisfaction. Service quality is more of a global judgement and it is probably "an antecedent of customer satisfaction". Many academic libraries view satisfaction from three perspectives.

i Interaction with employees
ii The services used
iii The system.

9.1 Evaluator's view satisfaction from three perspectives

i Generic measurement : involves use of general questions
ii Attributes measurement: Examines satisfaction with regard to knowledge, ability, self confidence, helpfulness, friendliness patience, interest and enthusiasm of staff and relevance, amount, completeness and helpfulness of the product or information.
iii Specific measurement applies both the above creteria.

Some Research projects approach satisfaction a global measures which might include questions

i What are we doing that you particularly like?
ii What are we doing that you really do not care about?
iii If we could do one thing to improve, what should it be.

Both service quality and satisfaction view organization from customer perspective and lead to outcome measures. Service quality is more important for library planning and management.[19]

QUALITY IN HIGHER EDUCATION

Educationist's, funding agencies and even UGC rank universities in A,B,C,D grade by using four criteria.

i Reputation of the institution for the advancement of the profession.
ii Resources : More affluence leads High Quality service.
iii Outcomes : Alexander W. Austin considers this as the ultimate test. i.e. producer of leaders for all walks of life.
iv Value added : Quality resides in the ability to positively impact its members. The pre and post test, the students receive clearly indicate a change.[20]

Library as key factor in determining the quality of university. Williamson and Exon provides that the Australian Ministry of Education recognized libraries as key factor in determining the quality of higher educational institution.[21] Our education commissions and committees and UGC has also recognized library as indicator.

MEASURING, IMPROVING AND MANAGING QUALITY IN UNIVERSITY LIBRARIES

Academic librarians do not have concrete ways to assess what the library contributes towards effective teaching, learning and research. This is referred to as outcome or impact assessment. Definition of library effectiveness have focused on prescription of input, internal process efficiency, goal attainment, professional approach, tradition, system approach, organic approach and coalition approach as measuring criteria. Cullen and Calvert (1995) Mc Donald and Micikas (1994) presents four major approaches to organizational effectiveness. Qualitative mechanism includes interview, user surveys, the use of consultants or external review teams:

TQM measures effectiveness of operations by looking at customers factor such as speed, redundancy of task, cost, productivity, satisfaction.[22]

There are two principal approach

(i) Performance measurement
(ii) Quality mechanism
  a) ISO 9000 Series
  b) TQM

Performance measures identifies quality with successful attainment of quantifiable goals and used to apportion reward and blame and not to solve problems.

MAIN ELEMENTS OF TQM FOR LIBRARIES

The total quality management approach is new for library and information science but in Indian context it had its origins in library and information science as early as 1931 when Dr. S.R. Rangandhern gave to the world of librarianship, his famous five laws. The fourth law 'Save the time of Reader' has the similar implications as are advocated in the TQM process. The explanation for the term "documentation" as pin-pointed, exhaustive and expeditious organization and retrieval of information is the sum and substance of the TQM approach. The first three laws have the elements of customer satisfaction.[23]

(i) *Quality is customer defined*

Quality is defined as the gap between expectations and perceptions of customers. Perceptions and expectations are closely linked. Expectations are formed before the service is delivered and perceptions are created during that delivery process. Quality = perceptions = expectations based on 22 statements.

(ii)*Internal and External Customers and Stake holders.*

The library staff member using the output of another staff member as input is called the internal customer and users of library services are called - External customers. This approach identifies the point where management intervention is needed.

Individuals and groups who have an interest in the library from other perspective are called Stake holders. In a university library students, academic staff, university support staff, librarian, library support staff, university authority, the Govt. the society, international research communities and posterity are stake holders.

(iii) *Employee involvement*

Its means each individual must take the initiative. A work culture is needed which encourages this behaviour.

(iv) *Error free Process*

The purpose of TQM is on prevention, to eliminate waste, reduce costs and achieve error free process.

(v) Continuous *Improvement*

It must be seen as the responsibility of every one in the library. To develop this a focus on training, education, communication, recognitions of achievements and team work is needed.

(vi) *Performance Measurement*

Dr. W.E. Deming, the acknowledged god father of TQM has articulated 14 points that he considers the core of TQM philosophy. No. 3 cease dependence on mass inspection and No. 12 eliminate numerical quotas (measurable accountability) relate to measurement. TQM is based on timely measurement of the problem. By Blaming the system for 94% problems. Dr. Denning provided a powerful tool for enlisting staff support for any improvement effort. There are 25 quality improvement tools.

IMPLEMENTING TQM

Before implementing TQM in university libraries it is perhaps more fruitful to explore some of the issues that need to be addressed on the road to a successful implementation of TQM.

(i) Defining Quality

Quality must be articulated in terms to which individuals can relate. Teams, sections and individuals need to be assisted in identifying definition and measures that are appropriate in their context. Generally speed, timeliness, accuracy, completeness and speed of response are important factors.

(ii) Classifying Customers

Who are the internal and external customers? Are there any ways in which the customer can be segmented or criteria of services can be accommodated on the basis of respective demands.

(iii) Measuring Quality

There are many approach to measure quality, complaints, suggestions, customer surveys, Bench marking, employee surveys and suggestions boxes. Measures of current quality provide a focus for the continuous improvement programme.

(iv) Establishing quality as a strategic issue

Continuous improvement of quality and meaningful performance indicators will not take place without top management commitment which is vital for the credibility, continuity and longevity of the TQM initiative.

(v) Organizational Structure

Organizational structure can be divided into two main categories:

Bureaucratic structures for technical services and organic or decentralized system for users services, front line staff must be empowered.

(vi) Organizational Culture

The term culture refers to corporate identity or personality. It is associated with the philosophy and values which create a common understanding amongst organizational members regarding the organizations mission and how its members should behave. For effectiveness an organization's culture, strategy, environment and technology be aligned. In university library the culture will be driven by teaching, learning and research. The cultural transformation does not occur overnight.

(vii) Human Resource Management

TQM is a people centered approach to management. Successful TQM depends upon employee commitment and employee commitment depends upon leader's behaviour to subordinates, elimination of fear, social involvement with other members, the challenge, responsibility and influence offered by the job, participation in decision making, open communication and skill training in the areas such as dealing with different people, problem solving and team building. The libraries have been traditionally more inclined to invest in books, things, hardware and building than in staff development. Investment in human resources will ensure successful implementation of TQM.[24]

CONCLUSION

Information is a vital resource for economic and social development. The libraries and the library professionals need to shoulder the responsibility of managing the information revolution in an increasing competitive environment by improving the ways and means of doing business. Five laws of library science is same for Indian libraries as 'Kaizen' was for Japanese industries.

Application of TQM in university libraries and merging print and electronic culture will definitely improve the quality, effectiveness, competitivity and sustainability of librarianship and library management. Quality has been and will continue to be an issue of strategic importance for the libraries.

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PUBLIC LIBRARY AND TOTAL QUALITY MANAGEMENT

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Library is a growing organisation, an ever expanding organisation and essentially a learning organisation. According to Senge, the impulse to learn is, at its heart, an impulse to be generative, to expand our capability. And in a learning organisation, leaders are responsible for building organisation where people are continually expanding their capabilities to shape their future. This in otherwords calls upon to make use of our basic impulses for being generative and to expand our immense capabilities towards achieving our future goals.

Infect, sustainable library and information services prove to be an important objective of any library that envisages to be equipped to serve its clientele efficiently in the future days. Today it is high time to think about a steady growth with respect to the development of library infrastructure to keep pace with the changing society to meet the challenges thrust on the library organisation. It is very much true that this Institution should aim at meeting the needs and aspirations of the present generation without making any compromise with the abilities of the coming generations. In other words, librarians should have an eye not only on catering the requirements of the present generation providing them upto date library services, but also contemplate upon shaping the libraries for the hi-tech generations of the future. To maintain our libraries, endowed with possible equipments and abilities, a sustainable development is very much necessary. This inturn calls upon us for a deep concern about looking for sustenance in Librarianship, Library Management, information technology, human resource development and augmenting library finances.

PUBLIC LIBRARIES AND SUSTAINABILITY

I would like to point out, in this connection, some of the salient points about the sustainable library management for the future with respect to public libraries in the country. Public libraries are huge organisations catering to the needs of its multifarious clientele, very large in number. Most of our states

have a system of public libraries grown through the institution of state Central Libraries in almost all states and union territories. State Central Libraries, taluk Libraries, Municipal Libraries, Rural Libraries, Panchayat Libraries, Village Libraries and so on, of course, given different nomenclatures at different places.

Infect, sustainable library managements as far as the public libraries are concerned could be though over in terms of qualitative librarianship and total quality Management in Librarianship if only some uniformity is established regarding the nature and organisation of public Libraries in a vast country like India. Since the public Library system has to shoulder the responsibility of not only disseminating knowledge and information to the vast population of the country, but also educate the less informed people, who are in majority, from the very grass-root level. Things ought to become well defined with respect to library Management, staff, finance, administration, and so on uniformly at the national level so that unified and collaborative attempts could be putforth to see that our libraries become qualitatively sustainable to the desired level at the threshold of the twenty first Century.

PUBLIC LIBRARIES ACT

For want of proper public Library Laws and Acts, Public Library system in India appears to be in doldrums almost everywhere. Since independence only eight states viz., Tamilnadu, Andhrapradesh, Karnataka, Maharashtra, West Bengal, Haryana, Manipur and Kerala have been able to enact their public laws. Most of these Acts incorporate information about the purpose of the Act, definition of public Library in these Acts, funding the public Library system, structure organisation of the public library system, controlling authorities of the public Library service system and Library staff pattern.

UNIFORMITY OF ACTS

For a sustainable Development of the public library system. I would like to mention that we should see that all the states in the country should come out with their Public Library Acts and in spirit, uniformity should be maintained as far as possible. The existing Acts should be redrafted with respect to their purpose, establishment, organisation and maintenance of the libraries, finance as well as the nature and extent of services to be provided. Besides it should also have information about the staff pattern of the total public Library system and provision for in-service training for library professionals. Periodical training. Orientation programmes and refresher courses become necessary for the in-service staff members to keep themselves well informed about the fact developing aspects of Library Science and services. As public Library is

an organisation for the public there should be sufficient scope for public participation in the enactment of library Acts and Laws. Valuable opinions sought from various fields of society, say from a cross section to its vast clientele, would help for an overall growth of the Library Bureaucrats and democrate should join hands and work together to accomplish the target, keeping away any prejudices and complexes aside.

TQM IN LIBRARY AND INFORMATION SERVICES

Much is talked about TQM or total Quality Management in the context of Library and Information services these days. There has been dire need to contemplate about acquiring and organising learning resources and satisfying the ever increasing and complex information needs of the various types of readers. The Library and information managers have the responsibility of thoughtfully striking a balance between their constrained resources and the interests of the users. An approach to total quality management becomes relevant in this context.

The basic functions of any upto date Library could be broadly classified into three categories viz., acquisition. Organisation and dissemination of knowledge and information.

As far as the concept of total quality Management is concerned. I am afraid, the public Library System poses several problems. Since it is a very huge organisation widespread right from Metropolitan cities to remote villages, indeed a very big network, uniformity in quality management appears to be pretty difficult. Human resources management, as well as reading and information resources management, owing to obvious constraints, cannot be maintained equally at both the points. The case is different with respect to special libraries and sophisticated institutional libraries. And hence Library and information Managers should think of quality control in public Libraries keeping in view its practical realisation.

ACQUISITION OF LIBRARY MATERIALS

The Process of acquisition involves selection, ordering, receipts and payments and budgeting. Selection of Library resources is generally done on the basis of user requisitions, reviews, publishers, Catalogues, trade literature, bibliographics, exhibitions and so on. For the best utility of any library, learning resources must base user requisition as the reader is the ultimate beneficiary at the endpoint. Infect TQM eventually aims at user satisfaction or customer satisfaction. However, it is found in practice that the Librarians hurry to

add books and information materials owing to financial year and pressures, Vendor patronage etc., In order to have a sustainable Library Management, proper acquisition policies must be formed to ensure qualitative and well balanced growth of public Libraries. Joint efforts of both the library personnel and the user communities will definitely accomplish for a sustained development of the Library resources to serve its clientele today as well as tomorrow. Besides, the Library personnel should arouse a sense of positive participation and responsibility on the part of user community so that the system could achieve a lot by way of proper feedback. The budget allocation should be balanced in such a way as not to leave any much wanted reference material or pile up any unwanted or less wanted materials.

ORGANISATION OF BOOKS AND INFORMATION

The concept of Total Quality Control, obviously imbibes maximum convenience for the users of the Library and as such the processes of classification, cataloguing and subject/key-word indexing should be done according to modern conventions. These technical tasks when taken up with proper logic and user approach would definitely serve the user for retrieval of documents or information quickly. For users of special libraries, computer devices as well as integrated library softwares could be employed for cataloguing and indexing softwares could be employed for cataloguing and indexing as compared to traditional approaches. In case of public libraries, the TQM must be accomplished to the extent possible by making use of current approaches of classification, cataloguing and indexing.

DISSEMINATION OF KNOWLEDGE AND INFORMATION

In any Library the users specific needs should be taken into consideration for a proper resource development and utilisation of available services. In public Libraries, the users come out with varieties of needs. The clientele comprises of general public, senior citizens, housewives, researchers, students, children and so on. The Library has to concentrate on the information needs of all these classes giving equal importance to each of them.

Circulation or lending out information materials from the Library, instructing and assisting patrons about the use of available learning resources, reference and information services are some of the important duties of our libraries. Besides, reprographic services as well as inter library loan services are also available in many places. Circulation is carried out both manually and with computers these days, the ultimate emphasis being on the security aspects of the lent materials. Total Quality control in circulation prescribes the neces-

sity of rapid and accurate access to information. The Library staff must be able to locate the presence of any particular document, be it within the Library or with the borrower, when it is going to be procured back for use by other patrons. The Library should also maintain statistics on issue/return, category-wise, area-wise circulation of Library materials.

TQM in library and information sciences prescribe user participation for a smooth running of the system. These days members of the Library staff are also becoming highly qualified and well trained, capable of employing modern methods in the Library. Knowledge becoming more and more everyday and subjects getting themselves inter-disciplinary, the user community should utilise proper assistance and instruction from the Library staff to make the best use of their library. Reference and information queries must be attended to in order to give a qualitative treatment to the solution of such queries.

Reprographic services like photocopying should improve qualitatively in our Libraries. Infect photocopying has done a lot in saving the lives of our books. When users are well assured about a good copy of their required material, books are borrowed and returned and used within the library without harming them. TQM aims at minimum time and maximum effect in photocopying.

Inter-Library loan services, if worked out in a proper manner, would be a great boon for the readers. Because, all Libraries physically cannot acquire all books. The philosophy of inter-library loan in exhibiting a low profile in our context because of water-tight compartments in our Library system often neither the Library personnel knows about the information resources available in other libraries nor the reader insists much upon getting a particular material. Even if efforts are made for inter-library loan, procedures are too many communication suffers by red-tapism and document delivery mechanisms are poor. Proper drive and awareness are necessary on the part of library managers as well as its clientele to properly materialise the spirit of inter-library loan system.

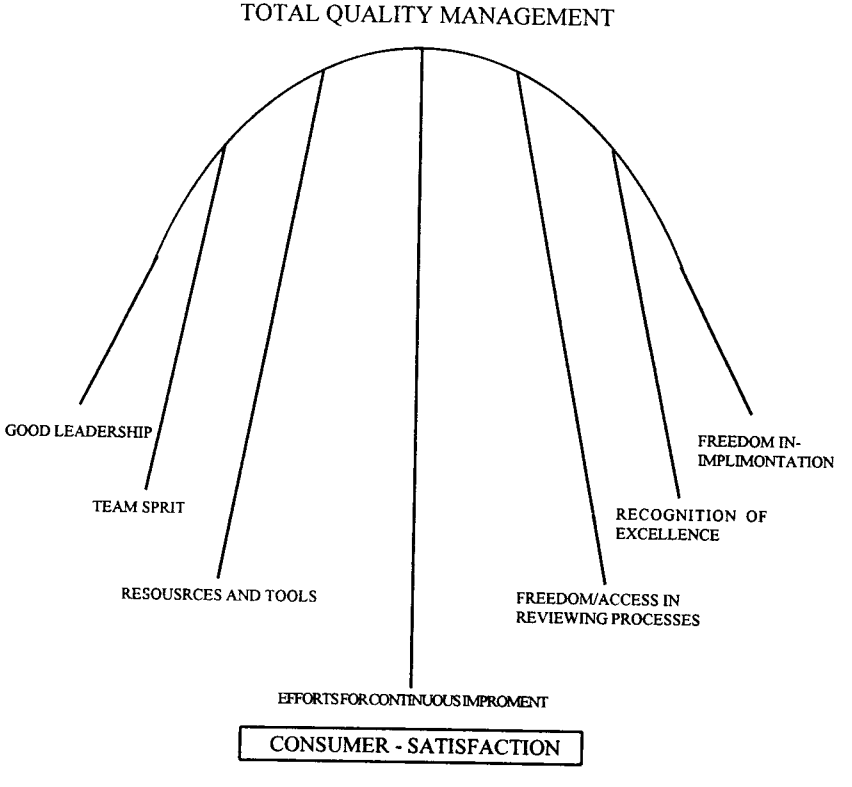
Documentation services in our Libraries comprise of two items namely, current awareness services and select dissemination of information. The former gives information about recent additions to the library, contents, pages of recent periodical issues, forth-coming publications etc., while the latter deals with select documentation bulletins, select bibliographical compilations and literature searches. Everything going hi-tech these days, documentation services do not lag behind. Even communication satellites are being employed for dissemination of information. As such our libraries should endeavour to tune-up their documentation services to the growing demand of its clientele. However, in public Libraries, documentation services are much limited because of the fact that available resources are utilised for buying books from all fields and work on a need-based manner. Public libraries in big cities and metropoli-

tan centres should however, gear up their documentation service potentials and qualitatively cater to the needs of their users.

COMPUTERISATION AND PUBLIC LIBRARIES

With each and everything going computerised all around, the question of computerising the Library system is on the anvil. Many special Libraries and those with good financial backup are going computerised. But the pertinent question would be whether would it be feasible for a huge organisation like the public Library System to get computerised. I find it a target difficult to accomplish. TQM is a reality that could be partly achieved with respect to public libraries. If at all we ought to go in for computerisation. I consider many other priorities before taking up this venture. Even sans Computerisation, I am sure we could do much towards bringing TQM in our public Libraries.

To conclude, I would like to consider some of the salient aspects of Total Quality Management and link their possibilities with the Public Libraries. TQM requires a visible involvement of senior Management personnel



working on a steering committee to work upon policies and strategies for a smooth running of the Library. It also provides for allocation of human and other resources removing barriers that come in the way of qualitative management implementation based on a value system. In order to effectively bringout TQM, good leadership, collective team spirit, provision of tools and resources, allowing freedom in implementation, recognition of excellence of the working members, review of the process and efforts for continuous improvement of such processes to get customer satisfaction and the best possible end result are necessary. As far as possible, the customer should be brought into focus by assessing his requirements, implementing customer satisfaction, feedback mechanisms, handling his complaints creating awareness and so on. Emphasis must be given on employee training and recognition by devising a training strategy designed to support Total Quality Management. The accomplishments of the employers must be properly recognised and rewarded. Quality measurement and analysis, quality assurance as well as quality and productivity improvement results should be taken up and considered.

Many of these terms seem to be far-reaching with respect to the public library system, Obviously for want of human and financial resources and other user constraints. However one could look forward for a sustainable public Library System supported by the available amenities to gear-up itself to serve its vast clientele, not only for today, but also for tomorrow.

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QUALITY SERVICE : NECESSITY FOR SURVIVAL IN TURBULENT ENVIRONMENT

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Abstract The paper describes that quality in services and products which is essential to survive and prosper in turbulent environment. The quality in L & I centres has been defined in terms of total number of volume owed, size of professional staff, annual budget, number of services, and more recently number of satisfied users. Total quality management is a customer focus approach, which gives confidence to customers as regards to quality of products and services, timely delivery, and completeness and accuracy of the information. TQM brings some changes in managerial functions and attitudes of the service provides. Finally, relates to Buddha's preachings and concludes that knowledge, duty and unity are needed by them for effective quality management.

INTRODUCTION

Our profession is at the cross-road today. The associations, L & I professionals, library lovers are struggling for maintaining the library profession a 'Noble' one. The recommendations of the recent pay review committee of the U.G.C.[1] has put the librarians much behind the teachers, even after the repeated emphasis on their parity given by successive commissions/committees[2-5]. At the same time the U.G.C. has framed the Second National Review Committee for University and College Libraries. The terms of reference of this committee includes to study and recommend regarding: position of vacancies in libraries and revision of staff formula, provision of quality service, quality and relevance of books, journals and other documents, accessibility of documents, space available, relevance of curricula keeping in vie the CDC Report, progress of computerization, difficulties due to rupee-dollar conversion fluctuation, perspective for 9th Five Year plan, resource mobilisation, policy pro-

grammes, development of norms and performance indicators. The recommendations of this committee will be another milestone in the history of librarianship in the country, after the first committee[6] under the chairmanship of Dr. S.R. Ranganathan which not only gave librarians the status at par with teachers, but also laid down norms for collection building, availability of grants made to libraries, manpower resources and many more to become the library-the heart of the education system.

ILA has always been striving for excellence in the profession and professionals. This conference will not only give deliberations on the issues concerning sustainable development of libraries, but also its resolutions may give bases to the U.G.C. committee (as many of the themes of the conference are directly concerned with the terms of reference of the committee). The foremost area of the common concern is the provision of qualitative services to users which has strong potential to offer sustainability to libraries, so that the profession exists with positive face in coming years.

THE TURBULENT ENVIRONMENT

The world 'turbulent' has come to describe an environment characterised both by several changes occurring rapidly and simultaneously and by a situation such that only the most optimistic see the possibility of a return to a more stable environment in the foreseeable future [7]. The following figure shows such an environment in which libraries are placed today[8].

OLD	NEW
Information accessible	Information consumable
Isolation	Partnership and alliances
Competition meager	Competition between public and private; domestic and foreign; and competition between users to use more user oriented library
hardware dominated (Size and number)	Software/system dominated (attributes of the system)
Peacemeal improvement	Continuous innovation for achieving service excellence
State funded	Resource generation

The triggers for the change are coping with the manifold increasing pressures caused by globalisation, information, technological development, liberalisation of the economy and shift towards market led society. This all has escaped the geographical boundaries and the world has become a 'global village' in which almost everybody everywhere wants all the things they have heard about, seen or experienced via new technological facilitators that derives *wants and wishes of customers.*

In such an environment, the quality has become an essential criteria for success for all kind of organisations, whether public or private, service or manufacturing; small or larger; profit-making or non-profit making; indigenous or global. The organisation will survive that strives for creating and maintaining quality in its services and products. Even, L&I centres may not escape *from such an environment* in which they are organised and perform their functions with the turbulent, radical changing nature of the information environment in which they operate. *Although this kind of environment is not shaped by librarians, but by potent social, and technological forces outside their control* [9]. The implications for them is to realise the value of quality in services and products and make every efforts to manage and attain it.

QUEST FOR QUALITY

The desire for quality has always been an attribute of librarianship. *But, the meaning of quality changes from individual to individual,* may it be database producer, service provider, user or anyone else. Traditionally, the concern of quality was producers and service providers and they approached the quality from the *perspective of inputs to an organisation and took measures to check and control them.* They assumed that the greater the inputs to libraries the grater (that is, the higher quality), will be output [10]. This greaterness has been measured in terms of stock size, amount of budgetary grants, strength of library staff, mere number of services, availability of technologies, etc. L&I professionals did their best to enrich and enlarge the stock size, to utilize the grants available, to train staff to be smiling and cheerful, and adopt technologies for its use and enhance services. But, now-a-days these practices no more the basis of quality, which lies in satisfying or delighting users exceedingly[11]. It is the user of the service or product who is the ultimate judge of the quality. He weighs the value he receives from a service organisation against the time spent and/or efforts involved in getting the desired service, and thus decides the quality. Users seldom define the quality in terms of stock size, annual budget, physical facilities, staff and mere number of services. No. doubt these are some of the essential criteria for providing quality service; it is the benefits

of the service itself which the users look for [12]. Total Quality Management is a customer focus approach wherein quality is the deriving force of the entire creativity cycle from beginning to end.

TOTAL QUALITY MANAGEMENT : NEEDED FOR FUTURE SUCCESS

The driving force being TQM philosophy is the inescapable needs to survive and prosper in an increasingly competitive, fastidious, fast-changing market. The relevance of TQM to library and information services could be examined broadly amount two dimensions-conceptual and implementation.

Conceptually, it is obvious that TQM envisages nothing less than a cultural change and advocates that quality cannot be improved by high investment on information resources, and information technology alone; qualify comes from people; quality is the results of attitudes and values; and organizational culture decides the quality of services. It requires a new attitude of thinking and strong leadership at all levels. In libraries, whether public, academic or institutional, each of them have competitiveness in terms of collection building, services provided or involved successfully in achieving targets of its parental body. Not only that large number of other agencies such as private information bureau, consultants have threatened the existence of libraries. Modern technologies have also lead to more competitiveness among libraries libraries at global level. As these technologies have opened up doors for users other than the organisational, may it be other libraries or individuals to use its resources optionally and earn some money to maintain its status and manages future expectations of users. TQM gives the library authorities and employees to understand the user expectation and make every effort to meet them exceptionally on a continual basis.

Though at conceptual level, one seems to run into fundamental barriers of perceptions, at the implementation level, things do not appear to be hopeless. Whenever no librarian will admit that he is indifferent of quality in library system or library system do not need quality. Involving users in building up of book collection, adoption of modern technologies, stress upon technical work, users initiation are some of the examples of existence of quality in libraries from users perspective, and the supplying of expidicious exhaustive and pinpointed information to users stresses the qualitative information. But this is a form of ensuring quality conformance. Every existing process for acquisition, organisation and dissemination of information and its resources could be taken up for improvement on a continual basis. It will minimize the time span taken and prevent defects unto zero and effective use of resources would be achieved. Attitude of LIS personnel and services mindedness would bring employees closer to users.

To begin with, the following are same practical steps a library can take to begin and maintain the process of delivering quality service :

i) Commit to improve quality

It is essential to do things right for the first time and there is a need to improve the processes on continual basis. For this employees need to have greater understanding of processes from and drive the accessing structuring, storage and retrieval of information and every activity there of. Whole organisation must be committed to quality improvement.

ii) Delegate powers to

Frontliners frontlines are the people who come into contact with customers. In library context frontliners in the name of personnel involved in reference, circulation, inter-library loan, shelving activities etc. must be empowered to solve users problems with more speed, accuracy and completeness.

iii) Develop a comprehensive customer information

Information about user base regarding their actual and potential needs, key-terms, change in need pattern, etc. is to be collected and used. Modern technologies may be used for developing the customers information system.

iv) continual assessment of the services

Continuous assessment of services is essential to judge the ability of systems, processes and services to deliver results and meet objectives in a consistent manner.

Initiate a feedback system and use the information to adjust processes to respond to users needs, wants, and expectations and change the procedure to become more user-centered.

These steps cover most of the basic tenets of TQM as use focus, empowerment and involvement of employees, continuous improvement, commitment towards quality, etc.

CONCLUSION

Although there is no unique best way to meet users need exceedingly, but the goal of delivering improved services or high quality products to users remains an integral part of the profession's ethos. The prospects of high quality services could be enhanced by developing good collection, automating library operations, adapting modern communication technologies for faster flow of information, participating in networks, etc. But the thrust for sustainable

development comes through quality service - who create, deliver and use it. For people who are concerned with quality remembering Lord Buddha's three cardinal tenets are very much relevant in achieving a high standard of quality, viz.

Buddham Saranam Gachchami

(I surrender to the 'knowledgeable')

Dhammam Saranam Gachchami

(I surrender to my 'duty')

Sangham Saranam gachchami

(I surrender to 'unity')

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STRATEGIES FOR DEVELOPMENT IN LIBRARY AND INFORMATION SERVICES : SUGGESTION IN INDIAN CONTEXT

Keya Basu

Subtheme : Sustainable Library Management

Abstract Considering the changing scenario to modern technology and future economic condition library and information services should be planned strategically. It includes finding out ways to overcome economic crisis, surveying external and internal environment of library, market survey, resource generation, keeping pace with modernisation, etc. Instead of being the most heavily used public institution libraries do not get proper attention of both the Government and public. To get their support and to improve the situation various innovative programme may be taken.

INTRODUCTION

We are in the fiftieth year of independence and the process of an economic revolution has just begun. It is the most opportune time to do an introspection and work towards modernisation of every system in our country. Needless to say that Library and Information Service forms the backbone of development, hence it deserves much more attention. One needs to shed old ideas and adopt modern technique supported by skilled personnel and application of strategic management like, keeping pace with changing scenario, conducting periodic survey, exposing Library and Information personnel to all the related fields, formulating innovative ways for resource generation to overcome economic hurdless. Just about two years ago even the USIS Libraries in India were facing a financial crisis, but they could wriggle out of the crisis by introducing a membership fee. Further, a bit of trumpeting is also need of the day to retain the blessing of the Government.

According to Encyclopaedia of Bioethics, "Sustainable development is a development that meets the needs of the present without compromising the

ability of future generations to meet their own needs". Development of each and every organisation depends on the environments it works. This environment consist of financial condition, availability of resources, technological innovation, political situation, Government, cultural and social condition, human resources etc. Since libraries and information centres are organisation, this is applicable to them also. A major and increasingly important job of management is to place the library strategically in its environment so that it's continuous development and security can be assured. According to J.Bryson, "Strategic management requires both strategic thinking and strategic planning and is a useful approach for managers as it enables the library or information centre to quantify and qualify its contribution to the Community or organisation on a long-term basis. It provides the opportunity for the library or information centre to justify its existence in other than financial terms. Using these strategies management can focus on long-term strategic goals and environmental changes, with the result that they are better able to manage and control change and make their services more appropriate to user needs".

With the invention of modern technologies like E-mail, internet facility etc., visiting libraries is not essential for gathering information. Scientists, technologists and other professionals can acquire information about latest development of their respective fields through these modern technologies or they may communicate directly with their distant colleagues. Now conception of library has been changed, 'hough in Indian context it is applicable only partially. The information professional can no longer be a passive partner but an active, energetic professional. The role of the librarian will change significantly. They have to be expert in using electronic tools and have to work in a competitive environment. They have to work with professionals from closely related disciplines - such as information scientist, computer specialists, networking specialists etc.

Considering the changing and uncertain financial, social, political environments feared in the next century, planning for the library and information centre's future is essential. Libraries are probably the most heavily used public institution but they do not get the attention they deserve. In the time of economic recession on organisation with a strategic plan can face the hostile environment successfully.

In present situation library professionals should not only be conversant with library matters but also need to know skills in lobbying and negotiating in order to secure the necessary resources in a competitive environment. Sustainable development can only be possible through effective library management and a Library and Information Service (LIS) can only be effective when it successfully serve the user's purpose. Where there is a good relationship of work between the supervisory staff and subordinates librarian should

be able to acquire and control the Information, technical and financial resources. The following factors may be considered for development of Library & Information Centre.

(1) Scanning and analysis of external environment :-

It is essential for the library or information centre management to survey the external environment of the library. It provides the management with important information about the changes and it's effect on the library. It will help them to determine the role of the library in its' environment. Identification of possible threats and opportunities will become easy. Effective survey will help them to take right decision at the right time and they can take advantage from the situation. The external environment of a library consists of (FIG-I):

* economic condition,
* community it belongs,
* cultural and social condition,
* financial resources,
* technology resources,
* political situation,
* raw materials,
* competitors or potential competitors.

(2). Scanning and analysis of the internal environment

The success of a library in achieving its organisational goals can be possible through analysis of the internal environment of the library. A LIS can only be effective when it responds to it's users' needs. To obtain it and extract maximum service from the library staff a good working relationship is important. What is needed is the teamwork. Assessment of internal environment will help to identify organisational strengths and weakness.

(3). Offering the service (LIS) with fewer resources :-

There are many factors which affect the library and information services. Inflation is one of the factors resulting in the high prices of reading material. It has forced the library management to curtail the budget. Information is considered to be a basic resource for national development. We will have to convince that funding libraries is not a luxury but essential for the nation's future. To satisfy the user needs management should identify the unexplored areas of resources. They have to find out the new sources of revenue by internal charges for certain services. Although results of many survey and analysis

show that most of the users are unwilling to pay for the information. So it is all the more necessary that library professional should convince them that now information is considered as a valuable commodity, hence it has a price tag

(4). Human Resource Management :-

Employees are am organisation's most expensive but most valuable resource. Successful planning of human resource will help to ensure the library's effectiveness. This involves job analysis, job description and person specification. Job analysis is the systematic reviewing and recording of the activities of a job. The job analysis can be conducted by :-

a) observation of the job
b) interview with the post holder
c) interview with the management
d) deciding what activities and tasks need to be performed in order to achieve the purpose of the job.

Job description will form the basis of the personnel plan for the library. Job description are essential for nearly all aspects of human resource management. It involves identification of job, summary of what is to be done, relationship with other post, performance measurement, etc. Good job descriptions ensure a proper return on the heavy investment in personnel and the delivery of services.

Person specification will help to select the right person needed for the post, the exact areas of responsibility, the relationship between different posts and the various levels of irresponsibility and areas of control.

(5). Strategies for Human Resource Development :-

It involves (a) training and development of the library personnel, (b) Reviewing the performance of the personnel.

It is the responsibility of the management to provide fund for training of personnel. They should arrange for training programme, refresher course and allow them to attend workshops, conference, seminar etc. But it should not be random, it should be justified through an analysis of needs. Periodical preview of performance provide feedback to employees, allow them to overcome their weakness, help them to identify the areas where more care is needed.

(6). Market analysis :-

In order to survive in the competitive environment management should be aware of their market. It consists of determining the actual or potential clients of the organisation, dividing the market into meaningful parts, and defin-

ing the needs and characteristics of the organisation's target market.

Key questions for marketing analysis :-

A. Market analysis :

1. What important trends are affecting the library and information industry?
2. What is the library's primary market?
3. What are the major market segments in this market?
4. What are the needs of each market segment?
5. How much awareness, knowledge, interest and desire is there in each market segment concerning the library?
6. How do our public see us and our competitors?
7. How do potential users learn about the library and make decisions to join?
8. How satisfied are current users?

B. Resource Analysis :-

1. What are our major strengths and weakness in facilities, staff, services?
2. What opportunities are there to expand our financial resources?

C. Mission Analysis :-

1. What business is the library in ?
2. Who are the library's customers?
3. Which needs are we trying to satisfy?
4. On which market segments in the industry do we want to focus?
5. Who are our major competitors?
6. What competitive benefits do we want to offer to our target market?

Considering the above points library management may study and analyse the market. Results of which will help them to take right decision.

(7). Facing the challenges of modern technologies :-

Library science as a discipline has limited growth. The discipline is gradually dominated by information technology. To grow in the profession they must be conversant with the modern technology, otherwise there will be professional, threat from other information technology specialists.

Libraries do good to public. It is a basic element of a healthy democratic society. To survive in the competitive environment, with poor financial

resources and continuous threat from information technologists, libraries need friends just as every individual needs friends to appreciate his good points and understand the reasons for his weaknesses, to interpret and explain him to the world, to help him in his needs - so does a library. The growth of groups of friends of the library throughout the country speaks well for the return of public support as well as public use of the library.

CONCLUSION

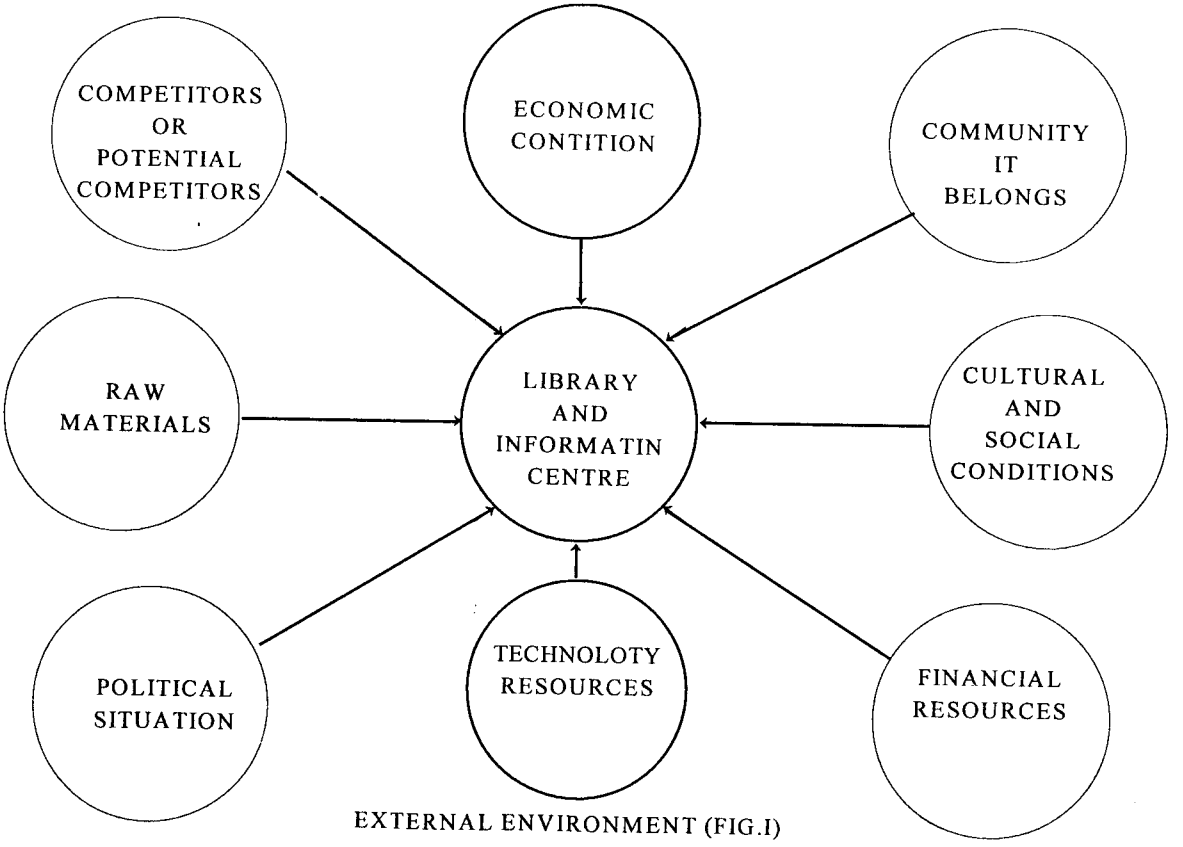
The whole process of developing our LIS can be summarised in the following three subheads :

1. A research like scientific analysis of the market, the user's needs, the social, economic and political environment : its application.
2. Keeping pace with the modernisation in global terms setting a target of achieving a highly skilled professional, opening up to international forum, providing better lucre for inducing better service.
3. Coming up with innovative schemes to augment resource generation. To fix a price for every service commensurate with the economic growth elsewhere.

The world outside has changed a lot. Since 1947 although we have come a long way industrially, we haven't done much on LIS front.

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EXTERNAL ENVIRONMENT (FIG.I)

SUSTAINABLE LIBRARY & INFORMATION MANAGEMENT — A TQM PERSPECTIVE

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RESPONSE TO INFORMATION SOCIETY

In the present age of Information Society, which the world is witnessing towards the end of the twentieth century, information is held as a key resource for the economic, socio-cultural and political development of nation. Organizations make greater use of information as an economic resource to introduce innovation and to increase their effectiveness and competitive position. People in order to ensure better standards of living, use information more intensively in their day to day activities so as to firm-up their choices between alternative products and services.

This being so, availability of right information for the right user at right time and at right cost becomes all the more vital. The scenario has, posed major challenges to the information sector, whose prime function is to satisfy the complex and increasing demands for information products and services. Times, when the Librarians and Information Managers (LIMs) used to remain busy (and satisfied) with functions aimed at acquiring, Organizing providing reading materials, only when there was a request for the same, are over. The profession to-day is being geared to aim at something beyond that. Something beyond, in the context of Library and Information Centres (LICs) means that the LIMs will have to chip in and accept the challenges by playing a more proactive role.

LIMs will have to appreciate that just having information and storing it will serve no purpose unless it is put to effective use by those who need it. LIMs will have to bring the user and information together. However, increasing technological advancements are putting increasing pressures on LIMs. First, the technology of information work is vastly extending the scope of their work. It is now possible to gain access to and process much greater quantities of

information than was possible only five years ago. Computers and CD-ROMs have found increasing acceptance in LICs; Multimedia has shown much potential for LICs; and Information Networks have broken down time

and space barriers. Second, user expectations are rising constantly, creating a demand for ever more sophisticated, high-quality information products and services.[1].

In the same breath, it is also appreciable that information is becoming increasingly expensive and repackaging. Value addition of the information, makes it even more expensive. There is a further rise in the cost of information when IT (acquisition and upgradation) is to play its role in designing and delivering information services and products. Further, the age-old concept of certain social services like health, education, justice, etc. being made available, free of cost, is becoming irrelevant as the time goes by. This is true with library and information services (LIS). The institutions engaged in all such services are being asked to become self-sufficient, if they are to survive in all such services are being asked to become self-sufficient, if they are to survive in cost conscious and competition oriented social and environmental set-ups. Public funding for such purposes is being questioned.

THE PROBLEM

It is true that by using a variety of IT tools and techniques, LICs are now able to generate various kinds of information products and services in addition to performing the routine tasks. But, it is a little unfortunate that these remain largely underutilized, or even, in cases, wholly unutilized.

The reasons cited are several and include the following :

2.1 efforts in identifying and reaching out the target clientele are inadequate;

2.2 level of information awareness or consciousness among the users needs to be raised a lot further; and

2.3 information products and services are "generator" driven rather that "user" driven and in that there remains a "linkage gape" between the generators and users of such products and services.

The other side of the coin is that the LICs have, over the years, spent enormous amounts of money, expertise and other valuable resources to come up to a stage where they are at present in terms of service delivery. They continue to do so, even as of now. Mobilizing resources, particularly the finances may not be now that easy an affair as it has been in the past. But, in the demands and expectations from their users, there won't be any looking back. In such a situation, not only will mere survival of the systems to the expectations of their users be a major challenge for the LIMs but their sustained development of LICs will have to be only in accordance with more exact and specific needs of their users. Towards this end and keeping the concept of a re-

source constrained regime in mind, the services offered will have to be internally efficient and externally effective. It is in this context that the concept of 'Total Quality [TQ]' becomes relevant for the sustainable 'Management [M]' of LICs.

TQM APPROACH

Total Quality Management (TQM) is an approach aimed at satisfying the customer requirements on a continual basis (Quality-first time, everytime, all the time) by involving everyone (Total) in the system, and at a lower cost (Management). The philosophy of TQM is based on three basic premises. These are : (i) to become more customer driven rather than be more self focussed; (ii) to concentrate on process rather than be preoccupied with results; and (iii) use the workers' heads in addition to their hands [2]. In today's fast changing competitive environment, there is no doubt that it is the customer who is responsible for the survival or otherwise of the business itself. However, if customer focus alone is emphasized, TQM will be reduced to mere lip service since the other pivotals have been left uncared for. In this approach, emphasis is on prevention of errors rather than on their mere detection. It believes in doing things differently and not in doing different things. In line with this approach 'Quality', has been very aptly explained as: (i) a strategy to survive in a competitive era, (ii) a key to globalization, (iii) a path to excellence, and (iv) an eternal philosophy of continuous learning [3].

TQM IN LICs

Application of TQM approach, as such, in the context of LICs, seems to be comparatively of recent origin. In the Indian context, Dr. S R Ranganathan's Fourth Law SAVE THE TIME OF THE READER has similar implications as are advocated in the TQM process [4]. The focus, even in 1931 was on the customer, symbolized by 'user satisfaction'.

LICs, over times, have operated in relative isolation, as mere storehouses of knowledge. They were managed by so called caretakers, obsessed with internal processes and controls than user needs and satisfaction [5]. Competition and users turning to other sources for their information needs were unthinkable. To cope up with the increasing demands from the customers as well as the pressures from the environment, there was a left need that the LICs should reorient themselves keeping the customer in the focus. TQM, incidentally is a philosophically strong approach adopted by organizations (including LICs) to operationalise the customer centeredness.

TQM IN LICs AND SUSTAINABLE DEVELOPMENT

In keeping with the above scenario, LIMs will have to develop strategies and mobilize their resources in such a manner that they are able to :

5.1 gauge the requirements of their users more accurately and precisely;
5.2 cater to the exact needs of such users; and
5.3 remain cost effective in every area of operation by doing things right the first time, everytime, all the time.

The above is possible if LIMs become responsive to the following agenda:

5.4 Understand the TQM process.
5.5 Develop TQM as a strategic focus to effect continuous improvement in various activities and services of a modern LIC, encompassing acquisition, organisation and dissemination of information.
5.6 Appreciate and overcome barriers in continuous improvement in the context of LICs.
5.7 Make continuous improvement a way of life for everyone involved in LIC in any organization.

While the LIMs are deluged with advice as to how to satisfy the complex and ever increasing information needs of their users, the LICs are looked upon as out-reaching as well as revenue generating centres. Needless to point out that the LICs were, one time very well accepted as cost centres to cater to the information needs of their respective (mostly internal) clientele. This situation gets further compounded when the question of a resource constrained regime comes into the picture. LIMs have, in all earnestness started taking active interest not only in building a strong image for their LICs but also in developing their resources, facilities and service, exactly in accordance with the needs of their users. This approach is finding increasing acceptance among the library authorities as well as library users who are constantly subjected to several pressures including the ones posed by resource constraints.

HOW TO GO ABOUT?

Adoption of TQM approach by LICs particularly as illustrated below in the context of Dr. Demings 14 points [6], seems to be one of the timely solution to help them not only grow and develop meaningfully but also sustain their growth and development:

6.1 Starting with initiating and orienting their activities and services (aimed at achieving the basic objectives of their parent body, as emanate from

their respective mission statements), the LICs should keep on constantly formulation and fine-tuning their strategies, action plans and service for ensuring their effective growth in a sustainable manner. Formulation and periodic review of LIC mission statements, objectives and function in accordance with the mission/mandate of the parent organization, is what is implied in the message.

6.2 Attempting at newer ways of doing things and documenting the processes involved will help LIMs to find and implement better ways of doing those things. Instruments like Acquisition Policies, Library Manuals, etc. will be helpful.

6.3 Sample checks rather than mass inspections, will facilitate delivery of quality products and services. Regular interaction with and periodic feedbacks from various user constituencies will prove useful. Proper identification of needs, wants and demands of the clients will facilitate delivery of tailor-made products and services.

6.4 Achieving and providing quality should minimize and not maximize the total costs. Identification of client base in internal as well as external environments and being conscious and aware of the competitors will lead to optimal utilization of rich learning resources in a cost effective manner.

6.5 Being innovative will help LIMs bring in quality. Careful examination of the processes involved in the service delivery will eliminate errors/ wastages, etc. Designing and re-designing systems and procedures to have user orientation in-built in them will be useful.

6.6 Ensuring continuing education and training for the internal customers in crucial to the success of providing quality products and services. Not firing, but training of existing team members will help them cope with learning new ways and techniques of doing things. Developing staff to understand and be responsive to client needs will lead to successful results.

6.7 TQM calls for top bottom approach. Leader has to show the way and set an example to be followed by rest of the team members.

6.8 By driving out fear from the team members, their active contribution to the continuous improvement cycle is facilitated, a great deal. Fear of punishment (or action) can act as a barrier for the team members to contribute their bit to the system in an open environment.

6.9 By breaking down barriers between staff and their work areas (like acquisition, processing, services and so on), both internal as well as external customers (in the TQM process) are benefited as the system is held and used in an integrated fashion.

6.10 There is no point in raising the expectation level of users, when it is sure that howsoever hard one may try, available resources will not permit meeting such higher levels of expectations. Cutting the coat ac-

cording to the cloth seems to be a better preposition, under the situation.

6.11 In a quality paradigm merely fixing members or numbers or numerical targets /quotas does not bring in quality. Shelving 100 books per hour may not bring in quality but shelving books correctly will do so. LIMs will have to ensure that the reputation of information services and products offered matches with the organizational reputation.

6.12 Encouraging and prompting operational hands to come out with probable solution for problems (if any) related to their work areas, will firstly result in a confidence, contribution and involvement building measure and secondly relieve the LIMs to spend their precious little time (that they have) on other important library development measures. It makes little sense for an LIM to dictate remedial measures for a routine circulation related problem without seeking useful inputs/solutions from the concerned operational hand.

6.13 Avenues for heal their career growth and overall developmental aspects of the team members create congenial environment for their committed involvement in achieving user delight and that is what TQM advocates for.

6.14 Finally, for achieving the desired results, it is a very essential to put into action a very well thought out strategy or plan. Initiation from the leader and involvement of the team will make it happen.

OTHER APPROACHES

LICs have, over a period of time, build rich learning resource materials. These remain largely underutilized as their use is generally limited to the clientele of the organization of which the LIC is a part. In such a scenario, while on the one hand there is an increasing demand for availability of right information, on the other, it is not possible for everyone to go in for huge investments in terms of developing appropriate information infrastructure. Hence out-reaching is the solution to bridge this gap.

LIMs will have to take up the challenge of looking out for ways and means to increase their client base in the external sectors and open up their resources, facilities and services to meet the information needs of the clientele in those sectors, of course, without, in any way, jeopardizing the interests of the internal clientele. For this out-reaching measure to be a success, LIMs will have to fine-tune their resource development and utilization policies to meet this challenge.

OVERCOMING BARRIERS

8.1 Misunderstanding

LIMs still fee that provision of library and information services is a social responsibility and adoption of approaches like TQM may result in commercialisation of their services or mere publicity or publicity or public relations.

8.2 Attitude

LIMs have been expressing satisfaction when they have been able to provide the information to the client as per his/her specific request. Attempting something beyond that is, what is required in case the LIMs intend bringing TQM orientation in their LICs. This means a major shift in approaches of the LIMs is required for the purpose.

8.3 LIC vs its Parent Organisation

Since LICs generally exist in relation to their parent bodies, they are viewed as a sub-systems of the main system. Hence TQM will find its way in the sub-system only when there is such an orientation in the main system itself. Within the sub-system itself the approach has to be accepted by all involved rather than leaving it to be the domain of only public relations staff like Circulation and Reference. It will yield more encouraging results if everyone involved in the sub-system is groomed to appreciate the client orientation.

8.4 Systems & Procedures

LIMs, because of various well known compulsion like physical verification, audit, etc. have been more concerned with storage and security aspects of the information rather than its use. The methods, systems and procedures followed in the LICs are therefore, more biased towards this aspect rather than the use or user aspect. This also has to change. Systems and procedures should lay more emphasis on the use and the user of information rather than on other aspects.

8.5 Free Concept

The concept that information should be made available free has to go as it costs quite a bit to acquire, organise and retrieve it. In fact, in view of the

utility of information, the thinking should change to the one where the client should be happy to pay for it.

CONCLUSION

It is not that all TQM initiatives are success stories. Such cases are not to turn back on the concept and discard it. Instead they provide enormous learning opportunities. As a noted management consultant has put it. If TQM fails it is because of the errors in its implementation; the approach itself is not flawed. Implementing TQM as a program will doom an organization to eventual failure. A programme has a beginning and an end; it does not change the basic approach of a company to running its business. If TQM must succeed, an organization should integrate its philosophies and practices into the day to day running of its business {7}. And definitely, TQM is a human relations oriented philosophy which requires fundamental changes in people management, treating them as an ever appreciating asset.

In sum, a change-over, as advocated above, in the LIC context, would call for : (i) sensitizing top management to TQM approaches; (ii) constant interaction between the user, producer and provider of information; and (iii) training and retraining of LIMs in newer ways of identifying and understanding the user and his/her requirements.

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SUSTAINABLE LIBRARY MANAGEMENT WITH SPECIAL REFERENCE TO COLLEGE LIBRARIES

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Abstract The author describes the development of college libraries since last fifty years; Highlights the problems being faced at present; Suggests ways in which libraries can become more effective by adopting more creative approach to planning; Suggests some measures through which libraries can control and change their environment by enhancing financial and manpower resources. Advocates need for collection development policy and need for electronic devices to face the challenges of 21st century. The paper is based on the literature available and author's experience in the field.

INTRODUCTION

During last 50 years, the number of colleges has gone up to 8613 (1994-95) from 533 (1947). Colleges in India function a the principle centres of higher education, which accounts for 87.8% of undergraduate and 56.5% of post-graduate level enrolment. The number of colleges went on increasing every year with the expansion of higher education and now India has one of the largest education systems in the world. The quality of higher education in India various from place to place depending upon various /action role to play. Whether large or small, libraries are attached to almost all educational institutions. However, college libraries in India, particularly in various States are in pretty miserable condition. Majority of college libraries are illequipped and under staffed. Norms prescribed by "Ranganathan Committee" U.G.C. have not been implemented and libraries are forced to function in static situation with limited man power and accommodation.

The whole exercise of establishing a library and spending a large amount of money every year is going waste. Resources are not utilised well. Readers are not satisfied with the services. Enrolment in colleges have increased many fold, due to academic expansion in terms of courses offered, while the

standard of libraries is declining day by day, in quality. Libraries have not developed in resources and services as compared to the requirement of higher education.

On the other hand, life style of people has changed. Things are running fast. There is shortage of time everywhere. Effect of mass media, information technology, information explosion, have brought drastic changes in the behaviour of the users, who expect quick information. They are no more satisfied with documents, but want specific information. Users are not at all satisfied with merely lending services, which colleges have been providing since several decades. Change in pattern of examination and evaluation from descriptive type to objective type has also diverted the approach of the students. Apart from this change in users' behaviour, libraries in general are facing problems like :-

i) Inability to extent personalised Services to its users;
ii) Increasing cost of reading material and resource crunch;
iii) Information explosion do not allow any library to be self sufficient; and
iv) Rise in number of clientele totally dependent upon libraries due to stiff increase in cost of literature.

The ongoing process of administration of college libraries in this info-technical era, requires a practical ability in strategic management and planning on the part of the librarians. Flexible approach in management and administration is required to meet the challenges of new technology and limited resources. Finance and man power are the first and formost requirement for any operation.

To meet the above situation Vivekananda College, adopted some measures to generate finance and man power, which have proved to be quite helpful. Some other policies for acquisition, collection development have been adopted, which have proved helpful and have stood the test of the time. Use of electronic devices is in process in order to reorganize the library services, a detailed description of such measures adopted from time to time, is described in the forthcoming paragraphs.

RESOURCE GENERATION

Existing source of finance in colleges are :-

i) Grants from parent body.
ii) Grant received from central/state Government.
iii) Library fee.

Library fee, which varies from Rs.12 to 300/- from college to college per annum, constitute the basic source of finance in libraries. UGC recurring grant of Rs.15000 to 20000/- per annum is a very marginal amount and Non-recurring grants (UGC) are becoming a rare phenomenon, due to resource crunch.

Budget, being the backbone of any library, should be sufficient enough to serve the needs. Since library fee constitute the main source of finance, the amount of library fee should fixed and subject to review every 3 to 5 years. Keeping in view the requirement of finance for the Library. Students are the main beneficiary of library services. So they may as well contribute to the library funds, so that service to them may be improved. College library needs funds to operate, and can raise the desired amount according to its needs. UGC has given its sanction by asking the universities and colleges to generate their own resources.

Charges for photostat, bibliographic services etc. Can be levied to generate additional finance. In addition to this college library services can be extended to people residing in the vicinity on subscription basis. However, extension of library services in addition to its own clientele or community requires increase in the strength of staff, proper amendment of rules, and sanction from the concerned authorities.

In addition to library fee from their students, libraries can raise specific funds for specific purpose. Vivekananda College (University of Delhi) in addition to collecting 'Library and Reading Room Fee' to e spent on library books and periodical, collects Rs 39 per students, per annum, under 'Library Amenities Head'. The scheme, was started in 1985 with Rs.10 per annum per students. This way an additional amount of Rs.30000 to 40000 is collected every year, over and above the usual regular operational fund (recurring amount). This fund being a welfare society money does not lapse, can be accumulated as per needs. This fund is spent to meet such expenditures, which are, otherwise not admissible as per norms. The college is spending this fund on amenities for reading room such as room coolers, heat convectors, carpets, safe and chilled drinking water, cleanliness, astheties, repair and replacement, and even on staffing, in case of dire necessity. This experiment has proved to be quite helpful, some other college under University of Delhi, including Central Library, Delhi University Library System has started raising fund on the pattern of Vivekananda College after 1989. Library fee as well as 'Library Amenities Head', both are subject to review by the college from time to time and amount is raised after every 5-6 years, as per the requirement. The college may plan to raise funds for computerization of library in the near future, if sufficient financial support is not received from the government. This way constraints of finance has been removed to some extent.

MANPOWER MANAGEMENT

Staff, though an essential link between collection and users, colleges, are starved for staff, since quite long. Libraries are not able to face the volume of work, which has increased with the expansion of colleges, the number of staff, student and faculties, etc. Over the years of some new fields of library operations have emerged like, maintenance of Book-Bank, need for maintaining departmental collection, reprographic services etc.

In order to overcome the situation, an experiment has been done by Vivekananda College. It has started allocating and spending some amount of operational books grant, on processing of books after increasing the library fee slightly. Initialy some professionals or semi-professionals were engaged on daily wages basis to assist in the routine, out of this account. Afterwards, on the pattern of other fields. The college has started internship programme since June 1997. Fresh library science graduates are appointed under this programme and given training and work exposure to various library operations. This has proved successful in resolving manpower crisis to some extent. The interns are paid stipend out of library operational account.

In addition the library routine work has been simplified et. (1) Clearance is given only to final year students every year. First and second year students are allowed to appear in the university examinations without obtaining clearance from the library, This way they are able to avail library services during their university examination and also during entire summer vacation. (2) Priority collection development is given instead of stock verification, which is quite a time consuming job. (3) Catalogue cards are straight away typed by the typist. This also saves manpower in routine.

ACQUISITION AND COLLECTION DEVELOPMENT

Collection is obviously the most important basic source, upon which, utility of any library depends. Collection has to be built in relation to the academic needs of the users, There is no scientific basis or policy for collection development in colleges. Books are generally acquired through booksellers on approval basis or through publishers catalogue by various heads of departments. Librarians have usually no role to play in the entire book selection process. There is need to build collection on utilitarian point of view. Some policy, in this direction, needs to be evolved to work as a guiding factor. Few policies, which have been in practice in Vivekananda College (Univ. of Delhi), over the years, have been found to be helpful in collection growth. Necessity of formulating these was felt through practical experience.

i) Purchase of Reference books/Generalia

Although colleges do not have sufficient funds to purchase costly reference books, but a few reference books must. So far as reference queries are concerned a college generally, until these are directly related to curriculum. Hence, there is no need to build up a representative, wide and up-to-date reference collection. Still all types of reference books related to course offered by a college and generalia must be there. These may be updated as per the requirement and use.

Collection of a college library should cover all general aspects such as religion, philosophy, palmistry, astrology, arts, drama, biography, health and hygiene. Even if these subjects are not directly offered in the college, the coverage has to be broad and wide. This way wide interest of library clienteles can be cultivated. At the same time it may serve some basic requirements as a library will be in a position to disseminate information on wider aspects.

ii) Text Books

Over the years of working it was observed that a single title occupied almost entire shelf, which included subsequent editions of the same book. Text books become redundent very often as and when courses of study are changed and revised editions appear. Hence a ratio of q0 books per 100 students was fixed as a norm. Maximum limit of a single text book to be purchased by the library was also fixed at 20 copies. In case of text book pertaining to any literature number was fixed at two to five books, irrespective of number of student likely to use them. Logic behind this decision was, that these being anthologies, are cheaper in cost. Hence students can afford to buy them. Moreover, all students should have their own copies of such books, as these are required to be read thoroughly. Library will never be in position to buy as many copies as required by the students. So far the thought content of these anthologies are concerned, they have no lasting value. These also become redundent very soon as there is change in option or syllabus. Like literature a limit of 2-5 books for short value type text books has been fixed for library purchase. Those titles such as income tax, company law, Indian Economic, sales tax etc have very short life span of one to five years. Such books loose their value as soon as subsequent editions of these come in the market.

iii) Duplication of Titles

Thorough checking of books before ordering is required in order to avoid purchase of duplicate books, until required for specific reason. This way library will be in position to build up a wide collection.

iv) Paper Back And Low Priced Editions

A policy has been adopted to buy paper-backs or low priced editions. If available in the market. This was done so, after experiencing that there is a lot of margin between paper-back and library editions which varries from hundred rupees to two hundred and fifty rupees. This way a library can increase its buying power.

WEEDING AND STOCK-MANAGEMENT

In addition to building collection reasonably, it also essential to maintain them properly. Over the years collection in most of colleges have grown But weeding operation has not gained attention. Stacks in libraries bear a stale look. Most of the stack area are occupied with dead books, which are rarely used. Useful books are lost in the crowd of books. Such low utility books occupy valuable space area and demand maintenance in terms of cleaning, while most of the libraries are facing paucity of space problem. Poor maintenance of stacks does not allow optimum utilization of whatever meagre resources colleges have. Some initiative has been taken by Vivekananda college in this direction. Writing off unservicable books has been taken up as a regular operation. In addition to this, the college after completing 25 years of its inception has intiated reviewing its collection (particularly text book) in each department for writing off obsolete books from its collection. The year 1990 was selected as a cut off date. A list of text and other books, purchased before 1990, which are not used at present is prepared and put up before each Head of Deptt to obtain their views on weeding. The process of weeding is on and it is contemplated to make weeding operation a regular feature, after a gap of 5 to 10 years. The college adds nearly two thousand books per annum. By making weeding operation a regular feature, it may be able to maintain a lively and comparatively small collection in the college library. This will curb untidy growth and help in solving space and maintenance problem also, to some extent.

REORGANIZATION OF LIBRARY SERVICES

So far as library services are concerned, college libraries are serving merely as lending centres, that too without efficiency. Most of the important books remain issued on loan. There is no infra-structure to call them back and make available to others. Main hurdle in increasing library services is the staff structure. Which consists of mostly attendants. At least some basic services needs to be provided in college libraries. Due to change in attitude of the library users and multifold growth in literature coming in various formats, librarian's responsibility has changed. New techniques are being evolved to render greater assistance to users through computer, data bases, data-banks, C D Rom disks, tapes etc. These info-technological developments have definite influ-

ence on college libraries. Librarians with conventional techniques are out of date professionals.

The traditional method of communication of information to the users have failed to keep pace with unending production of books, serials, C D Rom, Video-cassetters, tapes etc. Volume of information generated every day can't be handled without electronic devices. The whole system of library and information service in the college needs reform and review.

With the fast changing modern technique, use of computer has become an indispensible necessity in every sphere of human activity. Computerization not only helps in smooth functioning, but ensures better efficiency, productivity and speed in management of academic libraries. This can handle the continuously increasing work-load by streamling the library operations at a much faster rate. It saves time and labour in handling routine and repetitive job. In one of the study conducted by Dr. Pandey, S.K.Sharma of UGC, New Delhi, time taken for processing of 500 books manually and through computer was 106 hours and 60 hours respectively. Computerization is likely to have the following advantages :-

(a) Reduction in manpower needs,
(b) Improvement in efficiency of working;
(c) Expansion of library service;
(d) Proper and optimum utlization of library resources; and
(e) Participation in network of libraries like 'INFLIBNET'

The application of computers in college libraries can be in the following two areas:-

i) For house keeping jobs such as circulation, acquisition, cataloguing, serial control, management etc.
ii) Information storage and retrieval services such as reference, CAS,SDI etc.

It is a high time that the college librarians should examine the facilities and introduce automation to suit their needs. Existing staff should be trained to gain confidence to handle new technology. A starting can be initiated in this direction with minimum existing resources available in libraries.

The objective of automation has to be worked out on the basis of what is needed by the users and not on the basis of what is ideal system. Computerization can be planned partially even for one aspect i.e. information storage and retrieval to start with, if resources do not permit full automation. It can be further expanded in course of time. It is not at all essential at college level to have all the facilities such as (a) open public access catalogue (opac) (b) Facili-

ties to search international data-base, internet or (c) CD-Rom system at the initial stage to make it more simple. In the begining a decision to cover the whole collection or start with a cut off date can also be taken. However there are certain problems in this direction. Most of the college libraries do not have sufficient funds to have proper computer facilities. There is lack of proper training or practical exposure. Available softwares are very costly. It is also difficult to keep pace with fast changing technology with meagre resources. SHII, computer are being used in several libraries either paratially for data storage and retrieval or fully covering entire library operations. It has been experienced that even partial use is helpful to a great extent. Data storage and retrieval operations will help in processing of books and giving reference, bibliographic and C A S Services. Activities can be expanded at a later stage, as per the need and resources available. Automation and networking experience of I.G.M. Library, University of Hyderabad can be a good example in this direction.

A close look towards automation requirement of a college library having upto 50,000 collection reveal that it involves an expenditure upto Rs 4 Lakhs. This amount includes cost of infrastructure i.e. hardware, software, scanner, ets. and all expenditure incurred upon data entry and 'Barcoding' of the entire collection. Since college libraries do not have sufficient trained staff, the computerization project can't be handled without outside support. It is presumed that once the system is streamlined with the help of out-side agency the existing staff would be able to handle the operations in routine, as it requires only working knowledge at a later stage.

CONCLUSION

College libraries can face the challenge of the future generation by reorganizing their ways of working and improving library services. Application of computers in information retrieval its catching rapidly. Colleges can't afford to lag behind. The problem associated with computerization should be identified, objectives defined in view of the resources and need. A well organized information system needs to be provided to academic communities. Then only the resources of libraries can be utilised in effective way. It will also be helpful in resource-sharing and networking projects. In this manner, college libraries by adopting some strategic change in working may be in a position to provide effective teaching learning information support to colleges in future.

Library funds needs to be utilized in more judicious way. By introducing some measures college libraries may achieve, their objective in more effective way, and make the library more visiable within the organization by getting recognition to the unique and vital role played by a library in a college set-up.

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SUSTAINABLE MANAGEMENT OF LIBRARY AND INFORMATION SYSTEMS IN AGRICULTURAL UNIVERSITIES

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Abstract The author explains the importance of library and information systems in agricultural education, research and development. Points out the challenges offered to library executives by information explosion, developments in computer and communication technology, and information awareness. Opines that agricultural library systems as they exist now are not sustainable. They have to be totally recast and made more productive to the needs by application of modern management techniques. Discusses in detail the concept of sustainable library management, its functions, techniques, TQM, and Automated Library Management Information System. Further stresses that the success of the library system depends on how appropriately it could conceive the agricultural university's information requirements and develop appropriate strategies for providing effective information, support agricultural research, development and extension.

INTRODUCTION

The production of food grains per capital in India has not shown any notable change during this century. It also found that growth rate in agricultural production is decreasing in nineties. The hope lies in application of new technologies, which depend on effective information services provided by efficient library systems. Information is a vital resource. Giving a stunning vision of future. Alvin Toffler discusses in powershift, about force, wealth and knowledge the three sources of power at the edge of the twenty first century and explains how knowledge is gaining importance over other sources of power with every fleeting second. The most important powershift of all therefore is according to Toffler not the shift from one person, party or one institution to another. It is the hidden shift of the relationship between force, wealth and

knowledge. This explains why the battle for control of knowledge and the means of communication is heating up all over the world. In future nations controlling information will rule the world. Now it has been universally realised that no educational or research organization in today's world can survive without an efficient library and information system.

IMPACT OF INFORMATION TECHNOLOGY

Libraries are the institutions on which the impact of technology related to recording storing or disseminating data or information is first felt. Paper, printing press, camera, typewriter, computer, telephone, fax machine, modems, communication satellites etc., have immediately on their invention influenced librarianship and library services tremendously. The change of recording and storage mediums from cave walls to lacer disks can give a good grazing ground for any interested historian. Now library and information technologists predict a paperless society and an electronic future for libraries. At least in the libraries supporting research this is going to become true very fast and before we could realise it they will shed away their traditional form. Librarians are moving away from the idea of building up large collections to facilitating access to maximum information. Speedy access to information is more important than storing information or documents. Information superhighway and Internet enables access to maximum area of the whole universe of knowledge from any place at any time at the touch of a finger.

1.1 PROBLEMS OF AGRICULTURAL EDUCATION

Higher education provides trained manpower in different areas of societal needs. It is the repository of knowledge and instrument of change through people for the good of the society. It contributes to national development through dissemination of specialized knowledge and skills. It is, therefore, a crucial factor for survival. Higher education has made a substantial contribution to the development of modern technology leading to increased food production, industrial development, revolution in communication technology and advent of live-saving medical techniques. It is said that it has not paid the society the due dividend. Its successes are shrouded in silence and failures spotlighted in notoriety.

Pinpointing the seriousness of problems in higher education World Bank's study opines that the current situation is not sustainable in the medium and long term. According to World Bank, higher education is in crisis throughout the World in terms to low quality, inefficiency and inequity. Further, it adds that there can be doubt that without serious attention to the institutional

level, i.e, management, leadership, the use and accountability of public resources, etc little progress can be expected in higher education reform. UNESCO points out three important worldwide trends-enormous quantitative expansion which nonetheless not led to increased equality of access and has not resulted in a proportionately large product of engineers and scientists; inadequate diversification of institutions and academic programmes that do not comply with minimum standards and have not led to significant educational innovations; and expansion in an increasingly constrained financial environment.

Our higher education system has rapidly grown both in size and accessibility after independence. It has emerged as the second largest educational system in the world with 223 universities and more than 8,500 colleges with 55 lack students in 1996. Organised instruction in agriculture at the university level was also introduced in India from the beginning of the twentieth century. Immediately after independence it became clear that our agricultural underdevelopment was largely the consequence of institutional under development. It was realized that lack of both trained scientists and effective institutions was resulting in under-utlization of natural resources and in many cases wastage of investment capital. It was also clear that increased food production was imperative to India's survival, and so application of science and technology in agriculture was an inescapable necessity. Hence Government of India set up expert committees to review the then existing agricultural research and eucation systems. The earliest of this; popularly known as the Radhakrishnan Commission, recognised the inadequacy of existing system and strongly recommended the establishment of rural universities. The commission has clearly identified the role of library and information services in determining the quality of education and research and recommend the development library as heart of all academic work in a university. There are now 27 state agricultural universities (SAU), one central university and 195 colleges. Total admission capacity is about 40000 students. There are also about two hundred research and educational institutions under Indian Council of Agricultural Research. The total number of scientists working under all these comes to about 53,000. More than 90 per cent of education research and development activities in the fields of agriculture, animal sciences, biotechnology, nutrition, economics, rural sociology, natural resources and related areas are undertaken by these group of institutions. Hence for research in these major areas traditional universities and other organizations have to depend on the information generated by these institutions.

But our library and information systems in State Agricultural Universities (SAU) which is an important factor for ensuring quality of education, research and development are also beset with serious problems. They are inflicted by anxiety and perplexity, discontent and indiscipline, purposelessness and disobedience, violence and perversion which has become common in cam-

puses. In terms of efficiency, productivity and utilization of resources, they have completely broken down. A vicious cycle of declining academic standards has eclipsed library and information systems in SAUs also.

NEED SUSTAINABLE MANAGEMENT TECHNIQUES

Library and information systems in SAUs can be made more productive and responsive to needs of agricultural education, research and development if they are managed on the principles which have led to achieving excellence in many industrial and non-profit organizations. Different commissions and committees constituted for improving library systems in universities have stressed the environment of organisational system and management practices based on contemporary societal environment and requirements.

In west the library and information systems managed through the application of modern management techniques have excelled in realizing their goals. Unfortunately in most of the SAUs library management has been considered any ones task. They hardly utilises the well trained management concepts in library systems. It is observed that the decision making personnel are hardly endowed with the requisite professional knowledge, managerial skills and appropriate temperament. Library managers tend to believe that knowledge or rules and regulations is sufficient to manage effectively.

The management principles relevant to library systems cannot remain static. They tend to change over different periods as a result of changes in the objectives, size, societal aspirations, scope of activities, and practices of management. In earlier days, teachers used to be the managers of the collections academic institutions where a few disciples used to come for higher level education. Library management derived its techniques from the obedience of the students and academic pursuits of the teacher librarian. Even the libraries of Takshasila and Nalanda Universities has the flavour of this principle. This period was dominated by the intellectual library managers designated as Sarasvati Bhandarikas who proved their worth in academics. They managed libraries by management principles which stressed intellectual excellence. Most of the techniques were paternalistic in nature.

ADJUSTING WITH CHANGES

Present day library systems are the outcome of the constellation of worldwide changes and are encountered with the phenomena which were never anticipated in the past. The university environment is facing serious changes. Increasing thrust on education crowded the universities. Democratic secularism posed entirely different challenge. Students and their parents started ques-

tioning the relevance of education. Politicians entered universities to propagate their ideologies. (Worldwide explosion of knowledge expected universities to be sensitive adsorbates and it gives very important role for university libraries). Liberalization, globalisation and privatisation have virtually converted universities to business firms struggling to raise adequate finances and survive in competitive environment. Information technology and electronic revolution have created a dominant class of neoilliterate. Worldwide explosion of knowledge expected universities to be sensitive adsorbents and it gives very important role for university libraries.

EFFECTIVE LIBRARY MANAGER

Merely understanding the meaning of management is not a sufficient condition of becoming effective library manager. Library executives must have certain orientation in management principles and possess managerial skills. As a university library is different from other divisions of the university or business organizations, the management practices developed elsewhere cannot be transplanted as such in libraries. What is required is adaptation of management principles in the library and information systems as per the emergent situations.

University library management is the process of planning organizing, leading and controlling the work of staff of the library and information systems and of using all available library resources to reach stated goals of the university. The Library managers direct the utilisation of all the resources of the library, its finances, equipment, information and people to attain stated goals. This means that managers of any library and information system let it be that of an university, a college, a church, a hospital etc. try to attain specific ends. These ends are of course unique to each library system. Whatever the stated goals of a particular system may be, management is the process by which these goals are achieved. And the managers are those persons who get these goals accomplished with and through people.

4.1 CONCEPT OF LIBRARY MANAGEMENT

Library management can be understood as the process of identifying the objectives and ensuring their achievement through the solution of problems and utilisation of resources with the application of appropriate management techniques. Library and information systems are designed to achieve specific goals. The task for the practitioners and thinkers is to continuously study the emerging situations, revise goal-structure. search appropriate strategies and evaluate the performance. The foremost task of a manager is to clearly identify

these goals. At a particular moment, say, a university library may be pursuing the goal of all round development of information support systems for students or research in some specified fields. After pinpointing the goals, one has to diagnose the situation both existing and anticipated. This necessitates proper understanding of the system and environment around it. Keeping in mind the emergent situation, library manager should apply suitable management techniques, in order to achieve stated objectives.

LIBRARY MANAGEMENT FUNCTIONS

The performance of management functions requires certain level of subtlety which ensures excellence. Peters and Waterman attempted to identify the attributes of some excellently managed US institutions which were found to be 'brilliant on the basics'. Rather than having some secret strategy or unique market situation they simply did the most fundamental organizational tasks very well. The study brought out eight attributes that determine the management style of these institutions. These are listed below:

* a bias for action;
* staying close to the customer;
* autonomy and entrepreneurship;
* productivity through people;
* hands-on, value driven;
* stick to the knitting;
* simple form, lean staff and
* simultaneous loose-tight properties.

Library management, after sensing, identifying and structuring the problem engages itself in the process of information gathering development of alternative course of action and selecting the appropriate action for implementation. At the first instance, it structures the problems objectively. A well defined problem is half solved. Therefore, a library manager has to clearly define the problem. Problem solving process is primarily decision making process and requires systematic understanding, analysis and synthesis of environment on the one hand and the matching of organisational capabilities with it on the other.

5.1 FEATURES OF LIBRARY SYSTEM

University library organisation is different from any other business, services and nonprofit organisation. It is a 'knowledge-industry'. Of course, it

is structured like any other social institution but it is characterized by certain distinctive features. Due to these distinctive features, library managers face certain unique problems and new challenges. The man features which distinguish a university library from other institutions are autonomy, indeterminate and unstructured activities, inbuilt output evaluation, transformational and qualitative nature of objectives, human dominated system. Of this except the last feature all are almost the same for library and information systems also.

5.1.1 Autonomy :

Theoretically speaking, an SAU is a state within a state. It is built on the principle of autonomy which affects the style and structure of its governance. The main job of the government officials is to implement the constitutionally sanctioned mandates of politically accountable officials and legislators. But university professors, have the freedom to think. This feature is reflected to some extent to various divisions under SAU of which library is the most important which will be headed by a statutory officer whose powers will be clearly defined in the Acts and Statutes.

5.1.2 Indeterminate and Unstructured Activities :

The structure of a SAU library and information system is different from other organisations because of its indeterminate and unstructured activities. It traditionally carried on two avowed activities and two implied activities. The core activity was, and is collection storage and dissemination of information. Research has been integrally related to information systems. There are many less explicitly recognised activities also. The specific role SAU library has to play is to support learning, research and development activities in the adjoining community which will mutually inter-link with field programmes of all studies. Through extension, relevant knowledge, skills and values are transmitted to the adopted-opted community in an adopted area. The nature of activities pursued by the library and information system, ultimately determines the structure of its organization. There develop two types of structures- the academic structure, made up of divisions, branch libraries in constituent colleges and service outlets in research stations and the administrative structure, responsible for supporting services and business affairs.

5.1.3 Input Output Evaluation :

The product of business organisation is evaluated by the consumers. But a university library system evaluates its own output through the contributions of the university for agricultural development through its education activities. There

is hardly any other organisation which evaluates its own output. Agricultural Universities also evaluates their programmes though its own output and the reactions of press government and public.

5.4 Transformational and qualitative nature of objectives:

The business firm strives for profit oriented objectives while SAU library is engaged in the discovery of knowledge, transmission of knowledge, and support to application of knowledge to solve the societal problems. In a well managed business organization, objectives are easily translated into operating plans. In case of library and information system, planning for its core activity of supporting the university in teaching and research is more difficult. The formulation of university wide plans relating to different activities is less feasible due to qualitative nature of these activities and non availability of objective data for decision making. In addition, and academic freedom of the SAU system produce different styles and approaches for solving similar problems. Likewise, though we can generalize the objectives of SAU library and information systems, yet it becomes cumbersome to identify certain quantitative objectives which can be precisely translated into its goals and operational plans. It does not base its organisational activity on the basic of existing limited knowledge but seeks more knowledge which is subject to change and is qualitative in nature.

5.1.5 Technology Dominated System:

In an educational organisation, human resource forms basic input for further operations. In libraries, as in other organisations, physical resources or technology also forms input and unlike in other systems human resource also plays an equal role. Unique feature of an institution of higher learning is that its inputs also plays an equal role. Unique feature an institution of higher learning is that its inputs are human beings, machines are human beings and outputs are human beings and hence the same is reflected in information handling scenario of the SAU also. The presence of human element at all levels of system's functioning, complicates the management process.

LIBRARY MANAGEMENT TECHNIQUES

In view of the above discussion, we find that management of an SAU library and information system which is also a higher education system is not a child's play. Even a military general, a successful industrial manager or a top level bureaucrat may miserably fail in a managing library affairs. The underly-

ing cause of such failures lies in the peculiar character of the organisation which requires different techniques of management. The effectiveness of SAU library management will depend upon the evolvement and application of suitable management techniques.

Based on peculiar characteristics of higher education institutions, emerging societal trends and available management concepts Verma has put forward the SOLVE model that includes the management techniques that aim at undertaking the task of solving educational management problems and achieving certain objectives. It can be applied to SAU library and information systems also. Each letter in SOLVE model stands for different set of management techniques: sharing, organization, leadership, values and easel.

6.1 TOTAL QUALITY MANAGEMENT.

While implementing these techniques, the concept of Total Quality Management (TQM) should be applied. TQM is a continuous process of improvement and it is about changing the way things are done within the organisation's life time. To improve the process, therefore, people must know what to do, how to do, have the right methods to do it, and be able to measure the improvement of the process and the current level of achievement. In an SAU library main characteristics of TQM will be:

* focus on the satisfaction of users of information;
* continuous improvement;
* building commitment to quality and relevance;
* open decision making;
* prevention of failures;
* empowering people and
* team building

6.2 SHARING TECHNIQUES

SAU library like the university in an open system and its objectives cannot be specifically determined in terms of quantitative targets. In order to move its parent educational organisation towards growth and effectiveness, it has to share its objectives, plans and operations with the academic and research community; share users aspirations and incorporate them in its operations; and share the thinking, feelings and actions of its personnel in order to set the direction of objective, plan execution and effectively control operations.

Libraries are not surrogate machines like the robots which do not rebel. They are abodes of culture where spirit of inquiry, questioning and disagree-

ment are deliberately fostered. Library managers have to be good communicators. They have to select and appropriate techniques of sharing at different levels units of analysis i.e. individuals, groups and organisations. Some of the sharing techniques are:

* team building to develop harmonious, cooperative and participatory work relationships;
* role analysis techniques to clarify the duties and responsibilities associated with a particular position;
* role negotiation technique to develop understanding for completing an assignment/task by means of negotiations and mutual adjustment;
* organisational mirroring to evaluate one's individual or departmental performance in terms of the perceptions held by the colleagues, students and administrators;
* developing inter personal competence to effectively interact with people for mutual satisfaction and performance;
* confrontation meeting to create consensual acceptance among the academic community about an organization-wide change;
* transaction analysis to create understanding how people relate with one another;
* management by objectives to set participatory goals for achieving organisational purpose;
* conflict management to manage conflicts with the objective of improving personal satisfaction and organisational efficiency;
* socialization to indoctrinate organisational work ethos and culture amount the students and employees entering into the institution and
* public relations to project the research accomplishments and other achievements of the institution in the society for establishing close linkage of college/university with the society.

6.3 ORGANISATIONAL STRUCTURE

SAU library is expected to help the university to achieve the broad national goals through specific local goals of certain minimum standards. The job of library management is to organize different activities by establishing authority and responsibility relationships through division of labour. Inbuilt mechanisms of peculiar complex relationships in library systems and environmental upheavals necessitate the evolvement of eclectic, dynamic and adaptive organisation. Organisation structure should be able to meet the requirements of a particular situation. It should include all factors which earn it effectiveness. SAU library performs different activities for the achievement of its objectives. We can classify these activities into the following categories :

* development of the information resource in accordance educational and research needs;
* human Resource Management including selection, development maintenance, appraisal and control of human resources;
* raising and procurement of finances and its utilisation;
* procurement and utilisation of physical resources;
* management of information/document related activities;
* evaluation, and improvement of the system generating goodwill and enhancing users faith in the organization;
* Coordinating the activities of the library with other departments and horizontal and vertical levels;
* creation of knowledge through research and
* reaching the users with the technology and expertise for solving their problems in accessing required information.

6.4 LEADERSHIP SKILLS

Leadership is the main component of this model which significantly determine the effectiveness of other components in this model. The Librarian being the Chief Executive of the University's library and information system is the key person whose imagination and insight paves a way for whole leadership in the institution. His most important task is to anticipate crisis. Perhaps not to avert it, but to anticipate it. To wait until the crisis hits is already abdication. He has to make the library system capable of anticipating the storm, weathering it, and in fact, being ahead of it. That is called innovation, constant renewal. One cannot prevent a major catastrophe but he can build a system that is battle-ready, and that has high morale, and also has been through a crisis, knows how to behave, trust itself, and trust one another.

Library managers should understand the peculiarities of different leadership styles i.e, participatory and directive and then adopt an appropriate style suiting to the situations. In library and information systems a leader perhaps has to concentrate more on issues such as providing of vision and direction, development of creating a suitable environment, promoting productive, inspired and vibrating institutional culture, and enlightenment by setting personal examples. He should possess the ability of assessing his own self, knowing his job and dealing with people. A true leader must have the spirit of sacrifice and the nation's well being in view. In order to perform his work effectively, a library executive must acquire certain managerial skills through experience and training such as:

* Planning Skill which is proficiency to decide future course of action by way of making choices, committing resources within a time framework;

* Organising Skill including identification, grouping and classification of different technical and administrative activities;
* Leading Skill that is the ability to understand and influence the behaviour of people towards the organisational task;
* communication Skill which means the ability to effectively communicate ideas and instructions, and developing feedback mechanism;
* Motivating Skill consisting of the ability to inspire others and create willingness to work;
* Liaisoning Skill that can help to establish linkages with different academic disciplines within the organisation and outside the world;
* Information technology Skill which gives the ability to understand and apply the computer and communication technology and electronic media which is very important in the operations of library and information systems;
* Decision-making Skill that is the ability to identify and define the problem, develop alternatives, select the decision and implement that decision;
* Human Relation Skill to work effectively as a group member and to build cooperative effort within the team he lives;
* Monitoring and Evaluation Skill which focusses at developing, monitoring and controlling mechanism based on well designed management information system and

Innovations and conceptual skill essential to have understanding about the functions of organization and visualising relationships between the organizational development and the environmental changes.

6.5 CREATING VALUES

All library and information systems will be having certain values which develop an organisational culture and traditions. These traditions many times become stronger bindings than rules. The values like national service, fairness, harmony and cooperation, courtesy, gratitude, etc, evoke an enormous continuity. The management should develop certain beliefs and values which bind whole organisation together for effective performance.

6.6. ENSURING EASEL

Easel, a basic and supportive element in the model suggested by Verma, It tends to generate high job involvement, high morale and job satisfaction.

However dynamic a manager may be, he will not be able to create a suitable library environment in the institution until he ensures certain infrastructural facilities. In addition, it is the formal rules and regulations and policies and plans which structure the organisational activities and facilitate the functioning of leadership. The thinking of educational manager on different issues such as users' participation in management, human resource development, etc will be evident from its organisational activities and strategies. Main components in Easel can be identified as under:

* Physical and Technological Systems the location of institutions, designing of facilities, departmental facilities, equipments and furniture, computer facilities etc;
* Financial Systems like Sources of finance including grants-in-aid, fees, donations etc; and their optimum utilisation;
* Long term and Short term Planning that covers identification of organisational mission, scanning of environment, resource analysis, development of appropriate strategies and operationalisation of plans;
* Political and Legal Framework including Understanding of educational policy, decision making bodies and laws affecting university; and political participation educational process and

Human Resource Management which focusses on the policies systems and practices that affect human resource in the organisation.

INFORMATION TECHNOLOGY APPLICATION IN SAU LIBRARY MANAGEMENT

Until recently, library executives have relied on only partial data to aid the decision making process, and that much of the management of library services has been based on professional values and opinion rather than hard evidence. This situation has been brought into sharp focus recently with moves to make services more accountable in their spending and, with the reduction in real resource availability, give rational justifications for the continuance of services. There may be a range of strategies for the protection and development of library systems, but all, in the end, demand more valid data on operations and effect to give managers and funding agencies a clearer picture of what is actually happening. Collecting and exploiting useful data is a time consuming business and this has meant that, in the past, library managers have either not bothered or have tried to do with minimal information. Where data have been collected for a number of different activities, they have often not been directly comparable, so that a broader dynamic model of library operations cannot be built up.

In this situation action research undertaken by the people who actually manage library services has become very important. If in the past this has been difficult to accomplish, we can now be more hopeful that solutions to problems can be found in our use of computers. We now have the technology totally to transform the management of libraries; the automated housekeeping system, which can be called the library management system, acting as the power house for information on all aspects of library dynamics.

7.1 DATA FOR MANAGEMENT

It is possible, to identify the major headings under which data should be gathered and see how a library automation system might be used to aid the collection and management of such data. The data types can be divided into categories; system, environment and use data.

7.1.1 SYSTEM DATA:

System data concise of all the information about the library itself and how it operates. They include financial data on budgets and their use. How is the money spent during the year and information on numbers of staff in service points, types of duties etc. It will also contain data on physical resources, such as numbers of service points, their size and the services offered. System data have always swirled around and have been used to research the pathology of library dynamics. We have had to be accountable for expenditure and manage staff in an orderly way. System data often lend themselves to simple comparisons and statistical analyses. They can measure efficiency of resource management, which is a component of the total library model.

7.1.2 ENVIRONMENT DATA:

Environment data have become more important to us in recent years. We have come to recognize that knowing the potential clientele for one's library service is an essential component in its effective development. Libraries have begun to use user profiles as a prime tool in the management process and have linked profiles to surveys of user satisfaction to provide a feedback loop between service delivery and effectiveness.

7.1.3 Use Data:

Use data represent the interaction between system and environment data. The most obvious manifestation of these data are the issue statistics which

libraries collect and count, all over the world. One may add to this, data on in-library use, CDROM searches, and reference enquiries to indicate the take up of services provided. It is an interesting reflection on librarians' lack of motivation to explore decision support information that despite the fact that many automated systems offer some flexibility in the analysis of use data, few appear to make regular and effective use of such facilities.

All these suggest that what is necessary is to change attitudes, not provide better research tools. Some librarians, of course, have done work and can show that data have an important role in the planning and management of service. However, there is little linkage made between the different types of data, and the role of the housekeeping system is usually no more than to produce issue statistics in raw summary form. And out there, there are many libraries which use very little hard data to manage their services, whether or not they possess a computerized system. We have to change to improve this situation.

ALMIS

The solution is to put all the data possible into a computer and then extract all the analyses and interactions anyone has ever dreamed of. That is just what we should aim for a system that does all the monotonous work and gives us all the facts. But in reality we also would have to work hard to get close to such a position. Within the next few years we will start to see Automated Library Management Information System (ALMIS) developing because libraries have got their acts together and made that happen.

8.1 REQUIREMENT FOR ALMIS

To grasp what ALMIS will be like we must establish some basic principles. We must assume that a stand alone minicomputer system is available with adequate processing power and storage, connected to a real time network available at all service points for public and staff use. The system must also possess a database management system capable of dealing with a variety of data formats and able to make useful linkages between them. Within this system there must be the framework to include every data set relevant to the dynamic modelling of the library. First of all, a great deal of data is already available, some in machine readable form. Financial data on budgets and expenditure are normally managed with financial information models. Such data could be downloaded into the local system. Then data on the users -scientists, students, farmers etc., are all probably available within the library service. It is now frequently used in the production of user profiles. The ALMIS should, at least, provide the facility for libraries to collect data on types of user, e.g. age,

occupation, etc., since this information may be relevant to developing a dynamic model which is useful to decision making. On the other hand, more and more libraries, of all types, are taking an interest in actually establishing dialogue with users to assess, effectiveness of the services provided. The use or satisfaction survey is becoming a widely used tool and, if it is to aid decision making, will have to produce results which can be included within the library management system. If it to be a productive tool, it is essential that ALMIS contain data about service impact.

So, given the right data structure, a wide range of dynamic data could be included in ALMIS. In the library management system there will be data to establish sensible links and make comparisons between different libraries within the same organization. Further, one might except ALMIS to include tools for analysis. Most easily provided would be statistical packages which would take much of the drudgery out of experimentation and, if possible in the future, expert systems which would allow the system and the users to learn together, to share each other's experiences. It is important to remember that decision support information must be available from the lowest level possible for effective decisions. Present systems do allow data manipulation and analysis but they require some knowledge system-dependent query language. In future systems it must be possible for library managers to address their questions and hypothesis in their own language and get a sensible reply.

It should be obvious that the management of libraries could be transformed if ALMIS is available. Its creation and maintenance would certainly affect operating procedures since more data would have to be collected and input. Library management has always required information for decisions based on valid justifiable principles. But we have just not been very good at it. The ALMIS should be at the very heart of the decision making process, a feedback loop between objectives and performance. Nothing like it exists now, but for the sustainable development of libraries elsewhere, it should come into existence. Some librarians and some software developers are beginning to show interest in developing ALMIS. The technology now makes it possible to do all the usual 'housekeeping' things and still have spare capacity. There must be a shift from the present perspective of modular systems, doing things that look like traditional library functions, to much more integration of everything. Much is up to us as library and information managers to establish some consensus about what should happen and hassle the system developers. Libraries do have input into the future of systems development. In the coming years we will see a radical shift in the nature of the automated library system from housekeeping alone to a unified management and research tool which influences every decision made not only in the library system but in its parent institution the university.

SUSTAINABLE SAU LIBRARY DEVELOPMENT

The future of all major industries, agriculture as well as other fields of medicine banking and others are dependent on library and information systems, information explosion, growth of information awareness and information technologies demand a more dynamic and holistic approach to information. Information management has become a fast growing field. Paper is loosing fast its importance as a medium for recording and organizing information. Information technology has brought in new mediums with infinite possibilities. Librarians' ability to organize conceptually, to evaluate, to select, to filter and to channelise information system managers. The library manager of the future will be quite different from a librarian of today. In most libraries of the developed countries the employment title of librarians already remains changed to 'Information Manager'.

The change in library management scenario is to be recognised. The librarian as manager of information system is faced with accelerating change in both external environment supra system and internal organizational sub systems which affect the managerial process. Accelerating changes lead to increasing complexity, involving the manager more vigorously in maintaining equilibrium between the need for organizational stability, continuity and the need for adoption and innovation. Library manager has to act as a benevolent leader to facilitate an easy organizational and environmental change. Library executive have to rush to the occasion to meet the revolutionary changes brought in by computer and communication technologies and develop the SAU library and information system sustainability.

To conclude, the success of SAU library and information systems depends upon how appropriately they conceive university's requirements and aspirations, and develop appropriate strategies for providing relevant, timely information support speedily and efficiently. The SAU librarians with certain managerial skills and knowledge of management techniques stands empowered to manage affairs of the library and information systems of agricultural universities effectively.

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TOTAL QUALITY MANAGEMENT FOR LIBRARY AND INFORMATION SERVICES : AN OVERVIEW AND FUTURE CHALLENGE

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Abstract Change and challenges faced by the libraries of today and expected tomorrow is discussed; and how to cope with them by adopting `Quality Management' approches like Total Quality Management (TQM) in improving and refining the library and information services. The core components and their performance in TQM and how did `Quality Gurus' have advocated them is focused. An overview of the development of Quality Management Literature in last 10 years has been compared by analysing 2 Databases viz., ABI Information and LISA.

INTRODUCTION

Libraries of today need to be updated with the developments in the higher education curriculum and with changes in the skills and expectations of users and they are suppose to meet ever-rising expectations for the amount of services provided and the quality. Technological, educational and social changes make direct impact on higher education and bring more pressure on the libraries. Consequently, adoption of new technologies and integrated systems have been able to meet this challenges.

Cheap PC, incorporating graphical user interfaces, many operating packages are available at lower cost and steady growth in application of CD-ROM, development of network, E-mail Services, world wide web etc have

encouraged the widespread use of the internet tremendously, and networks are accessable around the world. Computer aided learning packages and computer based learning materials are used and valuable research collections are widely shared in digitized format; and they are hooked online rather than using CD-ROMs. This convergence of library and computer centres started operationing and the concept of information strategies is being adopted in many higher education institutions including library.

All these are causing significant pressure on library organisation, libraries are expected to adopt to this change quickly and develop such a culture which can be adoptive to change. Due to all these implications the role of library staff changed as facilitator plus tutor and advisors, who can enable library user to search for information more effectively. There "the library managers need not sit as a spectator, inturn they must ensure the best use of IT by critically assessing and by considering the needs of their organisation as a trend setter and status seeker"[1].

NEED FOR QUALITY MANAGEMENT

Economic threat to the libraries by rapid escalation in the price of books and journals, declining budgets, fewer resources constant growth, changes in technology and also users high expectations are some important factors which compel the libraries to provide more services with less library staff.

For this purpose we must apply sound and newer management principles to the library operations to cope with economic pressures, structural changes and technological innovation. Modern management techniques such as, management by objectives. Just-in-time, theory Z, Matrix Management, Quality Management and traditionally hierarchical structure to flattened structure are some of them. The future of the library "demands a more user oriented and flexible organisational structure that will allow the library's various components to be more self directed and more adoptable in responding to internal and external pressures"[2].

Libraries, since their inception are always putting sincere efforts to deliver the highest quality service; obviously for them adopting Quality management principles will be an added advantage, and allow libraries a more efficient ways of doing things.

Total Quality Management (TQM) initially used in manufacturing organisation, but not it is being adopted by service organisations, such as Air Lines, Banking Institutions, Insurance Co. and Health Care providers. However, the Libraries have just started to adopt and Shaughnessy remarks "the challenge rising the quality of Library services is perhaps one of the most seri-

ous, atleast talked about issues in the profession"[3].

Prevailing conditions are forcing Libraries to adopt the basis of TQM and "if the library did not pay attention to customer needs and did not provide content based value added services, the need for the library would decline in the years ahead"[4]. Naturally the library should give more priority to customers than collections. The quality management gives maximum customer care, granted autonomy, delegated power and acocuntablity by this new culture to complete and survive by improved productivity at less costs. Similarily, the librarians being mission oriented should encourage creative developments with systematic strategies to realise the expected goals and objectives. This sort of culture and total commitment to quality with certainly reap lasting benefits and profitability.

WHAT IS TQM

TQM is a modern operational philosophy and universally applicable approach to any service sectors and it is vital to the survival of most libraries today. It is a "continuous quality improvement system that introduces and uses customerdriven concepts, process and tools, and continuously seeks to measure its success at meeting customer needs and improve upon its process. It involves total organisation participation and customer focus"[5]. BSI/ISO Standards define TQM as `a management philosophy enabling all activities through which the needs of the customer and the community and the objectives of the organisation are satisfied in the most efficient and cost effective way by maximising the potential of all employees in a continuing drive for improvement'.

In TQM customer satisfaction is main ingredient, their specified requirements should be met and steps must be adopted towards delighting the customer by anticipating the requirements by reviewing. For the success of TQM the top management should be very serious about quality and they must be committed to it by setting clear objectives in its quality policy statement. Further, it should be spread to the middle level management and also at the shop floor or point of operation. Therefore "TQM is a way of managing to improve the effectiveness, efficiency, flexibility, and competitiveness of a business as a whole. It involves whole companies getting organised and committed to quality in each department, each activity, and each person, at each level"[6].

Traditionally quality was checked or inspected at the end of the process. But now, it is getting it right first time, it should not be inspected in as a lonely function, but the quest for the quality must be designed into all the organisations systems and instilled into all its employees. So TQM is customer-driven; it insists upon defining quality in terms of customer requirements, the use of rigorous and measurable standards of quality and every staff should feel

that quality as ones responsibility and the commitment of top management to quality.

Certainly this needs cultural changes in an organisation. Tom Peters has expressed it as a quality revolution means eating, sleeping, and breathing quality. Management obsession and persistence at all levels are essential. But the passion must be matched with a detailed process and as always, the customer must be present as the chief definer of what is important'.

The core concept of quality improvement and the characteristics of libraries will match because the library professionals are always been committed for high quality service; consequently it is easy to adopt TQM. Application to any service organisation emphasizes on "strong top management support; a system approach and strategic planning; a customer focus; an emphasis on employee team work, empowerment and training; the use of measurement and analysis techniques to determine problems and evaluate improvement; and commitment to continuous improvement"[7].

TQM eliminates waste by checking the areas and process of non-productive activities by means of critical and continuous examination and it involves every one to improve the ways in which the things are done. Therefore, the libraries must be ready for transformation to a quality-focussed environment because it is based on the culture which centred around customer and insist i continuous improvement of products and services of the library by employee involvement and participative management on a detailed work manuals. The system evaluation and service quality is determined and judged by the customers. Data thus gathered will help in improving the refining specific library services and defining a service standard in meeting customers requirements and everchanging needs of them. Therefore, TQM in library operation "emphasizes teamwork, culture change, individual responsibility/authority, creativity, accountability at all levels and enhanced productivity is the quest for strategies to improve quality"[8].

BASIC CONCEPTS OF TQM

Having gone through the above details, it seems that the imperative for quality will persist and various quality processes will gain more and more significance in shaping the future library services.

Before we could go into the details of basic components, let us see what the `Gurus of Quality Management' advocated as fundamentals for TQM. Edwards Deming considered as the father of the American quality revolution and his philosophy advocates 14 points[9]. They are :

1. Create consistency of purpose for improvement of product and service;
2. Adopt the new philosophy;
3. Cease dependence upon inspection to achieve quality;
4. End the practice of awarding business on the price tag alone;
5. Improve constantly and forever every process;
6. Institute training on the job;
7. Adopt and institute leadership;
8. Drive out fear;
9. Breakdown barriers between staff areas;
10. Eliminate slogans, exhortations and targets for the work force;
11. Eliminate numerical quotas for the work force and numerical goals for management;
12. Remove barriers that rob people of pride of workmanship;
13. Institute a rigorous programme of education and self improvement for every one and
14. Take action to accomplish the transformation.

Similarly Joseph Juran another Guru of TQM profess 10 steps to quality improvement[10], viz;

1. Build awareness of the need and opportunity for improvement;
2. Set goals for improvement;
3. Organise to reach the goals;
4. Provide training;
5. Carry out projects to solve problems;
6. Report progress;
7. Give recognition;
8. Communicate results;
9. Keep score and
10. Maintain momentum in improvement.

Phillip B. Crosby points out that `if people do not believe zero defects are possible, they will never achieve that goal for quality management, crossly emphasizes on four absolutes[11], which are :

1. Quality is defined as conformance to requirements;
2. The system for causing quality is prevention;
3. The quality performance standard is zero defects and
4. The measurement of quality is a price of non-conformance.

Proficient Gurus of quality management have directed basic principles for TQM, on that basis the following are treated as basic components of TQM.

4.1 TOTAL COMMITMENT

Firm commitment from the top officials of the institutions and the library director is most important step in implementing TQM. Guy St Clair says "no programme, no matter what it is called, how sophisticated it is in its planning and implementation, or how specifically it has been adopted for our group, is going to succeed unless we have commitment from top management for what we are doing"[12]. So, with an edorsement and ecouragement by the top officials, the library director should prepare working document on TQM and circulate amongst the library staff and library committee.

4.2 CUSTOMER DRIVEN SERVICE

The core of TQM is service and satisfaction of the customer and they are the right judges to assess the service. "TQM seeks to continuously improve customer satisfaction by quality-led organisation wide management"[13]. The quality of service is defined by the customer and the total success of TQM is determined by the level of satisfaction amongst the customers; in other words it should delight the customer. Customer need may be assessed by means of focus group, surveys and suggestion systems, which expresses whether the libraries are doing a good job or not. These surveys are very basic in proper implementation of TQM.

Therefore, richness of resources like total number of books and large size of the library staff should not be taken as an indicator of quality. However, it should be defined on how best the library meets or exceeds the customers epectations.

4.3 ELIMINATE REWORK

Fundamentals of any TQM is, doing ones job perfect and user should be provided with value-added quality products and services. Further, the library should simplify, standardise and get the work done right the first time and all the time. Crosby's zero defects envisage the same. Therefore, uproductive activities and fixing the mistakes and earlier should be avoided totally and in turn the staff time must be used more effectively by increasing productivity and reduce the rework.

4.4 TEAM WORK

Team management is evolutionary rather revolutionary and helps in breaking down barriers between units and driving out fear. "A team approach

to problem solving is developed out of necessity and the managers role becomes one of support and coaching, rather than one of authoritarian control"[14]. Team work empowers people to act and have no status barrier and they are nothing but self directed work groups aiming to improve the concerned unit quality by sharing the responsibility equally.

Therefore, teamwork helps in solving problems at process and net result will be faster and economic. Further it builds trust, improves communications and develops interdependence

4.5 TRAINING

Varieties of training at different levels of the organisation is another criteria. This will help in developing ones skills and abilities and also brings creativity and innovative potential among the library staff by yielding better results and improvement in customers services.

4.6 EMPOWERMENT AND RESPECTING PEOPLE

TQM is a known philosophy for empowering people to do their job more effectively and decisions of the concerned units should be taken by themselves and it is the duty of the librarian to remove any barriers at various levels. "Invisible walls between the professional and the non-professional staff will disappear when the library has developed team to work on strategies for achieving goals and objectives. Self respect will also be garnered when the empowerment of the staff allows full contribution and satisfaction"[15].

4.7 COMMITMENT TO CONTINUOUS IMPROVEMENT

The libraries which are "guided by a system of continuous improvement, they will make conscious decisions about what improvements are needed or desired based, on customer"[16]. Therefore, TQM should be a way of life and not limited to one-time deal. Every day improvement in the library products and services should be there.

4.8 MEASUREMENT AND ANALYSIS TECHNIQUES

Measurement provides the key for accountability. For that, proper tools and techniques should be developed for measuring quality. This will help in identifying problems, evaluate improvements and decisions will be based

on data. Performance evaluation is basic to the success of the entire information operation. "Measurement, however continues to be major impediment in improving the quality of our libraries"[17]. Cost and value based information services aspire the quantitative analysis from the library management in the future. Statistical process control as a tool assures that, whatever process is being operated, it must be reliable and consistent. Processed data may be presented by using diagrams, graphs and charts etc. Some more measuring tools for TQM are flow charts, check sheets, fish bone diagrams, run and control charts, histograms, scatter diagrams, pareto charts, benchmarking etc.

TRENDS IN TQM

The literature on quality management was scattered with terminological jargon, advocated by `Quality Gurus' of USA, UK and Japan. Different terms are used to address quality management. To name some; quality control, quality circle, quality assurance, TQM, total quality control, company wide quality control, company wide quality management, continuous quality improvement and so on.

For the purpose of data base analysis, predominant three terms, namely quality control, quality assurance and TQM were chosen to search the two data bases for the last 10 years. In search methodology several combination techniques were used to have better coverage of the terms in question in ABI/ Inform & LISA data base. In real sense the first two terminologies are covered in the preview of TQM.

Detail analysis of management database (ABI/Inform) indicates that the interest in TQM is a recent phenomenon and exponential growth of TQM literature is found from 1990s onwards. The table No. 1 and Fig. No. 1 indicate the cellar growth of quality management literature.

Similarily the TQM as a new way of doing things to produce many refined, value added services and products for the library users and also to streamline the work by more productive oriented library staff is found only from 1992 onwards. That means the librarians are bound to be responsive to the changing demands and circumstances by focussing on performance and profitability. But the quantum of literature on quality management is very scarce, however, there is a steady growth. Study indicates that we the library professionals are not yet very serious to the quality management revolution. Because growth of quality management literature for the last 10 years are not that appreciable and they are analysed and trend is shown in Table No. 2 and Fig. 2. respectively.

CONCLUSION

TQM in the library invites to make changes in the organisational structure by traditional hierarchical to horizontal structures, to bridge the gap between those on the frontlines and the senior management. Here, senior management is responsible for strategic decisions and policies and empowered employees must work together in teams; to achieve excellence in the provision and promotion of excellent information services and they must be active agents of information transfer rather than just keepers of knowledge.

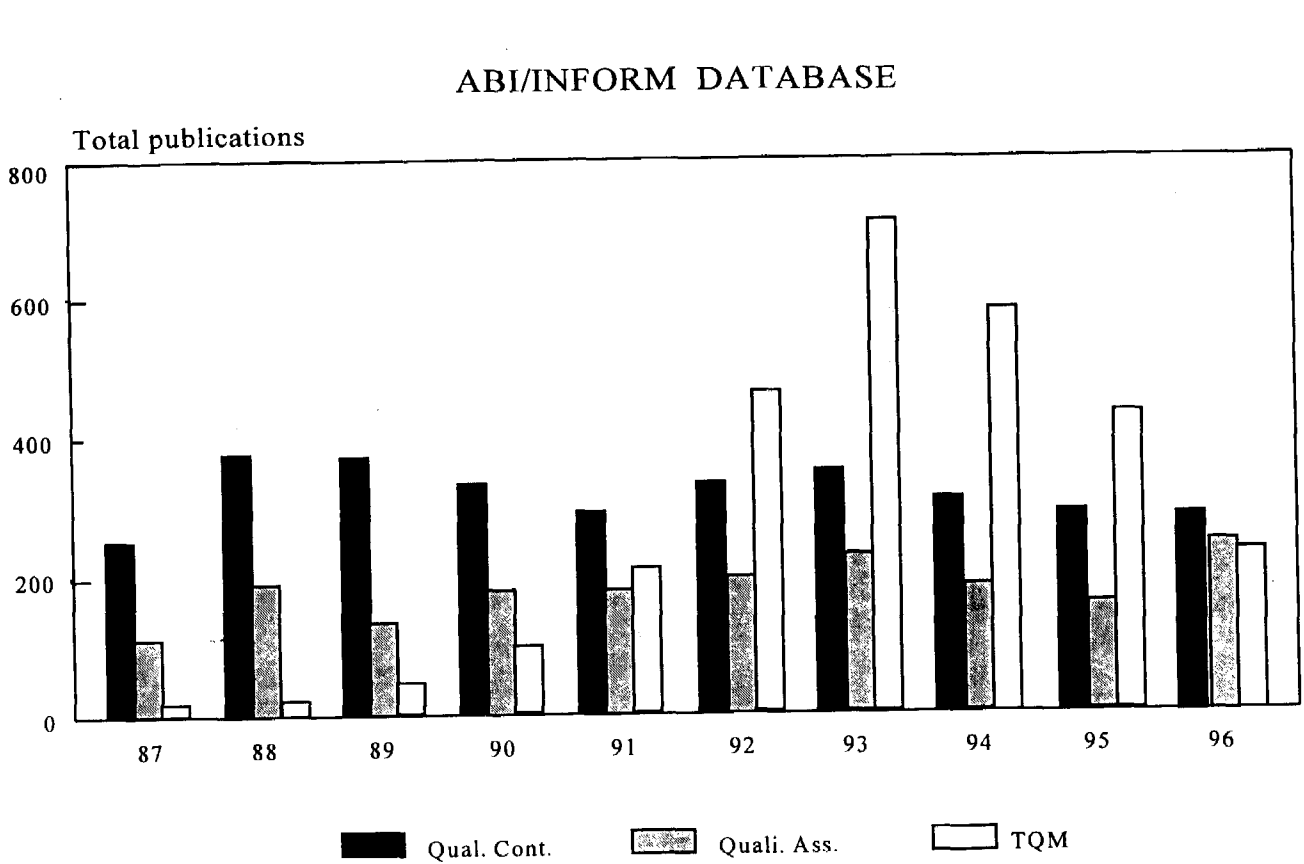
Therefore, the active libraries and librarians must develop and adopt modern management approaches and strategic visions like TQM towards customer services on more cost effective basis and every act of library should come under the scrutiny of TQM. Because it focussed on "continuous improvement in products and services, the elimination of rework, teamwork, a flattened organisational structure with greater employee involvement, and an increased emphasis on customer needs"[18] and hence "TQM certainly offers excellent opportunities for the library and the information sector to improve quality and user satisfaction and to create organisational structures and cultures fitted to meet future challenges"[19].

Therefore, application of TQM in libraries will "provide a vital link in the units relations with administrative and managerial decision makers. Further, we become proactive rather than reactive, and we no longer simply react to an administrative mandate asking us to produce results, justify our worth, and relate what we do our host organisations and their strategies and goals"[20]. Thus the TQM has been and will continue to be an issue of strategic importance to librarianship and remains an integral part of the profession.

Table No. 1

ABI/Inform Database

Year	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Quality Control	263	332	327	303	263	282	291	252	219	217
Quality Assurance	107	173	124	158	158	168	186	157	155	187
TQM	7	10	42	94	186	438	657	487	348	181


ABI/INFORM DATABASE
Total publications
800
600
400
200
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87
88
89
90
91
92
93
94
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Qual. Cont.
Quali. Ass.
TQM

LISA DATABSE

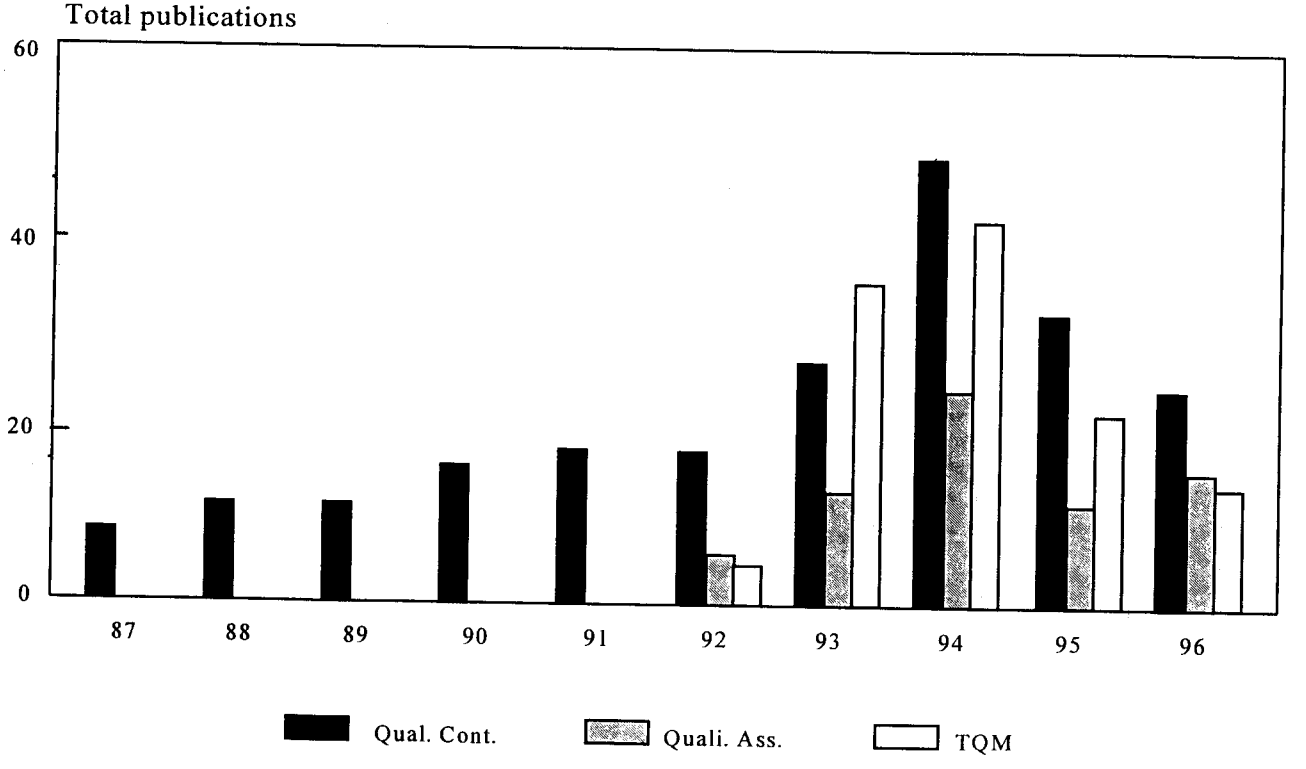


Table No. 2

LISA Database

Year	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Quality Control	7	10	10	12	14	14	27	47	29	20
Quality Assurance	0	0	0	0	0	5	9	23	7	11
TQM	0	0	0	0	0	4	37	41	19	20

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TOTAL QUALITY MANAGEMENT : IMPLICATIONS FOR IMPLEMENTATION IN LIBRARIES AND INFORMATION CENTRES

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Abstract In an Academic Library or a Research Library the Value Added Information Services can only provide the conformance to the requirements of the users and user satisfaction. The value added service can be only achieved by implementation of Total Quality Management (TQM) perspectives in Libraries and Information Centres in our country. For implementation and achieving total quality for the system, the library executives have to understand the core concepts of Total Quality Management themselves and have to be trained in these new philosophies and techniques. With the basic aim of familiarization of this new concept of TQM for libraries and Information cinders, the paper has been planned.

The paper is mainly based on the analysis of the most frequently accepted and proven track of TQM philosophy and its implications and pitfalls. By mere acquiring highly sophisticated technological infrastructure, and the latest software, the libraries and information centres can not produce value added information services. What is required is the Managers have to understand the core concept of TQM and they have to be trained in these techniques. Emphasising this fact, the paper discusses the Cultural Change Tactics Approach for TQM; Creating User Information Satisfaction; Enterprise Resource Planning, and Pitfalls in implementing TQM and the possible solutions.

In today's competitive world definition of quality is not simple. A paradigm of last ten to fifteen years defined Quality as " Conformance to requirements". Here the requirements are subjective and only defined by the clientele (customer) by the expectations and acceptance of product/service provided. Every service provided must be rated to clientele needs and expectations. In this context quality may be defined as the Customer's expectations and requirements. Quality addresses defects, errors, complaints, goes beyond the traditional values and is ever changing.

Total Quality management (TQM) is a philosophy, a set of tools, and a process whose output yields clientele satisfaction and continuous improvement. This philosophy differs from traditional philosophies and processes in that every one in the organization can and must practice it. It espouses Win-Win attitude, differentiates cost versus price, and provides added value to the system. Quality is determined by the customer and the market place and includes all products and service attributes. Broadening the concept of quality is the aim of TQM , so that quality moves form a product appraisal function to a corporate imperative for excellence and the refusal to be satisfied with the status quo.

TQM becomes integrated into all aspects of the organization identity. Its scope covers all functions including system design, production and service.

The formula for success is one part "Effective Training",

two parts "Effective implementation" and

three parts "Effective involvement".

"Cultural Change Tactics Approach"

There are many approaches for undertaking TQM, but the approach one has been in successful track record of implementation involves

Creating Commitment

Creating Cultural Change

Effective Communication

Empowering the Workforce

Taking responsibility

Statistical Process Control (SPC method)

Effective Problem solving Technique

Design of Experiments

Quality function Deployment

World class manufacturing Techniques

Quality Productivity improvement process

ISO 9000

World Class Quality Planning

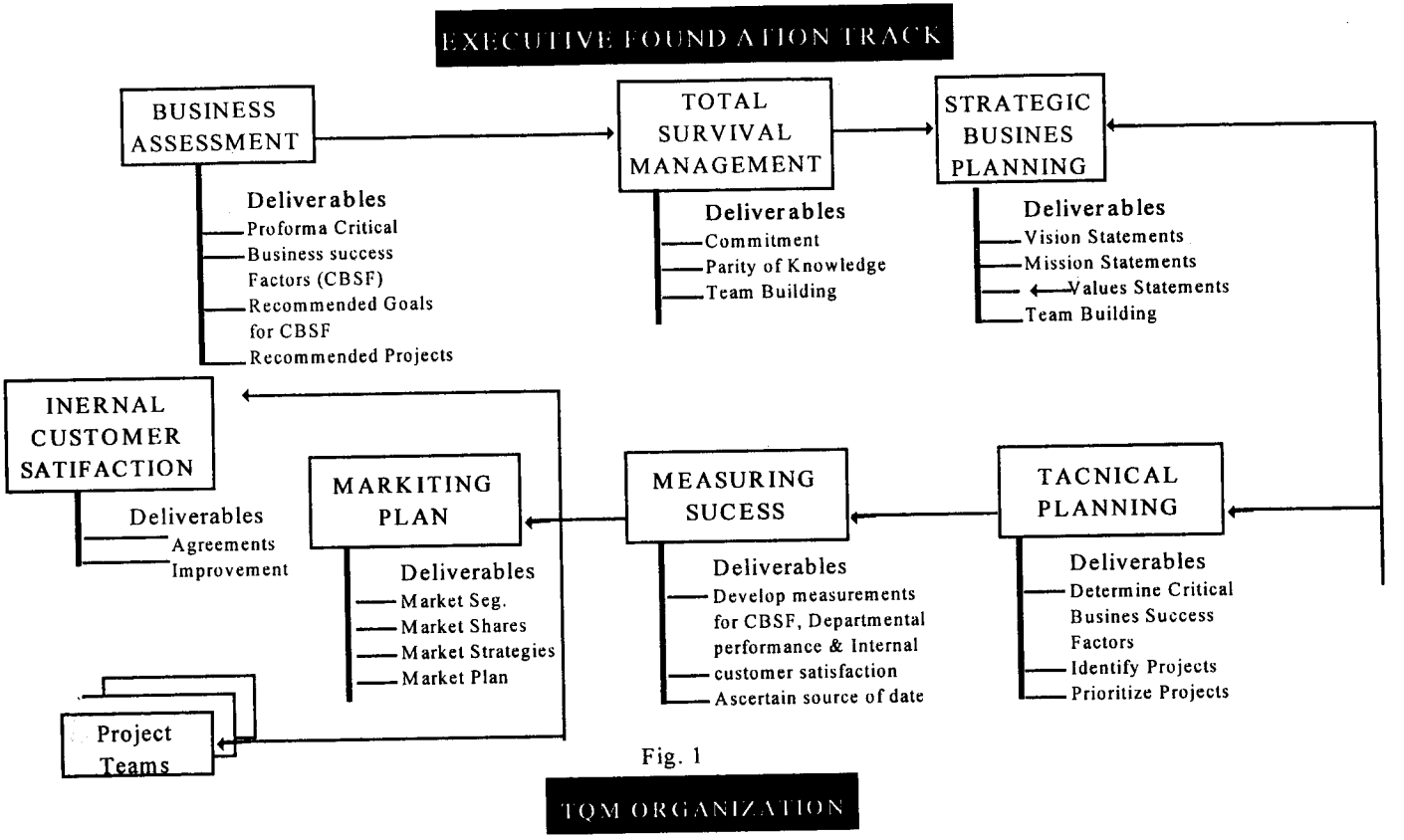

EXECUTIVE FOUNDATION TRACK
BUSINESS ASSESSMENT
Deliverables
Proforma Critical
Business success Factors (CBSF)
Recommended Goals for CBSF
Recommended Projects
TOTAL SURVIVAL MANAGEMENT
Deliverables
Commitment
Parity of Knowledge
Team Building
STRATEGIC BUSINES PLANNING
Deliverables
Vision Statements
Mission Statements
Values Statements
Team Building
INERNAL CUSTOMER SATIFACTION
Deliverables
Agreements
Improvement
MARKITING PLAN
Deliverables
Market Seg.
Market Shares
Market Strategies
Market Plan
MEASURING SUCESS
Deliverables
Develop measurements for CBSF, Departmental performance & Internal customer satisfaction
Ascertain source of date
TACNICAL PLANNING
Deliverables
Determine Critical Busines Success Factors
Identify Projects
Prioritize Projects
Project Teams
TQM ORGANIZATION

Fig. 1

Any TQM understanding will start with an assessment and introduction of the TQM understanding to the organization employees. Gaps between to days state and the desired state will be identified. Plans will be developed to close these gaps, the desired state will be expressed in vision statement that describe how the organization desires to be characterized in three to five years vision.

Mission and values, statements are not just the starting points for the understanding; they provide the direction which must be sustained and reinforced continually as the organization evolves into world class competition.

There are Ten Tracks in this program

1. Foundation Track (FT)

This is preparative of ground work for training a TQM understanding, FT (Foundation Track) develops vision, Mission, and Value statements. Determines the gap and creates a two-year tactical plan to develop the bridge between the gap. At this time the CEO (Chief Executive Officer), president and senior staff participate in making determinative promises to the work force in person, in writing, or on video tape. The objective is to share vision, mission and values by cascading the communication from level to level in a manner appropriate for the organization.

IMPLEMENTATION TRACK

This deals with Internal Customer Satisfaction agreements between departments. They include identification of all functions, departmental mission statements, identification of internal customers and their requirements, measurement of customer satisfaction, and agreement on meeting customer expectations. Projects are prioritized and are undertaken to support the critical Business Success Factors (CBSF). These projects will provide significant impact to the Critical Business Success Factors, when implemented. ISO 9000's implementation, Statistical Process Control (SPC), and World Class Manufacturing Concepts would fall in the scope of this track.

CULTURAL TRACK (CT)

Its purpose is to create the commitment to TQM and transfer the culture of the organization. This is accomplished by developing implementation plans, and survey questionnaires for each of the values that were chosen by the executives and managers, during the strategic business planning. CT

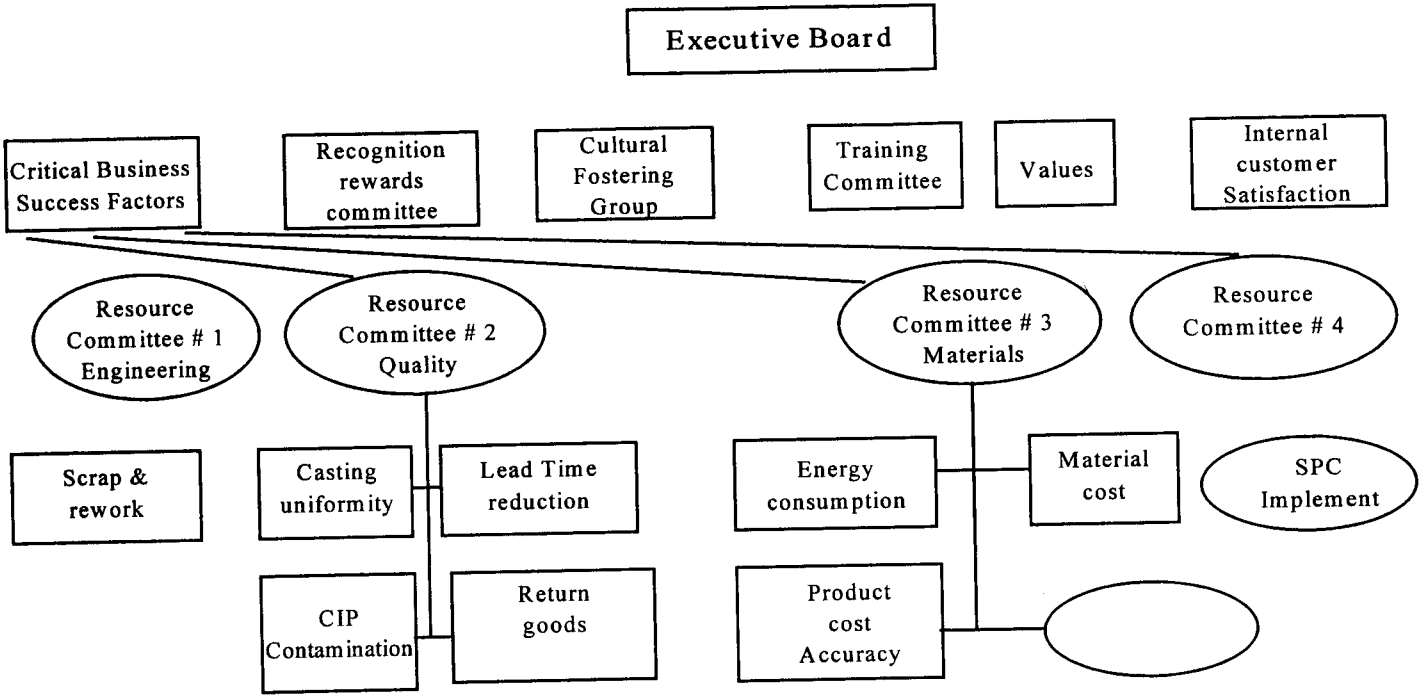


Fig. 2
REsult Oriented TQM Meetings

addresses the values which determine group behaviour and supports the performance objectives required to achieve the CBSF and internal customer satisfaction. CT also addresses which impede change, the benefits of change, the risk of failing to change, and rewards of change.

RECOGNITION & REWARDS SYSTEM TRACK.

This is initiated to respond to the departments, teams, and individual success. It reinforces the desired behaviours, performance appraisal system are the basic elements of Recognition and Reward System Track. This system is designed to develop goals for CBSF and reward organizations and individuals for their achievement of job performances, improvement of the process, implementation of behaviours, and effectiveness of their role modeling.

LEADERSHIP/TEAM BUILDING TRACK

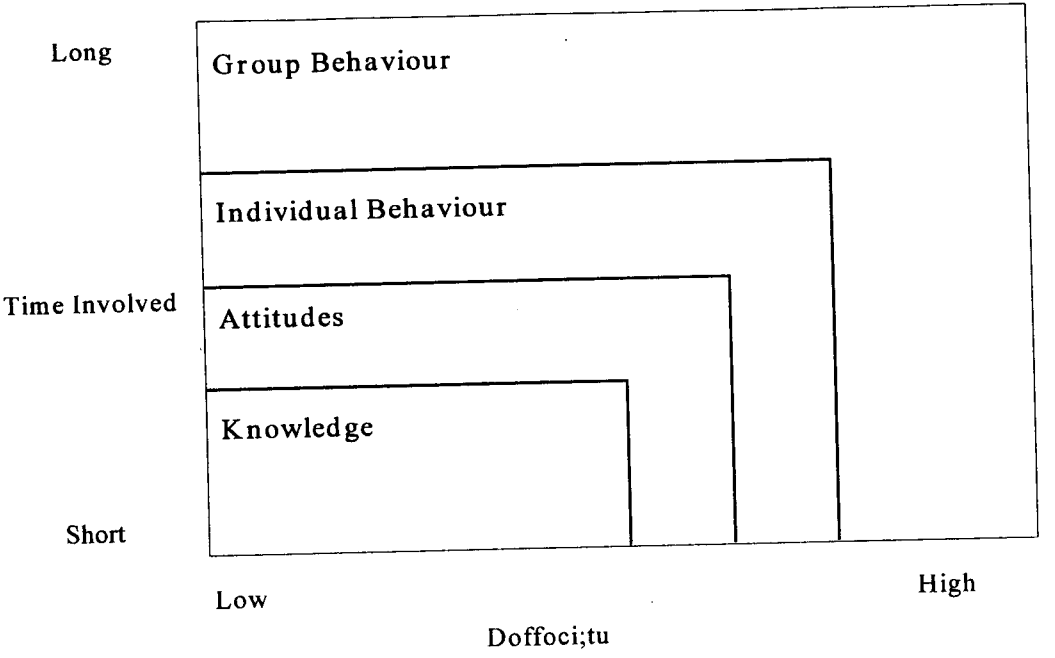
It lays importance on leadership effectiveness and utilizing these traits to support the implementation program. Doing the right thing at the right place is emphasised. Each individual has his/her critical success factors for a given position. In addition to making the best use of available talent, it will be necessary to train all personnel in effective team behaviours. Emphasis is also made on team-building, and managing conflict with in the teams, are the basic vehicle of TQM effect.

MANAGEMENT SKILLS TRACK

This emphasizes efficiency in the management/operations. Training encompasses selecting topics such as the talent that is needed, identifying areas for developing and coaching and measuring success through supervision skills.

LEADERSHIP AND TEAM BUILDING TRACK & MANAGEMENT SKILLS TRACK

This track deals with establishing Statistical Process Control techniques at all levels of the organization on measurements, and skills brought to a higher level of competency in problem solving. In this track, the philosophy is that problem solving will be done by the lowest competent levels of the organization. (It is also called "Core Techniques Track") It describes a specific process for implementing SPC administration, suppliers, software, service and devel-



(Fig. 3)
The Empowerment Process

opmental process. The productivity (output)/ quality-improvement process is initiated on all processes that have unfavourable performances to provide opportunities for improvement.

ADVANCED TECHNIQUES TRACK

This track is more involved with the tools of analysis and problem solving techniques. Included in this are World-Class Quality planning, design for manufacturing abilities, quality function (service) development, and ISO 9000 plus. These techniques become useful as the TQM implementation program gains sophistication.

The most important factor can then be controlled for optimum productivity, while the insignificant factors can be easily ignored so that process cost is minimized. Quality Function Development (QFD) brings together all of the disciplines in the organization and through careful analysis of customer needs and satisfaction; and product characterizes ensures that every aspect of design,"and delivery is aligned with the customer requirements.

CUSTOMER FOCUS TRACK

This addresses hearing the customers needs with a focus on those needs, in order to achieve maximum satisfaction and certain new business. Among the areas addressed in this track return of existing customers thorough marketing planning, sales, new product development, and new product introduction.

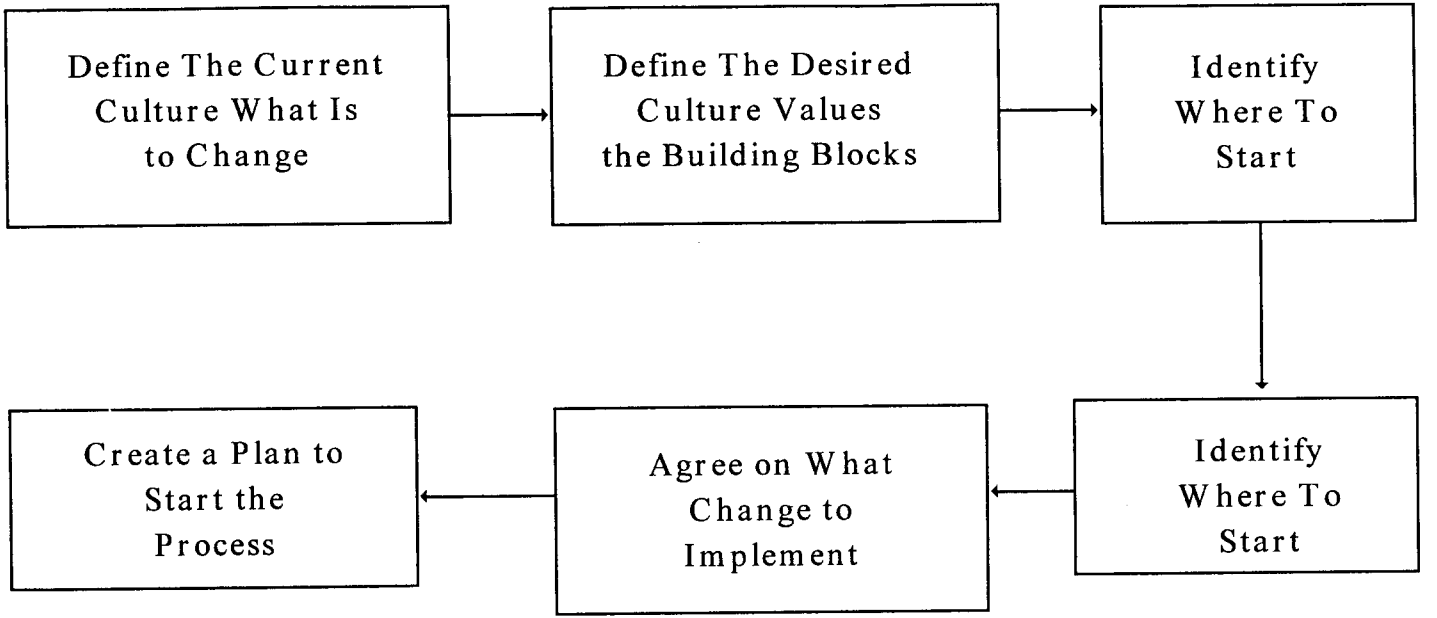
In Libraries and Information Centres stress in this track should be for the development of user based Information Services and introduction of new technologies to facilitate the access to information with minimum time requirements.

TRAIN THE TRAINER TRACK

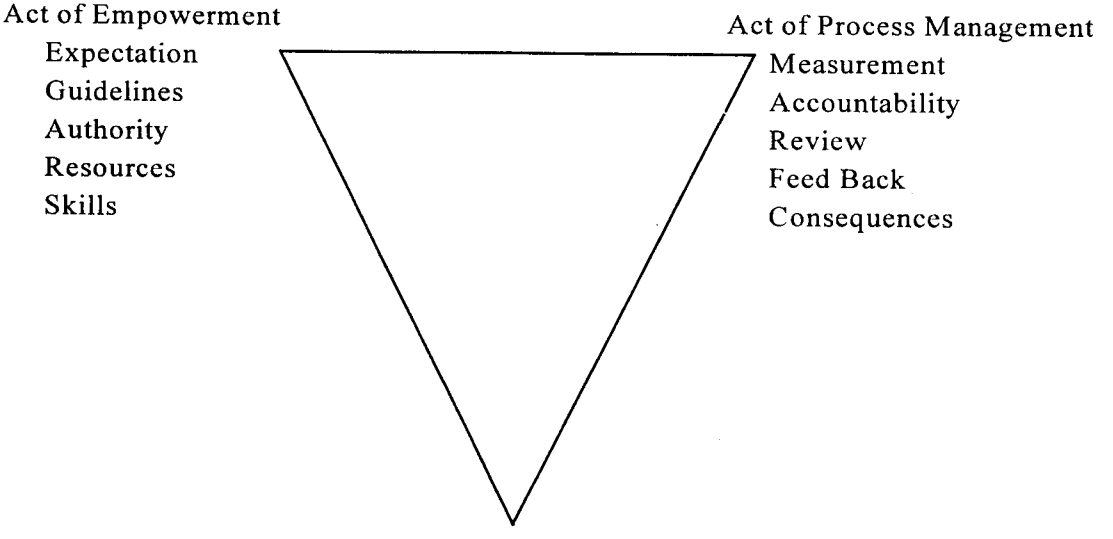
This provides the organization with internal trainers for the business to become self-sufficient in continuing the education of their work force.

To realize success, the libraries have to involve every one in the effort to meet their internal and external customer's requirements and expectations, and to continuously look for ways to improve. Successful implementation is not a quick fix, and requires a continuous integrated training and implementation approach.

CREATING CULTURAL CHANGE



(Fig. 4)



(Fig. 5)

Performance REnew Cycle

The foundation track tries to achieve the objectives of the TQM program.

Main objectives are :

* It identifies the strengths, weaknesses, opportunities, and risks, and exposures in each function and the system as a whole.
* Determines Strategic Business Direction and this is expected in Vision, Mission, and Values.
* Develops a Tactical plan which clarifies priorities, milestones, responsibilities, and expectations. The assessment is one source of input for the plan.
* Generates awareness by every one in the organization of the necessity of performance improvement emphasis and a definition of what TQM means
* Creates internal customer satisfaction agreements for each department with departmental mission statements supporting the overall organizational mission statements hence aligning all the departments together.
* Identifies the Critical Business Success Factors, identifies and initiates the project teams to support the CBSF. The attainment of goals for CBSFs yields success for the organization.
* The required training needs must be identified and prioritized in order to have success on the project teams and critical Business Success Factors.
* Initiates the Implementation track, which addresses the Internal Customer Satisfaction Agreements, and develop project teams to address CBS and Internal customer satisfaction as a continuous process.

User Information Satisfmaction (Fig.6)

The study and analysis of user Information Satisfaction reveals the efficiency of the system. And acts as a measure of Information System quality.

Delone and Mc Lean Provided a useful grouping of Information System success measures in six categories.

System Quality

Information Quality

User Satisfaction

Use

Individual Impact and

Organizational Impact

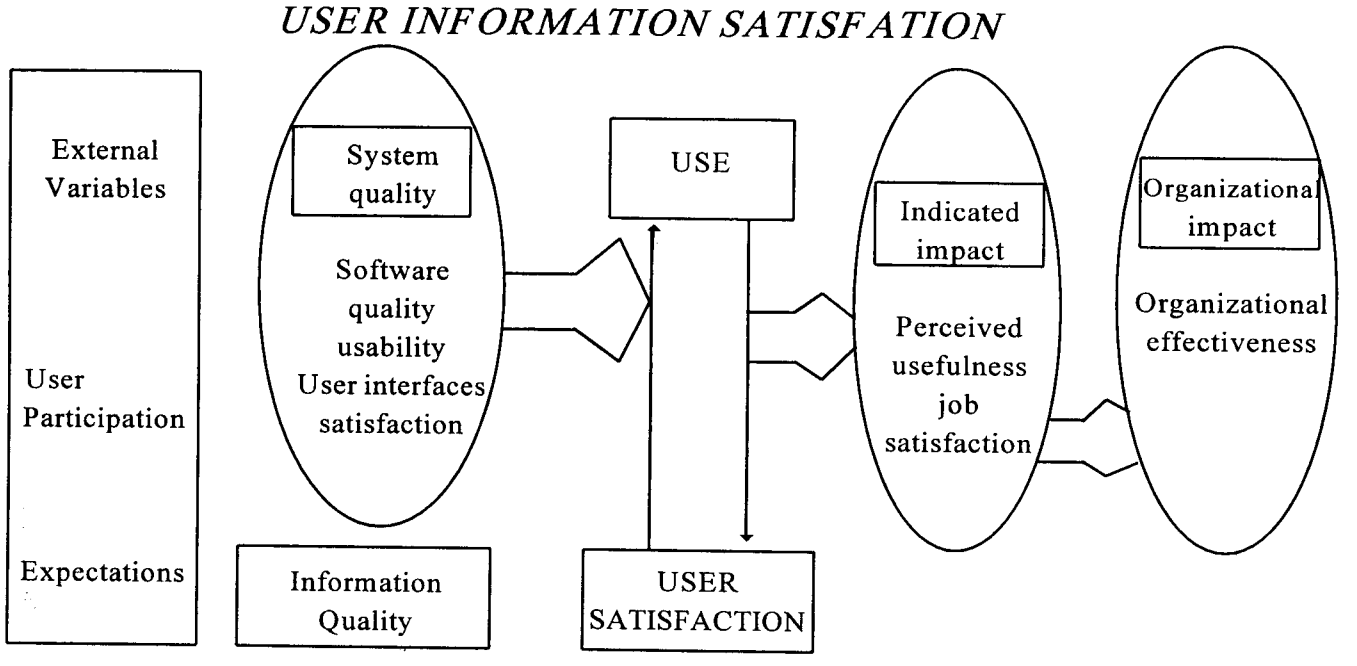


Fig. 6
Framework for UIS as a measure of Information System Quality

The system quality and information quality singularly and jointly effect both use and user satisfaction. Use and user satisfaction effect each other and are direct antecedents of individual impact. Finally individual impact is assumed to have some organizational impact.

The measure of perceived usefulness is an example of an instrument the mainly measures the system impact on individual effectiveness. One should note however, that it is not only the measure at the level of individual impact. As a complimentary measure one can take the system's impact on job satisfaction. In case of organizational impact there are not well established instruments., but UIS is often used as a surrogate for organizational effectiveness.

The original Model (Fig 6) of De Lone and Mc Lean is modified to cover a number of external variables such as user participation, expectations, and so forth; which can be assumed to effect UIS. The purpose of extension is to remind definition of UIS, it should take in a large web of its antecedents and consequents.

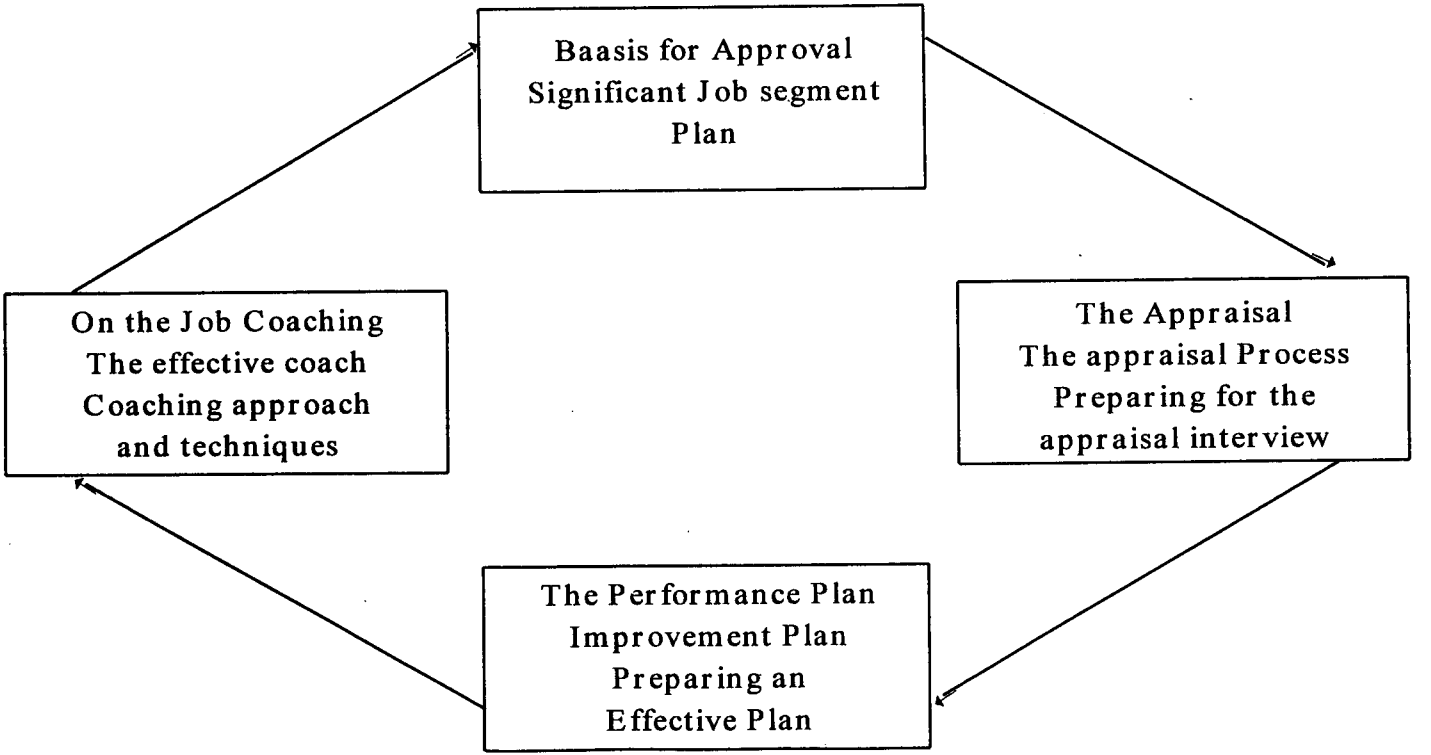
User Information Satisfaction is inherently a subjective measure. One of the tenets of this philosophy is that it is significant as much as an indicator of whether the actual users are satisfied with the system or not. Largely because of its seeming ease of measurement, UIS is one of the most frequently used measures if IS success, both in research and practice. There has been a considerable progress in the development of a valid and reliable measurement of UIS during last ten years. The Ives-Olson-Baroudi and Doll-Torkzadeh measures being the most carefully validated measures in the field. This has however partly overshadowed more substantive conceptual and theoretical problems associated with UIS.

ENTERPRISE RESOURCE PLANNING

The current philosophy in user oriented organizations is Enterprise Resource Planning concept. As organizations cannot restrict themselves to by converting their manual operations to computerized one, a cultural change has to take place with in the organization. As libraries become global and electronic business centres, they have to connect each other. In such a scenario and integrated approach is highly essential.

Integrating the islands of information existing with in the organization to enable information sharing among various departments, the need for a single system for the entire organization, improving efficiency, and enhancing productivity are some of the key factors that are driving organizations to go for ERP way.

Performance Renew Cycle (Fig. 7)



The pockets of information resides at various functional areas in the organization, which had to be integrated and existing MRP (Material Resource Planning) packages, have limited functionality to enhance information visibility in the organization it is necessary to leverage technologies such as client servers, world flow automation, and data warehousing. For this there exists a need for common plat-form.

The advantage of data warehousing is, it has got links into any kind of database that might have been existing in the system. One can choose a contemporary data warehouse and integrate any particular library or information centre data into it.

Pitfalls to a successful TQM implementation in Libraries and Solutions.

Executives believe that commitment is interest. They do not appreciate what commitment is, and how their role modeling will influence the outcome of the TQM implementation. They do TQM responsibilities when it is convenient., the result of this is many TQM implementations do not have any leadership, and thus do not achieve their expectations and potential.

To overcome this ensure the executives are trained and understand what commitment is.

Doing a self assessment by the internal personnel who may not possess the necessary objectivity. The internal personnel may also lack knowledge and experience necessary to conduct a proper assessment.

For this it is best to have an outside consulting firm to conduct the assessment

Failure to educate the executives on the philosophy of TQM, and so failing to create a parity of knowledge among them, gain their commitment, and build their team. Sustained success with a TQM will be difficult to achieve without the executive staff understanding and support and their commitment.

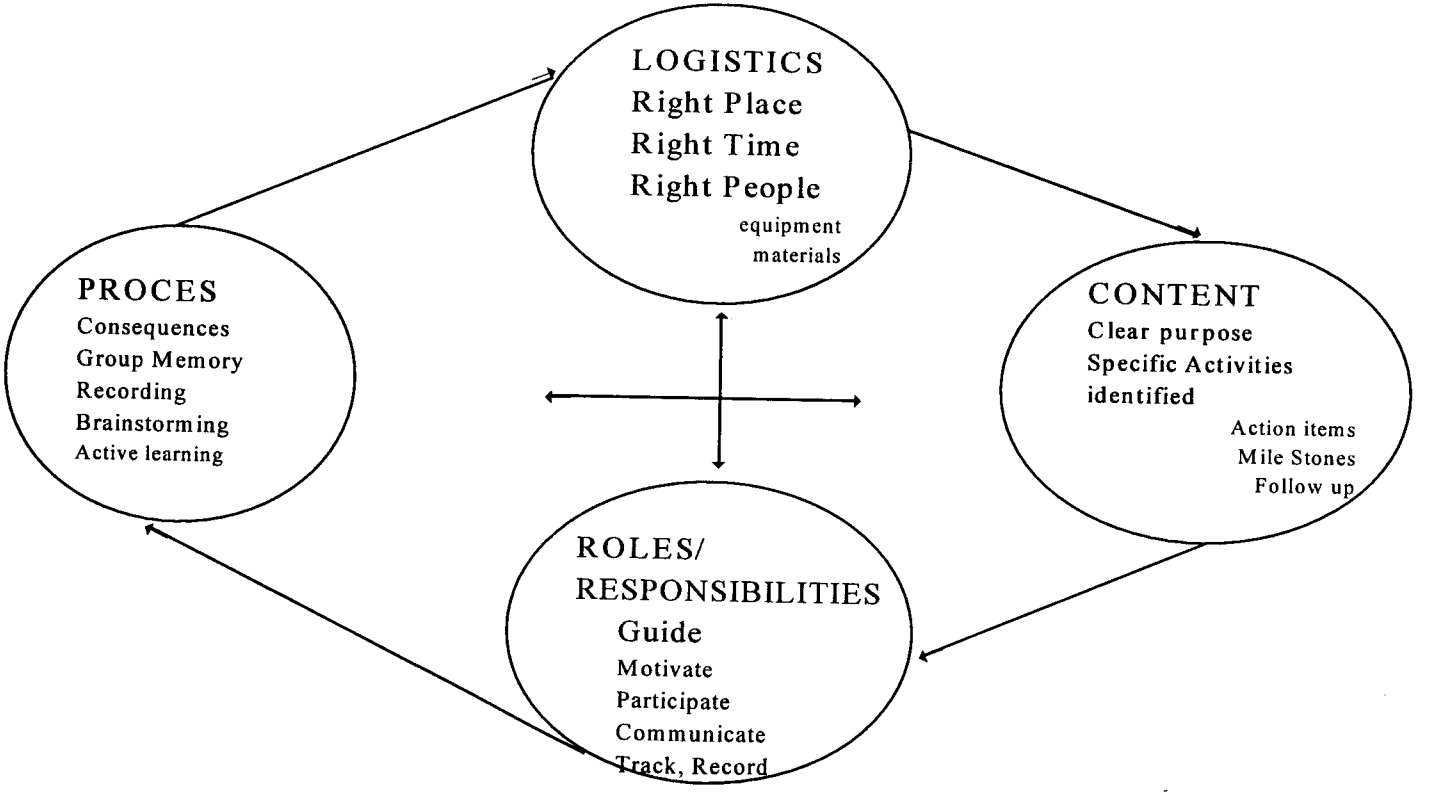
Not Conducting Strategic Business Planning to set the future direction of the organization prior to starting the TQM understanding.

The impact of this on the system would be with out participation of the total executive staff, an effective vision, mission, and value statement cannot be produced.

For this strategic planning sessions have to be conducted with an experienced consultant, executive staff, and key managers.

Failure of senior staff to produce long range plans (CBSF)

Effective Meeting Elements (Fig.8)



With out a comprehensive plan, establishing all milestones of TQM goals, the organization champions could not be assigned to attain necessary results to make TQM a success.

For this departmental teams should be established to identify their internal customers, what their requirements are, and how to measure satisfaction and to come to agreement with the internal customers. In case the internal customers are not satisfied a recovery plan should be developed and reviewed monthly.

Lack of internal customer satisfaction agreements between various divisions in the system

Departments will continue to function at the level of cooperation they had before TQM implementation. Due to this the departments do not become aligned to meet the needs of external user satisfaction targets.

To avoid this departmental teams should be established to identify the internal customer, how to measure satisfaction, and come to agreement with the internal customers and this should be reviewed at regular periodicity.

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TOTAL QUALITY MANAGEMENT IN LIBRARIANSHIP : AN APPROACH TO IMPROVED PERFORMANCE

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Abstract This paper explores some of the issues associated with implementation of TQM in a library and information service environment. Libraries in their quest for continuous quality improvement, have discovered that Total Quality Management is the ultimate solution to improve the quality of their products and to provide maximum satisfaction to their customers.

INTRODUCTION

There has been constant efforts by the executives to make their organisation effective and increase the productivity of the organisation. "Total Quality Management" as an organic approach has emerged in response to the need for improving and assuring quality in business as well as managerial and technology processes for effectively restoring and achieving total customer satisfaction. By quality we always mean a higher order of things. In actual practice, one is required to maintain a specific standard in order to maintain that high order. That standard, however, varies according to necessity of the circumstances. Organisations, in their quest for continuous quality improvement, have discovered that TQM is the ultimate solution to improve the quality of their products and to provide maximum satisfaction to their customers.

The concept of "Total Quality Management" is relatively of a recent origin. It is a customer - oriented and quality focussed philosophy. It involves all aspects of an organisation in satisfying customer requirements. It has been defined as "a management philosophy embracing all activities through which the needs, expectations of the customer, the community and the objectives of

the organisation are satisfied in most efficient and cost-effective way by maximising the potential of all employees in a continuing drive for improvement".[1] The concept of TQM was developed by Deming[2], Juran[3] and Crosby[4]. It is a modern management term which focusses its attention mainly on customer and quality through a system of planning, control and continuous improvement. It aims at preventing bad quality rather than detecting it later. These quality gurus' have demonstrated the importance of quality management in a wide variety of fields. Libraries and Information Services are no exception. The implementation of TQM in this field poses interesting challenges on the road to potentially significant benefits. There is an increasing focus on the importance of the quality of the service experience. An awareness on the part of the top management in libraries about the organic approach of TQM, its constituent elements and the way it works is of paramount importance.

Library and information service managers have long recognised the need for customer orientation. Some have tried to implement TQM or have been involved with its initiatives within organization. In fact, customer care and customer focussed programmes have been used in training those library staff who are in direct contact with public. TQM emphasized that quality is a holistic concept which, if it is to succeed, must be applied to every espect of an organization's activities. It is concerned with cultural change, so that every individual in the organization becomes fully committed to providing quality products and services. Through quality control the organization seeks to reduce human error in the manufacture of a product or provision of a service. Now it is widely used to libraries and information service provisions, as well as to the production of knowledge products such as books and softwares.

RESPONSIBILITY FOR QUALITY

Responsibility for quality rests with the top management. It requires a frame of mind, "doing the right thing right the first time". When the concept of TQM becomes clear, the top management discerns how much of it is already practised and where to focus for further exercise. The responsibility in this respect may be considered in terms of laying down quality policy, setting quality objectives and dedication for quality. The main job is to build a quality culture within the organisation. TQM requires total involvement to top management in the following three dimensions :

a) leadership,
b) empowerment, and
c) team building.

Why TQM?

A few compelling reasons for TQM may be emunerated as follows :

i) Quality leads to profits.
ii) Customers prefer quality products.
iii) TQM is a motivating factor.
iv) Quality is goal oriented.
v) TQM brings the returns.

Key concepts of quality for services, including libraries and information services have emerged from work by Zeithaml et al5, who suggests that attention needs to be paid to five aspects of service, the RATER categories :

i) Reliability : does the service meet set or implied standards consistently?
ii) Assurance : do staff give the impression of being knowledgeable about their jobs, of being trustworthy and confident? Are they courteous to each customer?
iii) Tangibles : do the premises appear tidy, well designed, suitable for their purposes ? Does equipment work? Are staff appropriately dressed?
iv) Empathy : do customers get individual attention that meets their needs? Do staff appear to care about customers real needs?
v) Responsiveness : is the service prompt? Are staff willing to go out of their way to help the customers?

It is in the pursuit of excellence in these aspects of service, that quality management has most to offer to the development of library and information science. Quality failures can be prevented, providing they are seen as the responsibility of the managers, who can tackle them through the systematic introduction of better procedures, better training and clarity of purpose.

IMPLEMENTATION OF THE TQM

For all these programmes, what we need most is to introduce model of Quality Control in all departments of an organisation. TQM is considered to be a strategy of management for improvement in the total quality of an organisation. Such a strategy is, however, normally adopted in different steps. Those steps may be of a different order according to the necessity of the circumstances of each particular case but a general strategy for improvement may be designed for the convenience of all types of organisations which may include the following steps of excellence.

1. First step is to generate continuous pursuit of ultimate perfection, harmony and value. The TQM philosophy shifts the responsibility from a

single individual to the whole organisation.

2. Second step is decision based quality management" an analysed facts and figures. Decision making is an important function of management. It must be based on authentic facts. For ready availability of facts information from the lowest level of employees has also to be received.
3. The third step is "policy based management" emphasis must be paid on value based thoughts and policies which should synthesize the opinions and aspirations of the employees of the organisation.
4. Fourth step is motivation, Employees are motivated to achieve total quality through trust, respect and recognition.
5. The fifth step is customer satisfaction. People of the organisation should have intense and extensive interactions with their value customers for evolving the best.
6. The sixth step is employees involvement, innovation and responsiveness. Employees involvement means that each individual must take the initiative and not rely upon someone else. In order to achieve this the organisation needs a culture which encourages this behaviour. Everyone must feel that they contribute equally for the success of the organisation through cooperative methods.
7. The seventh step is concerned with the various planning processes and drafting of schemes for identifying goals. Management has to review plans from time to time and evaluate the results obtained for standardisation of procedures.
8. The eighth step in the introduction of TQM is education and training of human resources. Every one should be developed to take up some responsibility and should be trained for meeting the growth needs of the organisation.
9. The ninth step is meant for implementation of various programmes through constant dissemination of knowledge. For better performance, feedback through superior quality information system is also required for the development of the organisation.
10. The tenth step is the concern for environment. Quality improvement aims at creating a positive attitude towards the entire environment, so that instead of being a deterrent to the organisations' prosperity, it will take the role of a partner in progress.

TQM AND PERFORMANCE

The philosophy of total quality management is not only with an idea to achieve quality product but also at improving the capabilities of the employees who are working in the organisation thereby getting improved quality product, better performance and consumer satisfaction. In fact the process of TQM is a continuous process and can be achieved by creating an organisational cli-

mate for development of human resource motivation for achieving quality and high performance. The TQM can give a feeling of working in a team and can develop commitment in people for the quality product. The steps in introducing TQM automatically :

1. Create quality consciousness in everyone.
2. Create desire for achieving excellence.
3. Create ability to decide and solve the problem.
4. Develops individuals and group in planning, doing and supporting each other.
5. It provides for training in skill.
6. It develops interpersonal relation skill and feeling of "No one among us is as smart as all of us together.
7. It develops concern for results, concern for group and concern for organisation.
8. It develop team spirit in the staff.

MEASURING QUALITY

For the continuous improvement of the work of an organisations different approaches can be used to measure the quality of the services provided to the customers.[7]

1. Assessment through periodic surveys

The customers can be asked to give their assessment of services offered.

2. Benchmarking

Different organisations with their competitors can be compared.

3. Complaints

Level of complaints is one of the important indicators to measure the quality work of an organisation. It also provides some directions for potential improvements.

Suggestion boxes can also provide valuable information on the interface between customers and managements.

CONCLUSION

Total Quality Management is a continuous process and not an end. Zero defects, quality improvement and customer satisfaction, which are the three thrust areas of TQM, are continuously achieved and also get updated with changing needs of the customers. TQM is essentially a way of organising and involving the whole organisation - every department every activity, very single person at every level - towards achieving quality and customer satisfaction.

Finally TQM can be effective only when the employees feel involved in every step and in the responsibility of the organisation. Hence the management has to create an environment for attitudinal change in staff. The focus must always be on keeping each and every employee involved to the best of his or her ability in satisfying the customer and in improving their performance.

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TOTAL QUALITY MANAGEMENT IN LIBRARIES : A CHALLENGING ISSUE

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Abstract Application of Total Quality Management (TQM) in libraries began during 1990s. In library, it is concerned with overall customer Service, customer satisfaction and cost reduction. It is a total quality in which every aspect of work is to be given equal attention. Moreover, it is a continuous improvement process. Without quality management, efficient and effective information service is not possible in this new era. In the case of the manufacturing and corporate sectors where TQM developed, implementation may promote-even require -sudden holistic change but in libraries, a more integrative approach is possible. The TQM implementation model of a research library presented here illustrates a comprehensive, systematic process in four phases and ten steps but it is not strictly sequential or that all are mandatory.

INTRODUCTION

Application of management principles to libraries is quite old. Until the middle of 1930s, most libraries were operated under an authoritarian or at least conservative approach to management. The librarian was expected to make decisions in almost all phases of operations. After World War II, librarians applied a combination of scientific management[1] and some of the mathematical/operations research techniques. Dougherty and Heinritz's "Scientific Management of Library Operations" is representative of the concern during this period with anyone interested in library management. Most library related work during this period tended to focus on activities and things rather than on peo-

ple, in contrast to F.W. Taylor, who definitely gave more importance to people in his work.

The period following 1955 envisaged the development of synthesis in library management theory rather than a strict human relations phase of operations. Only a few of Mayo's and his followers' concepts have been adopted during this period, and these have not really been applied as Mayo might have expected. "Human relations" in libraries usually means democratic administration, participative administration, great use of committees, and involvement (or apparent involvement) by staff in decision making.

In 1990s, a great deal has been written about Total Quality Management (TQM) ; books, articles, pamphlets, and handbooks describe the basic principles, the process, useful techniques, the advantages and disadvantages. To date very little of it relates directly or indirectly to libraries.

TQM is the hybridization of plus side of Taylor's scientific management and Japanese participative management[2]. W. Edward Deming[3], Joseph Juran, Philip B. Crosby and Kaoru Ishikawa[4] are the pioneers in developing this new system of management.

Mass production of information is not the cliche any more but quality information is what the customers are really looking for. In case of library, rising cost of information services, customer dissatisfaction with lower quality of information as well as declining enrollments of customers have led to quality revolution. The quality management in libraries is concerned with :

1) Over all customer Service, 2) Customer satisfaction and 3) Cost reduction. To achieve the goal of quality information products and services, the internal operating conditions studied included: 1) attention to customer requirements, 2) group process and problem solving skills, 3) internal communication throughout the organization, 4) change to a more participatory management, 5) timeliness of internal process and 6) efficiency.

TQM had enabled those areas in the library which implemented it to accomplish improved quality service with the same workforce. They were able to do this by utilizing customer surveys, flowcharting work processes, analyzing the data, brainstorming solutions, developing performance standards, and selecting and implementing solutions. Unlike some other management theories, TQM does not promise a major turnaround in the library. Its hallmark is its emphasis on the process, not on personnel. Deming repeatedly states that, in most cases when an organization uses TQM, it will discover that ninety percent of the problems are caused by faulty processes, and only ten percent are related to personnel. Finally, change according to TQM comes though small incremental steps rather than overnight transformations. Therefore, libraries

implementing quality management must look for long-term performance. TQM is a process, not a program, a project, or least of all, a quick fix.

THE 'QUALITY' CONCEPT

The word quality and the term high quality in particular, usually conjure up a number of images : expensive car, expensive clothes, expensive video-recorder, expensive information services ...expensive everything. Quality is commonly associated with cost 'you get what you pay for'.

Always associating with cost, however, is a mistake. For example, one might have occasionally eaten at a restaurant where the bill amounted to two or three times that which he/she was normally prepared to spend. He/she cannot honestly say that the food has tasted two or three times better or that the service or surroundings were improved in proportion to the increased charges. Quality of a person or a thing as a characteristic, innate or acquired, in particular determines the nature and behaviour of the person or thing. The synonyms of 'quality' are trait, character, feature, attribute, property, etc. in general usage, although most people have too narrow a perspective of the meaning of the word 'quality'. If a library serves its clienteles with nascent microthoughts or his/her any type of query pinpointedly, exhaustively and expeditiously then it means quality library services. To satisfy the users' need they may be referred to another institutions or persons when the information is not available in the library. It is surely a quality management in relation to referral service.

Quality is about expectations of functional performance. A quality product or service is one that fully meets expectations and requirements of those who purchase or use it.

Quality services in libraries need to provide services which are free of error and include accuracy, timeliness, completeness, friendliness and courtesy, anticipating customer needs, knowledge, aesthetics, reputation.

Therefore, quality relates to everything that an organization does, in the eyes of its customers. The implication is that quality is not restricted only to the quality of information processing or some aspects of service in libraries. It is the total quality in which every aspect of work is to be given equal attention. Quality is also not a static concept. It is a continuous and unending process. Quality of any activity changes with time, environment, customer reaction and many other factors.

Quality improvement is essential to survive every organization in the purely competitive market of twenty first century.

ELEMENTS OF TOTAL QUALITY

Total quality represents a competitive strategy. It is as much concerned with confidence and the overall impression of the market as it is with specific measurable and quantifiable characteristics. There are four elements of total quality viz., systems, processes, management and people. Systems consist of several national and international standards like ISO 9000, BS 5750, BIS 14000 etc. Processes include process capability, process improvement, process control, total information storage maintenance, timeliness. Management consists of style, problem solving, and team work and people include quality circles, suggestion, schemes and participation in management.

TOTAL QUALITY MANAGEMENT AND ITS PROCESSES

TQM was developed in manufacturing environment, and the process of translating it to a service environment has been a slow one. Not-for-profit organizations e.g. libraries are slow to embrace techniques and attitudes from the profit sector.

British Standard Bs 7850 defined TQM as "Management philosophy and company practices that aim to harness the human and material resources of an organization in the most effective way to achieve the objectives of the organization".

Tanner and De Toro offer an alternative, redefining quality in the following terms :

"A basic business strategy that provides goods and services that completely satisfy both internal and external customers by meeting their explicit and implicit expectations... This strategy utilizes the talent of all employees, to the benefit of the organization in particular and society in general, and provides a positive financial return to the shareholders". (Brophy & Couling, 1996, p.69)

TQM consists of three terms. Each term is significant where,

Total = Everyone has a role to play

Quality = Doing right thing first time, every time, all the time and

Management = Art of making it happen

The twelve TQM processes have been shown in figure 1:

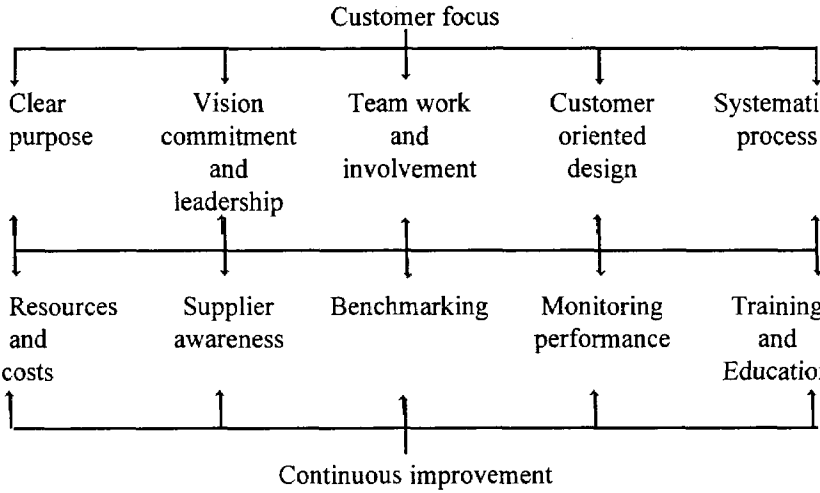


Fig 1 : Total Quality Management process

Source : Brophy & Couling, 1996, p.71

QUALITY MANAGEMENT IN LIBRARIES

TQM embodies certain values and approaches common to libraries today. Yet several of its defining and most extraordinary elements-continuous improvement, quality tools and measurement, and customer focus planning not commonly applied in libraries.

TQM begins with leadership and focuses the entire organization on customer needs. Quality improvements lead to service improvements which increase goodwill of libraries.

TQM techniques and processes may differ from library to library according to their necessity and applicability. It links the need to consider radically rethinking the way in which a library is organized and performs it functions with the turbulent, rapidly changing nature of the information environment in which libraries operate. With its emphasis on meeting users' needs, TQM is seen as a way of linking the familiar time honoured commitment to service with a flexible, future oriented approach to management.

TQM principles can work is libraries, but one must know how to work within the TQM works best as we manage our best valuable resources-ourselves. The library of the future can only be created by the librarian of the future. The most important element of a successful TQM program is its inher-

ent philosophy of managing people. Second, TQM requires the library staff define progress in terms of meeting users' needs. Thus, the library application of TQM has library staff functioning as valued partners in the process of meeting customer or library user needs. Library managers must lead in the creation of a management culture that encourages employees to contribute, and gives staff the necessary training in an organized way.

Since user needs will continue to change, quality service will require a continuous improvement process.

We will be continually changed to :

i) identify customers
ii) identify customer expectations
iii) translate expectations into operational processes
iv) decide on how to measure service
v) conduct evaluation of services based on established performance measures

Reason for the concern with quality is the changing environment in which all library, whether public or private sector are being delivered. There is a belief that libraries need to operate even more effectively and efficiently in the 1990s than was being argued for the 1970s. Then the emphasis was mainly on providing certain level of service quality, within a largely stable environment. Library managers tended to focus on efficiency criteria : the numbers of reference transactions per day, number of items catalogued, number of documents delivered. Effectiveness was not being considered as rigorously in answering questions, such as :

* In the library and information service performing these activities, and offering those services which should be provided ?
* Are library and information service staff accomplishing organizational goals and objectives?
* How can staff ensure that the library and information service offers high quality services and activities?

Fig 2 highlights the Questions of Efficiency and Effectiveness in relation to Input, Processes and Outputs.

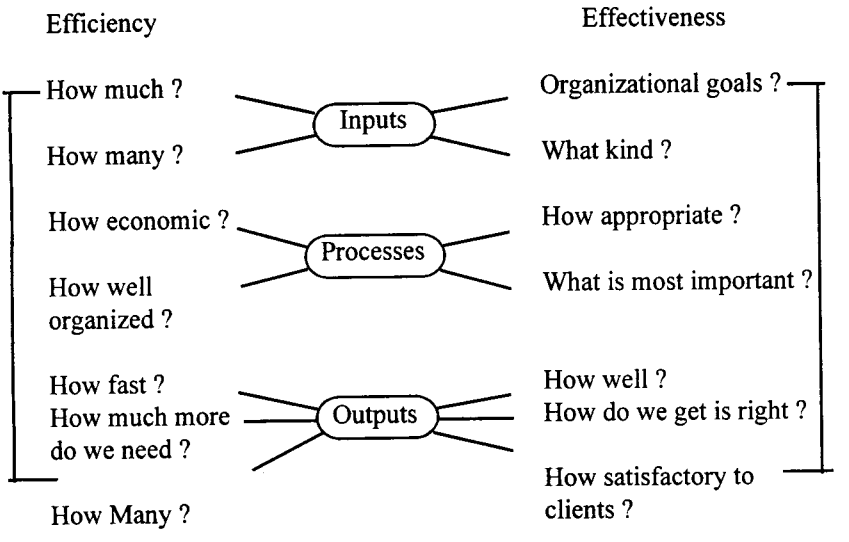


Fig 2 : Questions of Efficiency and

Source : Kinnel, 1996, p. 267

THE QUALITY IMPLEMENTATION MODEL

The model presented here illustrates a comprehensive, systematic process of integrating total quality management into a research library environment, beginning with exploration by top management. After the decision to introduce total quality management has been made, the process which follows is commonly referred to as "implementation". Undertaking TQM is not a matter of throwing a switch that starts a series of gears into motion.

In libraries and other service organizations, TQM should be viewed as a means of transition to this new era, and of creating a different framework, one based on proven quality values and practices. In the case of the manufacturing and corporate sectors where TQM developed, implementation may promote-even require-sudden holistic change. But, in libraries a more integrative approach is possible . For example, the TQM elements of participative management, staff training and development, and responsive service to users are already established concepts in libraries. As a result, libraries are in a position to expand and improve upon principles they already value and employ, while introducing new approaches to planning, problem solving and envisioning future customer services and needs. The terminology of TQM creates barriers to

understanding and acceptance, particularly in academic environments.

The model (fig 3) proposes the implementation process in four phases and ten steps, this does not mean that these steps and activities must be strictly sequential, or that all are mandatory. Rather, the model presents the various issues, elements and processes that would comprise a comprehensive TQM based transition.

Phase one : Exploration and decision making

In the first phase library managers need to gather together information about quality management, including examining the literature (with particular reference to works concerned with the application of TQM to the sector, in the case described to education and research or more generally to non profit seeking organizations), attending conferences and training events and contracting and visiting congrugent organizations already involved in TQM. Once this information and understanding has been gained the library can move on to the second step in this phase, making the decision to implement TQM and crucially, gaining top management commitment to it.

Phase two : Organizing for quality

The initial step in the second phase is to undertake a series of planning tasks which will provide the groundwork on which TQM implementation can be built. It is suggested that many of the tasks associated with this phase will be reasonably familiar to librarians who have been engaged in strategic planning. For example, the initial step will be to carry out an assessment of the library to determine whether its predominant culture is already sympathetic to the introduction of quality management. Along side this environmental assessment there will be a process of seeking deeper understanding of both internal and external customers, in part by training staff to understand the issues behind customer expectations and customer satisfaction, and some of the techniques which can be used to achieve improvements. Finally, a vision needs to be articulated, supported by guidelines and actions which will enable the organization to move forward from what it is to what it wants to be.

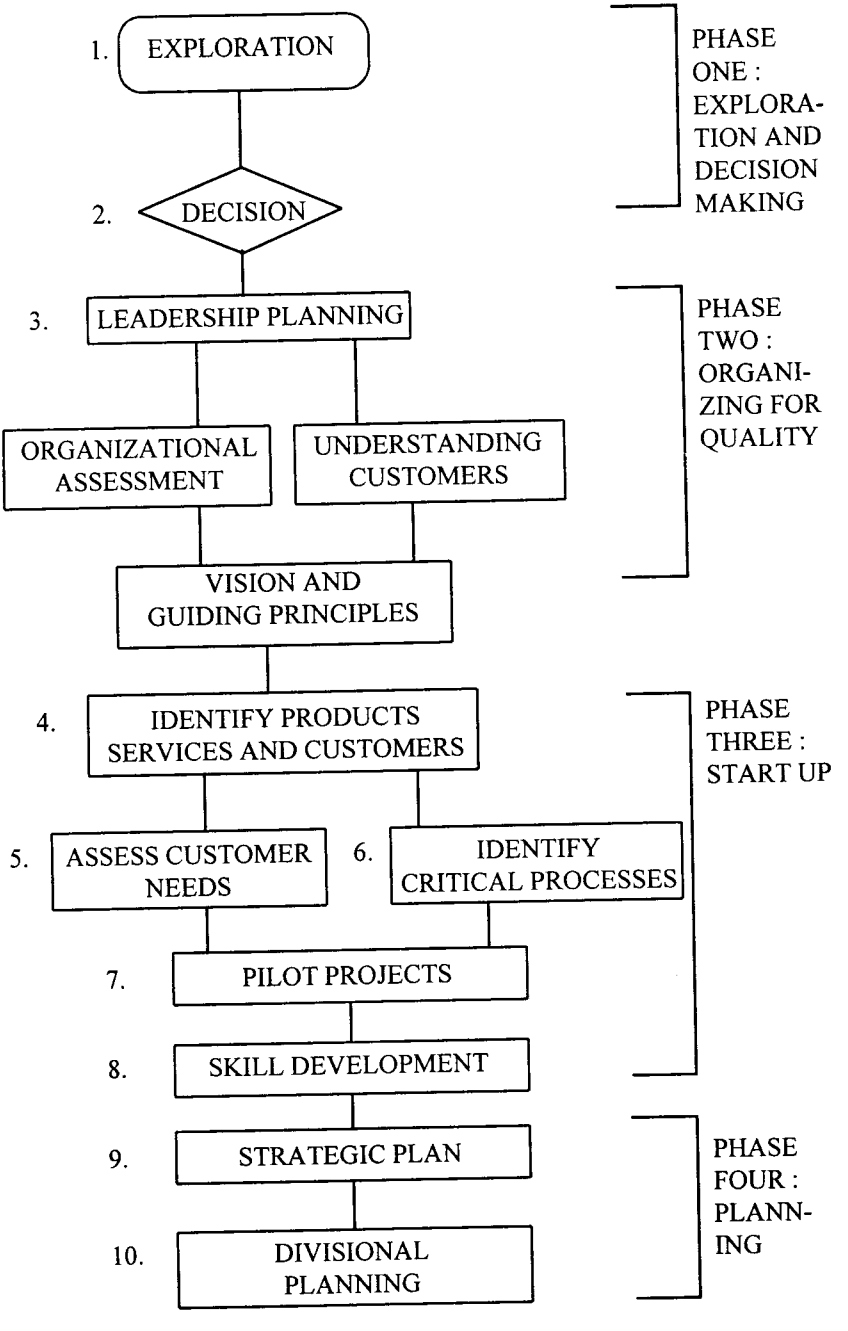


Fig. 3: Total Quality Mangement Library Implementation Model

Source : Jurow & Barnard, 1993,p. 62

Phase three : Start up

In order to move from the preparatory phases to action there are a series of steps which are needed to provide the base information for quality management application. In essence the library's managers need to identify first of all what are the needs and the expectations of their customers; second, to identify and then measure the critical processes which are being used by the library; third, to set up pilot project teams to tackle those critical processes which have been targeted for improvement and, fourth, they need to provide appropriate training to members of the teams to enable them to function. It is interesting to note that the training recommended for all members of the teams includes interactive skills, consensus decision making and problem solving processes.

Phase four : Planning

The integration of the results of the project teams considerations into library processes is seen as part of that final phase, which also includes a strategic planning and departmental planning activity. Within this phase also there is an emphasis on spreading the expertise of the initial project teams to all members of staff and involving them in teams and problem solving activities. It is further suggested, in line with TQM Practice, that a rewards and recognition programme should be implemented; although no suggestions are made as to how this might be achieved.

CONCLUSION

Several arguments for the implementation of quality management, including the need for library and information services to introduce much more rigorous performance measurement, are related to the need to demonstrate quality.

Quality managements is, both an essential tool for managing the expectations and demands of clients and funders and the means to service enhancement. It was argued that only information professionals can understand the full potential of an information service, especially the significance of supporting the library's role as not just an information provider, but also facilitator and interpreter : they are the ones who will set the standards of provision against which quality can be assessed. An effective quality management approach within a library and information service can facilitate the setting of goals for the service and chart a way forward to ensure that services meet the challenges not only of today, but of tomorrow.

NOTES

1. A style of management was initiated by F.W. Taylor in which scientific management principles are applied to production, control, distribution and other activities in an organization. This style does not give the right place to employees' participation in management.
2. A style of management in which the employees take appropriate part in every activity of the organization.
3. Dr.W. Edwards Deming is an American Quality Guru. He is famous for statistical process control and the PDCA (Plan. Do, Check, Act) Cycle, together with organization wide involvement and fourteen points of quality management. These points are i) Create constancy of purpose, ii) learn the new philosophy, iii) cease dependence on mass inspection, iv) don't buy on price tag alone, v) improve constantly every process, vi) institute training for skills, vii) institute leadership, viii) drive out fear, ix) break down barriers between staff areas, x) eliminate slogans, exhortations, and targets, xi) eliminate numerical goals and quotas, xii) remove barriers to joy in work, xiii) institute education and self improvement, and xiv) accomplish the transformation.
4. Joseph Juran, Philip B. Crosby are American Quality Guru and Kaoru Ishikawa is Japanese management consultant famous for leadership and management responsibility, five absolutes and company-wide participation and participative management thought respectively.
5. A Quality circle is a small group of between three and twelve people who do the same or similar work voluntarily, meeting regularly for about one hour per week, in paid time usually under the leadership of their own supervisor, to identify, analyze, and solve some of the problems in their work, presenting recommendations to management and where possible, implementing the solutions themselves.

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TOTAL QUALITY MANAGEMENT : RELEVANCE OF ITS BASIC PARADIGMS TO THE OVERHAUL OF UNIVERSITY LIBRARIES IN INDIA

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Abstract In any environment where a service is being provided quality is very much emphasized. TQM (Total Quality Management) is an approach that has been widely adopted for enhancing service quality. This article explores the positive impact of TQM Techniques on various sections of university libraries in India. Necessary projections relating to TQM are provided under each section of an university library in India. Concludes that TQM serves as an efficient tool for innovative change in the library.

INTRODUCTION

In her letter (D.O.No.F.7-2/96 (CPP-II) dated 14-11-96 addressed to the Vice Chancellors in the Country, the chairperson of University Grant Commission (India), prof. A.S. Desai, has rightly stated that "the world and, inevitable, India, are in the threes of major social, economic and technological change..... Information technology is further contributing to this change and will have a major impact on the structure, management and mode of delivery of the educational system". And, in order to raise to the occasion, there shall be major paradigm shift, and indeed a positive one, in the organization and management of University libraries in India. The term Paradigm shift is to be stressed in this context. The term paradigm shift was introduce by Thomas khun in his highly influential landmark book, The structure of Scientific revolutions. Khun shows how almost every significant breakthrough in the field of scientific endeavor is first a break with tradition, with old ways of think-

ing, with old paradigms. The university libraries in India had faced a paradigm shift when Dr. S.R. Ranganadhan championed the cause of librarianship in India. We are passing through another such revolution in the area of University librarianship in response to 'major social, economic and technological change'.

Many of the management theories are synergestic with organization and administration of libraries . There application helped us to achieve 'quality' in the libraries. Total Quality Management (TQM) is a viable management strategy for delivering high quality services. It is strategy for human resource development (HRD) as well as organization development (OD).

WHAT IS TOTAL QUALITY MANAGEMENT (TQM)

TQM is total quality management. By Total we mean "all areas and functions in an organization, all activities, all employees, all time i.e., always". By Quality we mean "Product or service that totally satisfy the customers needs and expectations in every respect on a continuous basis". By Management we implied 'Quality does not happen on its own, it re quires to be planned and managed. Quality is a management function, though everybody in an organization is responsible for it. It therefore needs a systematic approach". According to Gilbert, total quality Management is a process of change andhas the characteristics:

1. Focus on customer expectations
2. Prevention of Problems
3. Building commitment to quality in the work-force
4. Open decision making

T Q M can be dividen into 3 broad aspects as shown in the fig.1.

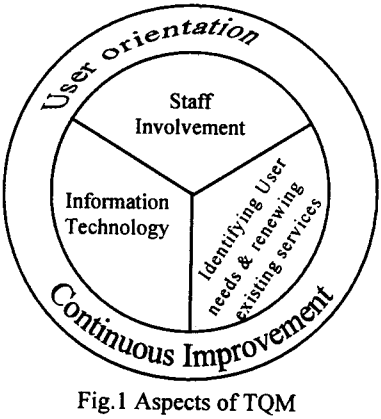


Fig.1 Aspects of TQM

APPLICATION OF TQM IN UNIVERSITY LIBRARIES:

TQM is a philosophy that permeates through all the activities going on an any organization. It is a systems approach which aims at bringing change in each of the subsystems and eventually in the total system. It is felt convenient to understand the techniques of TQM section - wise in a University library and desirability and feasibility of such techniques in the context of each section of the library. The building blocks of TQM in the context of University library can be diagrammatically represented in fig.2.

TQM is a continuous process. It is a journey but not destination continuous improvement in the various process, employee involvement, Training constitute the TQM foundation. These should permeate and guide all activities in all sections of a library. AT the top of the structure is leadership, qualities planning through technologies, management commitment etc.,

In the three tier structure of TQM pyramid the middle block is organised according to report of the Library communittee on University and college libraries (India : 1959).

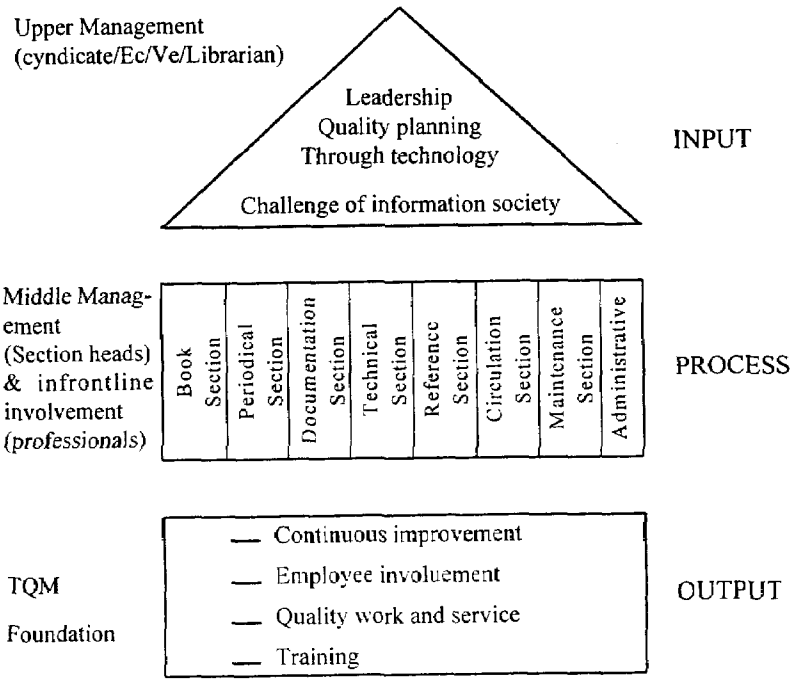


Fig. 2 Building blocks of TQM in an University Library

BOOK SECTION

This section is concerned with selection, ordering and accessioning of purchased as well as donated books. Theoretically the shape of sound book-section policy depends on the users survey which should necessarily find out the users needs and requirements. Respecting the cannons of TQM we should try to select books and other reading material for values of interest, information and enlightment of all the people of the community. Since the objective of the TQM is to conform to our customers, expectations, it is essential to understand fully the needs of the faculty members, by involving all of them in book selection policy, needs of the research scholars by making a survey. In case of certain essential books, if they are costly, paperbacks can be purchased and bound internally in the binding section attached to the library in order to maintain economy with out loosing the quality.

We have to devise mechanisms to ensure balanced growth of library collections by approiate budget allocation among various competing subject areas is essential pre-requisite for healthy collection development.

PERIODICAL SECTION :

There is spiraling rise in the price of periodicals. On the other hand, squeezing budgets does not permit us to purchase all the periodicals required to fulfil the needs of the users. However much the staff may try, there is bound to be a gap between the needs of the a library and the financial resources available. This makes it imperatives for them to pay very careful attention to the selection of periodicals. The limited periodicals budget available should be utilised for procuring the most relevant periodicals. For successful implementation of TQM principle, the staff of the periodical section should make themselves conversant with the subject interest and topics of research of the clientele of the library, and the periodicals which are most relevant from this angle should be selected and ordered. TQM also implies that the involvement of the section heads and other professional and semiprofessional staff in deciding the most important periodicals that prove to satisfy the expectations of the users. The availability of union catalogues would also help us to remedy the situations. Resource sharing and networking are also essential factors for successful implementation of TQM in University libraries in India.

DOCUMENTATION SECTION

In order to improve the quality of services offered by the libraries, there in need to strengthen the CAS and SDI services in the libraries. In order

to save the time of the reader, documentation is very much helpful. Most of the University libraries do not pay due attention to documentation work and documentation service. Use of computers is very much helpful for preparation of documentation lists and speed circulation of information to the relevant user without the loss of time. Since the national and international services are selective, they can be compensated by well prepared and uptodate documentation list covering exhaustively the periodicals received in the library will improve the library-user relationship which is cardinal requirement of the library services.

TECHNICAL SECTION

The traditional schemes of classification have been dubbed as 'logical absurdity' by Jevons and agreed to by Shera on the ground that classification schemes try to confine the multidimensional knowledge to a unidimensional order. Library automation and creation of databases, ablishing local area network (LAN) would lead to quality improvement in the technical services being offered. The catalogue prepared according to latest codes, making necessary modifications in the existing practices, is also essential. A good catalogue serves the multidimensional approach of the users. There is need for balanced renewal of technical services, harnessing the information technology, to achieve excellence in the library services.

REFERENCE SECTION

Our University libraries because of their financial limitations and faulty book selection policy and non-availability of reference sources in India market, have not so far been able to develop and collect standard and useful reference tools that could help the researcher and the faculty members in the pursuit of their study and research. In order to improve the quality of reference section, the recommendation of Carl White, namely, Broadening University's the book-section policy, the development of suitable collection of bibliographics, regular purchase of reference books by annual allocation of funds seem to be quite relevant. There is no separate allocation of funds for purchase of standard reference sources. This situation is to be ameliorated in order to meet the demands of the Total Quality Management.

CIRCULATION SECTION

From the middle of the 19th century onwards the world of librarianship has brought out various charging systems. The Indian University libraries

have, however, not been influenced by these charging systems. Most of them have followed the Browne charging system and only a few adopted the Network charging system. The better alternatives in the existing circumstances are punched card charging system, computer-based charging systems. The traditional methods do not help us to answer the essential queries like whom a book is issued, when it is due, to whom it is reserved etc. instantly. This is a great disappointment to the readers and likely to threaten the relationship between the staff and users. Most of the tasks in circulation section are respective in nature and automation of this sections naturally liberates the staff from the montonous activity in the section.

MAINTENANCE SECTION

The quality of library service does not depend only on the intellectual standard of the resources. It depends upon how far they are able to meet the informational requirements of the users and how efficiently they are organised. Arrangement of documents on shelves strictly according to call numbers. Quick and correct replacement of documents after use and timely adoption of preservation measures help in quick retrieval and longer use of documents and thereby contribute to the efficiency of library service. Moreover, the damaged and outdated books should be weeded out as and when necessary and should be replaced by corresponding new editions, if necessary.

ADMINISTRATIVE SECTION

In order to cops with the growing magnitude of management responsibilities, the principles of TQM have had to be evolved. TQM is a vary people centred approach to management. There are number of concepts which influence the employees commitment. They are :

1. The behaviour of the librarian to subordinates
2. Involvement of staff in decision making
3. The challence, responsibility and influence offered by the job
4. Open communication.

Management style and leadership always needs to be adapted to the environment. By adopting participative management libraries might to able to approach their problems from a healthier and more creative perspective. Truly effective management is the art of exporing workers to the joy, relevance importance and challenge of their jobs. By creating opportunities for growth and development, for training in the area where it affects the employees, we can improve the administrative system in the library. In the word of Goel and

Biswal, "the human resource should be managed in quality in team work. Other people characteristics are commitment, responsibility and human touch".

CONCLUSION

Organizational as well as individual effectiveness in University libraries depend upon development and renewal of all aspects required by Total Quality Management. Any dimension of TQM provide a powerful framework for rendering effective services in the library. TQM is the need of the hour in all libraries, especially in university in our country. It is an effective tool for improvement in all the library services aimed at high quality.

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TOWARDS A SUSTAINABLE LIBRARY MANAGEMENT SYSTEM

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Abstract Sustainability is the key concern of the emerging information society. If libraries are to develop in sustainable way, it must have the capacity to manage its resources effectively. Various elements are identified in a library/information centre for sustainable development which requires technologies that are more efficient and cost effective. A digital utility which can instal, operate, maintain and upgrade the technology and make it accessible on a pay-to-use basis is required. Role of professionals in digital libraries as knowledge navigators and resource integrators is clearly becoming clear in order to support a sustainable library and information clear in order to resource integrators in clearly becoming clear in order to support a sustainable library and information centre.

INTRODUCTION

The concern relating to sustainable development have been present fro many years but it is only within the past few years that sustainability in libraries and information centres has assumed prominence. Sustainability is the key concern as, sooner of later, local resources will have to replace short-term external funding and technical expertise. It should be understood and applied within a changing and open society. According to the World Bank Group Vision statement, a global society is "emerging with pervasive information capabilities that makes it substantially different from an industrial society: much more competitive, more democratic, less centralized, less stable, more able to address individual needs and friendlier to the environment." Libraries should be viewed as a tool of promoting education , public awareness and training within the context of sustainable development.

Defining and understanding sustainable development

Sustainable development has been defined as "development that meets the needs and aspirations of the present without compromising the ability of the future generations to meet their own needs." If libraries are to develop in sustainable way, if must have the capacity to manage its resources effectively and expand their technological and institutional capabilities. Real steps towards a more sustainable use of library resources call for a much closer interaction between users and librarians. Sustainable development is achieved through the intersection of the three key elements that encompass the viewpoints of technologist, economists and sociologists as shown in fig.i

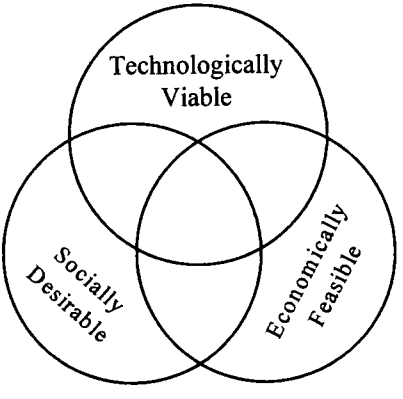


Fig. 1

Following are the elements of sustainable development identified in a library/information centre

- New technologies/technology transfer
- Efficient use of library resources
- Integrated information systems management
- Redefining market economy
- Education
- Perception and attitude changes (paradigm shift)
- Social and cultural changes

Role of technology in sustainable development

Sustainable development requires sustainable technologies and as we approach the twenty-first century, libraries must develop more efficient and cost effective technologies for its management. American management guru Peter Drucker says," Technology is important primarily because it should force us to do new things, rather then because it enables us to do old things better. We cannot attain sustainable development without better technologies. The application of technology has been the central means of greater human productivity and consequently, increases in standards of living. We need new technologies, from materials to processes, that we have not even dreamed of yet. Technology focused on sustainable development is a key to solving problems created in the past and to preventing new ones in the future. Development of information technologies has probably been more rapid and dramatic then progress in any other field within the last thirty years. This dynamic progress may continue into the future also. Information technologies are often seen as the new bedrock on which modern societies are built. The development absorb and motivating will provide major advantages. Currently, about 2 per cent of the world's population has access to computer-based technologies, Internet and information superhighways define their capabilities in relation to national and global needs but do not focus on how the technologies can be made affordable for the poor on a large scale. So far these technologies and information superhighways are separating the "haves" further from the "have-nots".

The information Age is well upon us in seven major fields: learning, diagnostics, management, physical planning, finance, entertainment and communication. The technologies to achieve a major advance are already here in the communication capabilities of broadcasting telephony, cable and satellites; the processing and interactive abilities of computers; prodigious electronic storage capability and in the abilities of these technologies to communicate in sound, picture, symbols, graphics, video, numbers and scripts and to do so on demand. These capabilities will continue to improve and the costs of the technology will continue to fall. Low orbit satellites can bow make inexpensive, two-way digital communication possible with any point on earth using radio. Libraries serve as nodal point of local information dissemination centres and these initiatives are showing the extraordinary potential of the technology for empowering people for their own development. Full potential of the technologies lies in combining their separate capabilities into integrated systems. Some libraries/information centres can never have access to the potential of these technologies if they have to own them in order to use them. This obstacle can be overcome by a new utility. As all utilities like water, electricity, telephone and railways etc. and operate on the basis of large numbers of people each paying small amounts for usage and reallocating revenue from commer-

cial and wealthier users to subsidize small and poor users. The same can be done with the combination of digital technologies. We can create a new from of utility; a Digital Utility or Community Utility which can install, operate, maintain and upgrade the technology and make it accessible on a pay-to-use basis. Such a utility would offer access to hardware, software and through them, to information. Users can be identified and their use of services and equipment metered. Differential user rates can be charged for different users and categories of use. No new technology is involved. Community Utilities build on going programs, provide a basis for widespread replication of successful initiatives and permit, for the first time, sustainable funding of the social application of the technology where libraries may act as resource centres and people can have access to information. Schools, clinics, small businesses, local agricultural offices and others can all be linked to the resource centres. Many countries have established community information centres using printed, tape and video materials. These resource centres are linked to the Internet, the world wide web, specialist networks, data bases and other sources of digital material and thereby increase use of all of them.

Role of professionals in sustainable development

The information revolution has created the need for a new kind of professional; someone who is skilled in locating, organizing, manipulating, filtering, and presenting information. Libraries involving printed textual materials have professionally trained librarians providing management and services. These libraries have collections, services, and patrons that are divided by type: academic, school, special, and public. Print-between technical and public-service operations. Service subdivisions are typically specialized by function or format: acquisitions, collection development, circulation, cataloguing, reference, microfilm, documents, multimedia, systems and administration. Distinctions also separate professional from support staff. Digital information libraries have human resource requirements that are only now beginning to become clear. Although librarians have traditionally engaged in the organization and arrangement of information collections, digital collections and services call for librarians to function as knowledge navigators of, as some have suggested, as cyberspace organizers in order to support a sustainable library and information centre. The nature of digital information resources also requires digital librarians to be resource integrators and to offer users customized consultation and interpretation services. These librarians add value to the use of information and while working in digital information structures, are creators of information through the assembly, organizations, and generation of new knowledge. Libraries are not merely streamlined service centres. They are cultural and intellectual indicators of the first order and librarians must focus in developing strategies upon specific rather than generalized solutions

CONCLUSION

Information technologies are often seen as the new bedrocks on which modern societies are built. Libraries should be viewed as a tool of promoting educations, public awareness and training within the context of sustainable development which can not be attained without better technologies. Technology focused on sustainable development is a key to solving problems created in the past and to preventing new one in the future. Information systems which are comprehensive, easy to absorb and motivating will provide major advantages in this direction with the help of librarians playing a crucial role.

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TQM AND ITS IMPLEMENTATION IN LIBRARY AND INFORMATION SCIENCE ENVIRONMENT

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Abstract This paper deals the basic concepts of TQM and its need in library and information Science environment. Also explains the issues associated with the implementation of TQM important elements and barriers involved while implementing TQM in the field of library and information services.

INTRODUCTION

Library services are the core and the ultimate objective of any library work. Therefore in order to provide efficient, pinpointed and exhaustive information service to its users, the whole library system should be qualitatively managed. This effective management in turn necessities the need for evaluation of whole information system. As library is one of the service oriented, non-profit organisation, the effectiveness of the services can be studied on the basis of the satisfaction of the users of information services. On the other hand, measuring the satisfaction of the users is not an easy task. But with the help of total quality management, we can introspect, analyse, extend and enhance the good library services to its users.

WHAT IS TQM

TQM is an evergrowing concept in all the spheres of production, which emphasis on Human Resource development and quality.

To make the output of any information system consumable quality is essential. Quality represents a moral responsibility of serving the user community. Thus TQM is defined as managing the entire organisation so that it excels in all dimensions of products and services which are important to the customers.

NEED FOR TQM IN LIBRARY AND INFORMATION SCIENCE ENVIRONMENT

2.1 Information explosion:

Due to the information explosion, there is a growth in the number and size of the document. Totally, there is a expansion in the universe of knowledge. Thus, to access, organise and disseminate the information, TQM is a basic need.

2.2 Management of the Quality of Service:

The Library and information services are multi characterized in nature. The fundamental characteristics of services are Intangibility- Services cannot be evaluated in advance of use.

Perishability- Stocks of the Service elements of the service package cannot be held and services need to deal with demand and capacity directly.

Simultinity-The users must be present before the service can take place.

Heterogeneity-There is inherent variability in the service offered.

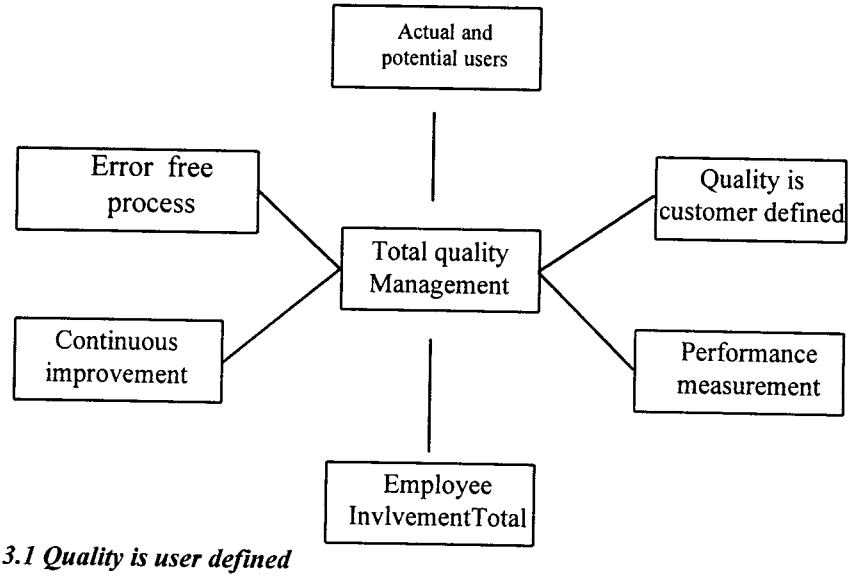
There is a continuing debate concerning the measurement of Service quality. The TQM helps in this way.

2.3 To Establish Quality Standards:

In this dynamic and information revolution age, The TQM is the only hope for establishing quality standards in libraries and information services and management.

ELEMENTS OF TQM

The main elements of TQM are shown in figure 1.



3.1 Quality is user defined

The ultimate objective of any information centre is the satisfaction of their clientele. Thus, quality should be defined in terms of user's perceptions. It has to fill up the gap between expectations and perceptions.

3.2 Performance measurements:

Performance measurement needs to be based upon timely measures of and feedback on performance through superior quality information system.

3.3 Employee Involvement:

To meet the objective of any library and information centre, employee involvement is necessary. Each individual must take the initiative and not relay upon someone else. Everyone must understand that the contribute equally and can only succeed through cooperation and support.

3.4 Continuous important

Continuous improvement must be seen as the responsibility of everyone in the organisation. To develop this a focus on training, education, communication, recognition of achievements and teamwork is often seen as appropriate.

3.5 Error free process:

As the library is a growing organism, the focus of TQM should be on the reduction of costs of service, achieve error free process and save the time of the user.

3.6 Actual and potential users:

The only way to ensure that the libraries have a focus on users that impacts equally on all types of users such as actual and potential users. The staff should be encourage to identity these users who are in need of different types of sources and services and educate them for utilising the library facilities.

IMPLEMENTATION OF TQM

To implement TQM, the following factors should be considered.

4.1 Defining quality:

In a library environment, a peculiar excellence or superiority of the library service can be achieved by a good quality management. Therefore to avoid some of the difficulties in defining service quality, Teams departments and individuals need to be assisted in identifying definitions and measures that are appropriate in their context.

4.2 Establishing Organisational Culture:

The term culture is used in relation to corporate identity which create a common understanding amongst organisational members concerning the organisations mission and how its members should behave. The culture varies depending on the culture of the parent organisation. For example in public libraries, the parent organisation's culture is public service oriented; in a business context, the culture will be commercially driven and in an academic library, Teaching & Research will be valued.

4.3 Define the role of Administration:

In TQM, the administrator becomes a symphony conductors, The TQM modifies current leadership roles at the top, middle and bottom of the administrative hierarchy.

The top administrator will do less of the decision making and they delegate their authority to middle level management to mange culture. The top management will have to establish a planning process that is flexible enough to adopt to the propositions that the TQM process develops. Middle management has responsibility for monitoring the process of TQM and authorising implementation of the process changes that are identified for improvement of quality.

4.4 Measuring the quality:

The purpose of measuring the quality is to determine the effectiveness, efficiency and value of what have been achieved. This process reveals the strength as well as the weakness of any library or information system. This basic function is rightly called as investment for the future.

The following are the different approaches of measuring quality.

Complaints- The level of complaints is one indicator of quality and provides some directions for potential environments. However, absence of dissatisfaction is not necessarily proof of user satisfaction.

Users Survey- The survey can be made with the help of some tools like questionnaire, interview and observation.

Bench Marking- To attain TQM, the library system has to compare its organisation, service and other functions with the other competitors having similar characteristics and features.

Suggestions Boxes:- The users of the library should have freedom to indicate their suggestions for the improvement of the library. Suggestions boxes should be provided so tat several suggestions can be made for the improvement of the performance of library system.

4.5 Establishing quality as a strategic issue:

The library and information cinders should accept the importance of user's requirements throughout the parent organisation by which continuous improvement can be identified as one of the library's objective. Which is vital for the credibility, continuity and longevity of the TQM initiative.

4.6 Redefining Organisational Structure:

Organisational Structures can be devided into two main categories: Mechanistic and organic. Mechanistic structures include functional bureaucratic structures which tend to be relatively inflexible, with clearly defined

levels of authority, and decision making that is governed by policies, procedures and rules.

Organic structures, employ decentralized decision making where by both accountability and responsibility are transferred to as low a level is the organisation as effectively possible.

The various different management structures have been explored on the basis of the measuring quality. These structures are particularly ripe for the adoption of a TQM based approach.

4.6 Empower the staff to analyse and solve problems.

Empowerment of the staff is one of the hallmarks of the TQM model. The library management must empower the staff to analyse and solve the problems on the basis of data collected by evaluating quality measurement. The people who are in the bottom of the administrative hierarchy are very much in contact with the regular users of the library. So that is very much necessary to empower the staff to analyse and solve the problems.

BARRIERS TO TQM

1. Failure of top management to have a long term vision seeking short-term gains defeat the very purpose.
2. Lack of exemplified to administration commitment. A sense of powerlessness on part of seniors by virtue of empowering subordinates. The feeling is that a part of their power is lost.
3. Fear of senior administration of losing control which results in departmental teams, members being unavailable to participate activities.
4. Apprehension of senior management about the efficiency of TQM Methodology.
5. Myopic view of looking of training as a cost rather than long-term investment.
6. Lack of faith in effectiveness through process changes.
7. Belief in traditional system.
8. Not adhering to a structured and sustained investment plan.

CONCLUSION

TQM, as the name suggests, has to be steered and managed. It calls for a strong leadership at all levels. They are developed as facilitators and ulti-

mately groomed to become trainers keeping the organisation lean enables close and personal interaction across levels which are strong motivators. Full employee commitment will only be achieved by appropriate human resource management structure.

Our traditional thinking and management systems are at variance.

Liberalization has seen modern concepts flowing into our country as a storm. So has TQM. The implementation of TQM in the library and information service environment posses interesting challenges on the road to potentially significant benefits.

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TQM IN LIBRARIES - REALITY, DESIRABILITY AND FEASIBILITY

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Abstract Discuss the concept of TQM from the context of Library and Information Sciences. Explains in detail what is TQM and discusses the steps to establish TQM in Libraries. Describes the concept of sustainable Librarianship. Highlights the desirability of I.T. in Library and Information Sciences. Highlights the desirability of I.T.in Library and Information Sciences. Provides the importance of new technologies and their use in LIS. Listed out the important services of telecommunications for Information service. Enumerates the importance of Management techniques to achieve TQM in LIS, Elucidates the advantages of computers in LIS. Concludes by discussing the quality improvement barriers.

INTRODUCTION

TQM owes its genesis to postwar research of management consultants like W.E.Deming and Joseph Juran. In India TQM is now a part of the executive vocabulary and it has become a key management issue. In the context of Library and Informations Sciences, the TQM has its beginning from the date of publishing the book "Five laws of Library Science" in the year 1931. The implications of Five Laws of Library Science of S.R.Ranganathan has similar emphasis on total quality in Library operations and services. However, the TQM approach to the modern Library Management is quite meaningful and desirable.

In general, TQM is management which provides for continuous satisfaction of needs of the users/readers at the lowest possible cost/limited budgets through the involvement of all professionals/semi professionals/Non-professionals in any library system. Involvement of Library staff is primary requisite in TQM. Further it demands commitment and professional discipline.

TQM is not a panacea or in Alladin's lamp. It has to be incorporated, nurtured and then only the results are to be tasted. That is, it has to evolve out of the bowels of the organisation. It is indeed time consuming rigorous.

In this paper, the desirability and feasibility of application of TQM in libraries is examined especially from the context of Information Technology and proved that I T is essential for sustainable development in library and Information services.

T Q M CONCEPT, DEFINITION AND PRINCIPLES

TQM is an evergrowing concept in all the spheres of production. TQM is more than an attempt to make better products; it is also a search for better ways to make better products. Adopting the TQM philosophy commits the library/information centre to the belief that there is always a better way of doing things, a way to make better use of the library's resources and a way to be more useful.

TQM in general, means

- Total : Takes a systems view (total view) which is exhaustive and rigorous
- Quality : the major element of TQM is continuous quality improvement
- Management : Optimum utilisation of resources by utilising the principles of management - Forecasting, planning, organising Directing, Coordinating and controlling along with operations Research and other modern management techniques.

TQM in Libraries influences the three concepts, namely : Every Process, Every Job, and Every Person;

- Every Process : All functions in library system. They are acquisition, technical, maintenance, circulation, serial control, administration functions. All sections involving in quality improvement.
- Every Job : All individual jobs in library organisation. They are, preparing book indents, order routine, accessioning, passing of bills for payment, classification (Universal Scheme), Cataloguing (Universal code)

stock rectification, Bibliographical work, charging and discharging, resource sharing, binding, reprography service, Indexing service, cleaning, dusting accounts, tools and plants, supervision, readers service, computerisation etc., All these jobs must involve in correct work and to avoid errors to achieve quality.

- Every Person : Library Staff, such as professionals, Semi-professionals, non-professionals and Authority /Administration. All employees and authority must feel responsible for the quality of his or her work and for the work of the group.

T Q M : DEFINITIONS

Feigenbaum defines TQM as "an effective system for integrating the quality development, quality maintenance and quality improvement efforts of various groups in an organisation so as to enable production and service at the most economical level which allow for full customer satisfaction."

According to David A.De Cenzo and Stephen P.Robins TQM means "that a company change its operations to focus on the customer, to seek continuous improvements in its operating, to involve workers in matters affecting them, and to empower workers". (Human Resources Management concepts and practices. New York. John Wiley, 1993 P.354).

According to P.K.Banerjee and Ramesh Narayan TQM means "By Total - All areas and functions in an organisation, all activities, all employees, All time that is always: By Quality - Product or service that totally satisfy the customer's needs and expectations in every respect on a continuous basis. The above meaning for quality he replaced the conventional view that "quality meant product manufactured exactly to the specifications; By Management - Quality does not happen on its own, it requires to be planned and managed. And quality is a Management function, through everybody in an organisation is responsible for it. It therefore needs on systematic approach".

STEPS TO ESTABLISH TQM IN LIBRARIES

The Japanese have developed five simple words as a directive for achieving work place vitalisation. They are rightly applicable to libraries as detailed below:

a). SEIRI : It means 'Sort Out' Unnecessary items. Selection of documents on the basis of demand of the user from the plethora of book publications.

b). SEITON : It means 'Orderliness'. Place for everything and everything in its place. Classification and cataloguing each and every document as to keep them in helpful order and correct location for each document.

c). SEIKETSU : It means "Cleaning'. Keeping the Library and working units clean and neat. It provide a pleasant working environment.

d). SEISO : It means 'Cleanup'. It refers to maintenance. Replacing the use books, from time to time. In other words stock rectification.

e). SHITSUKE : It means 'discipline'. Good habits and following the rules and regulations by the staff and Readers. It develops good culture and discipline.

T Q M THROUGH I.T. IN LIBRARIES

A) Sustainable librarianship through technology

Development activities are tagged with the growth of science and technology in any walk of life. The sustainable development means meeting the basic needs of present generation without interfering with the legitimate rights and impairing with the abilities of the future generation for which we are all morally obliged. Sustainable librarianship is possible through application of Information technology. Today I.T. offers a new way of achieving existing tasks or fulfilling existing functions in Library and Information activities. In the present days, the Readers/users need only use and indeed are certainly only like to pay for, a specific piece of Information on anyone given media. Further I.T. is a servant to information Management to achieve quality.

B) I.T. for Library and information Services

Information technology is now a pervasive term, often used synonymously for 'New Technology' or 'New Information Technology and liberally implied by both expert and laymen to a wide range of systems.

UNESCO defined I.T. as "Scientific, technological and engineering

disciplines and the management techniques used in information handling and processing; their applications; computers; and their interaction with men and machines; and associated social, economic and cultural matters."

I.T. emphasis the use of scientific method, new technologies, management techniques and computers through trained human force to handle information collection, storage and retrieval for the integrated development of society.

Now let us examine how these techniques are useful to achieve Total Quality in library and information services.

1. Scientific Method: Scientific method serves as handmaid to TQM. Because, Scientific Method includes: (a) observation (b) measurement (c) experimentation and (d) interference.
2. New Technologies: include visual communication technologies and telecommunication technology from the context of Information transfer.

(i). Visual Communication Technology:

(a) Electronic Display: Electronic displays are vital transmission technologies. They are also primary communication technologies. The television is just one example of the importance of electronic displays in communication among human beings.

(b) Film and photography: Film is an important means of communicating events, whether for record-keeping, recreation art, or instruction. Continual advances in film technology have significantly improved its usefulness as a means of communication. Corresponding advances in technology have increased the efficiency and effectiveness of cameras. These developments provide greater realism in depicting events, and at a lower cost in both human effort and money.

(c). Print: Perhaps the most significant advance in communication technology in the last 500 years was made by Gutenberg, a German printer who lived in the early part of the fifteenth century. He revolutionized the world's communication capabilities with his introduction of the printing press.

A major contemporary development in the communication technology has been the process of xerography, which allows print to be duplicated through chemical and thermal processes.

(ii). Telecommunication Technology:

The use of telecommunications in conjunction with computers offers

an important opportunity to effect the way in which information is handled, stored, processed and communicated. Library and Information centres may use a variety of different telecommunications, networks for different purposes. Some examples might include.

(a) A local area network to link the terminals within a library housekeeping system,
(b) International and National data networks to search databases on remote computers.
(c) National data and voice networks to access videotex Services.
(d) Local cable television networks to access and provide information and entertainment through this channel.
(e) National and International voice networks for telephone calls.
(f) Broadcast services to receive teletext.

The following are some of the Library and Information services that can be provided through telecommunications technology. These services are necessary for sustainable librarianship.

(a) **Videotex**: Videotex systems transmit text or graphics stored in computer databases via the telephone network for display on a television screen. The databases stored on powerful computer systems are accessible through a television set and telephone.
(b) **Teletext**: Teletext is a non-interactive form of videotex and as such is a system designed for the general public and mass communication. It is a text-based information system in which the information is transmitted by the television authorities using spare lines in the television signal. In teletext the data is stored as frames, with each frame containing a screenful of alphabetic, numeric and graphic symbols. The coded character signals are transmitted as part of the television picture signals.

(c) **Electronic Mail**: Electronic mail is primarily an alternative to the conventional postal mail service. Additionally, it offers a range of new features based on the storing and processing abilities of computers. The key features of an electronic mail system are that, two or more people are able to communicate with one another; the message is transmitted via electronic mail systems also include, telex, facsimile, computer-based message systems.
(d) **Telex**: Teleprinter exchange is a text-oriented service. It is in many ways similar to the public telephone service, except that it carries teleprinter signals instead of speech signals. A super telex service under the name 'teletex' (not to be confused with teletext) is also introduced. The terminals used with teletex are word processors or similar pieces of

equipment.

(e) **Facsimile Service**: Whereas telex and teletex cater for text only, facsimile treats a document as a picture. Facsimile services can utilise either the telephone or the telex network for transmission of a faithful copy of an original document. The main advantage of facsimile is that it transmits text and graphics, diagrams, handwriting, etc., equally easily as it treats then all as still pictures.

(f) **Computer-based services**: Paper-less electronic mail is usually associated with computer based electronic mail systems. These services can be offered on public or private telecommunications networks, communicating text processors are an example of these.

(g) **Electronic journals/Newspapers**: It may take a variety of forms, but one central characteristic is the use of electronic network communication as an aid in writing, submitting and referring papers, and in other activities associated with the compilation of a Journal/Newspaper. Now the electronic news papers are already released in advanced countries.

(h) **Videoconferencing/Teleconferencing**: A Videoconferencing system has already become available within Europe as part of INSIS (Inter-Institutional integrated services information systems). The broad band system includes hidden cameras, stereophonic sound and a flat wall screen in colour. Copies of for instance, a convention between two governments can be signed at both sides and transmitted by Telefax to the other side for counter-signing. In teleconferencing several people can have face to face communication without any of them leaving their office. This is a time saving and economy device, adopted for long distance conferencing with one another.

C. MANAGEMENT TECHNIQUE FOR TQM IN L I S

The overall mission of libraries as social institutions is to optimize knowledge among actual and potential library patrons by making available and by interpreting to them all records of human knowledge. In turn, the function of a librarian is to act as a catalyst, initiating new relationships within the library organisation by creating conditions for favourable to constructive relational processes.

These functions are reflected in different management techniques such as planning, organising, decision-making, human relations development, Budget techniques, evaluation techniques, etc.,

Management techniques for total quality achievement can be listed as follows:

1. Application of Scientific Management to libraries

2. Principles of modern planning for libraries
3. Good organisation structure for libraries
4. Decision-making process for libraries
5. Systems approach to library management.
6. Human resource development (HRD) for libraries
7. Budget techniques for libraries (PPBS & ZBS)
8. Performance evaluation in library management
9. Motivational theories for library management
10. Operations Research in Library management.

COMPUTER APPLICATION IN LIS AND TQM

Computer in LIS plays a key role in TQM. Computerising the activities in acquisition section helps us to reduce order back logs; reduces acquisitions cost, speeds up ordering work, improves fund control, achieve compatibility with resource sharing libraries. It Automatically improve in Acquisition work when compared to manual work.

So also automation of serials control help us to handle subscription to current periodicals more easily, quickly and economically. It helps to provide current position and holdings of periodical from time to time. Therefore, it achieves quality in serial control.

Computer application for circulation work will help to provide information about the book on loan, due date, reservation list, over dues, Inter-Library loan account, etc., This automatically serve the time of the reader and maintains quality in charging work.

Cataloguing and indexing is another area of computer application where monotonous work of technical staff is reduced and efficiency will be achieved in preparing cataloguing cards, etc., Also saves the time of the staff. Consistency in assigning class number is also achieved. This will assist to attain TQM in technical work in the library.

Computer application for administrative work will stream line the repetitive work in the library in maintaining salary bills of the staff, budgetory control, calculation of bills etc., Therefore, it is clear that computer application in L I S will achieve TQM in libraries.

Online access to bibliographic and referral databases has the inevitable technological development of applying computers to the processing of bibliographic information such as DIALOC, MEDLINE, TOXLINE, etc.,

Networking is another facility available through computer applications to library operations. Today number of library networks are in active participation to distribute and share information among the libraries. For ex-

ample, INFLIBNET, DELNET, CALIBNET, etc., Also communication networks, such as ERNET, INDONET, NICNET are also serving the library and information centres to provide current information. Therefore the library networks and communication network are the result of computer application only. All these are helping the libraries to improve quality for sustainable librarianship.

TRAINED PERSONNEL

I.T. application demand trained personnel to handle information storage and retrieval in libraries. It is not possible to change or recruit new staff from time to time as and when new technologies are introduced for quality improvement in library services. What is required is in service training to the existing staff from time to time to update their skills needed to understand and implement new technologies to improve quality at work and efficiency in service. To achieve TQM in libraries, the staff training programmes are compulsory.

QUALITY IMPROVEMENT BARRIER IN LIS

There are endless reasons found for not getting on with a quality process in libraries inspite of the availability of I.T. Important among them are:

1. Management/Authority talks about quality, but they don't spend much time/attention on it in practice.
2. Every library staff is possessing requisite qualifications, but they are not efficient in discharging their duties. This is the result of non-scientific selection and recruitment.
3. Management/Authority force for scheduled work from the staff, but they do not provide required staff and ignore suggestions from the staff/ readers. All most all libraries are suffering with inadequate staff.
4. Performance evaluations in library management still don't include accountability and rewards for quality improvement is not takes care of.
5. Job description/ Job specification for different positions or levels of jobs in library is absent. Hence staff do not shoulder responsibility and don't have specific goals for quality.
6. The existing library staff formulas, library budget norms are out of date and need to be updated and standardised on the basis of current technology to achieve quality in library work and library service.
7. Conclusion: Understanding the attributes associated with the concept of information enables us to achieve precision in analysis of the document and query of the user. The knowledge of major attributes of time-

liness, accuracy, verifiability, accessibility, associated with information would not only be an added value to information technology, but it also improve overall quality of services and processes inherent in TQM.

In addition to the above, the image of the future libraries and information centres involves a number of databases available on different computer systems and accessible through a variety of different networks to different users. Therefore, the future librarian has to manage the libraries through computer with trained (skilled) personnel adopting TQM techniques to extend efficient information service to its readers. The new technologies (I.T) ought to be incorporated and integrated to achieve better quality in collection, storage and retrieval of information.

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APPROPRIATE TECHNOLOGY FOR QUALITATIVE AND SUSTAINABLE LIBRARIANSHIP

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Abstract The paper outlines the genesis & evolution of global information system. Highlights the impact of general technological stage of mankind on information handling activities and categorises the libraries accordingly. Focuses on the paper based Research libraries whose survival is being threatened vigorously on technological front by the latest information superhighway, on economic front by the latest quality movement and on social front by the customer care programmes. Summarizes the importance of information for all walks of life and defines it in the way library professionals are concerned with. Compares the consequences of information revolution to those industrial revolutions. Points out the gaps in generation and utilization of information. Examines the potentiality of information technology in enhancing the accessibility of information. Briefly discusses qualitative and sustainable librarianship and suggests the suitability of quality infrastructure model, based on European quality Award. Discusses the various components of this model and exhibits a close relationship with latest technology. Discusses appropriate technology for paper based libraries and emphasizes the role of technology (IT) in library automation and ultimately qualitative and sustainable librarianship.

Highlights the role information technology plays in computerization and networking of libraries, which in turn enhance the accessibility, speed, accuracy, reliability, poten-

tiality and exhaustiveness of information handling activities of library. Concludes that customer is the kind in modern era and customers prefer both paper and digital technology. For qualitative and sustainable librarianship paper based research libraries must be modernized and managed with the latest IT and the latest management strategy. (TQM).

INTRODUCTION

The primitive man had only personal information system comprising sense organise as devices to receive impressions of environment, Brain to store and analyze and nervous system to communicate. The development of the script, clay tablets, papyrus, brush, abacus, quill pen etc., had increased the speed, accuracy and capacity of scholars to record, store, analyze and communicate information. All the three techniques of information handling have gone through the four well defined technological stage of mankind. Conceptually libraries can be divided into four categories.

(i). Library based on pre Guttenberg technology;
(ii). Library based on Guttenberg technology or paper based library
(iii). Computerized and networked library; and
iv). Electronic, Digital or virtual library

The scope of this paper is limited to modern paper based research libraries which came into existence at the end of 19th century and in the 20th century and are destined to reach in the 3rd stage of computerized and networked library by the beginning of the 21st century. Present Technological and information stage of mankind keep on forcing the libraries to reexamine the traditional and manual methods of librarianship for provision and access to information which is not available in paper form and is being generated and distributed over Internet and economic and social force of globalisation, privatization, liberalization and knowledge capitalism keep on motivating the librarians to adopt the latest management strategies from the mainstream management practices for information management.

TQM or qualitative librarianship is a logical extension of the management theory and practice from the mechanistic approaches of FW Taylor, Henry Fayol and Max Weber to soft system methodology of Peter Checkland. This dynamic engagement approach challenges us to see libraries and its management as integral part of Modern Global information society. TQM which is one of the six approaches of dynamic engagement, adds one more dynamic dimensions to library management because quality is always a moving target which

refers to speed, responsiveness, timeliness, accuracy and exhaustiveness in acquisition supplemented by access, organization and dissemination of information for total customer satisfaction.

INFORMATION, INFORMATION REVOLUTION AND IT

Information that we primarily concerned with is always a products of the process of communication. For communication it is essential to have language, natural, artificial or their combination. Where there is communication there is a message. So information is the message (inseparable from its meaningful medium) Conveyed or intended to be conveyed by a systematized body of concepts, or its accepted or acceptable substitutes. Information when it relates to some compound concepts such as information studies, information systems, information sources, information products, information services, information storage, information dissemination, information retrieval is synonymous with knowledge in some substantive senses. Facts and figures that undergo processing for the purpose of generating another piece of information are referred as data (1). The tremendous growth of information in all the formats is known as information explosion or information revolution. This revolution is bigger than its earlier industrial revolutions has affected vigorously all the vital spheres of the life of the civilized society (2). The major challenges posed by this revolution is the gap between information. It is the modern science of gathering, storing, manipulating, processing and communicating information. Globalisation and commercialization of information, made information a fugitive international resource as well as product and service of vital importance both for individual and nations. Many information providers, in addition to libraries and information centres have entered into the market to provide universal access to multiple information resources to the end users in all possible formats from a single work station (3). Much like the business sector, we in academic libraries are pre-occupied with the future and out ability to maintain our market share and to prosper. Qualitative and sustainable librarianship with appropriate technology is the answer.

QUALITATIVE AND SUSTAINABLE MANAGEMENT

The corporate literature on TQM and sustainability has much to offer academic libraries. In a time when budgets are shrinking and customer expectations are increasing Daniel Seymour in his boom on "Q: Causing quality in higher education, discuss his belief that major changes do not occur in organisations unless pressure from outside the organization, promotes it to do so. Seymour cites four forces for change i.e., survival in an increasing competitive

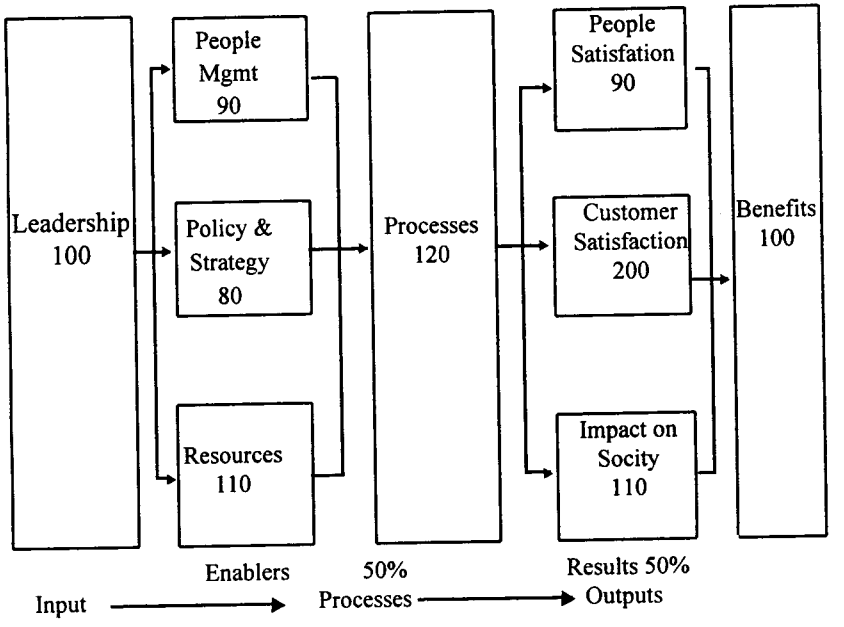
environment, the increasing costs of doing business, a trend to make organization more accountable for their actions and outcomes and dimmed distinction between products and services (4). The new paradigm of management put information as the prime resource. Qualitative librarianship may be defined as a way of managing, to improve the effectiveness, efficiency, flexibility and competitiveness of a library as a whole, and it involves whole organization getting organized and committed to quality in each department, each activity and each person at each level so as to exceed customer needs and expectations (5). Sustainable librarianship stands for he totality of philosophers principles and practices that ensure the continued growth of stock, staff and services and potential users (6). The relevance of five laws in present environment is enough proof for the sustainable library science and librarianship. A small, balanced, well organized and maintained collection which can be enhanced through resource sharing and remote access is better than large unorganized collection. Dependence on huge grant is a negative point for sustainable librarianship. The immediate environment of the library, which prove finances and the customer, will guide the librarian in his day to day decisions and activities. Moreover collection building and provision of new services should not be only for the present generation but also for future generation. Continuity of services and other facilities is the hall mark of sustainable librarianship. The involvement of stake holders for the discontinuation of the unworthy programmes and continuation of the appreciated programmes is the hall mark of the sustainable librarianship. In nut shell what is qualitative is also sustainable. Survival of the fittest. The qualitative librarianship is concerned with the convergence of the older culture of the book with the merging culture of digital resources heralded on the information age (7).

TECHNOLOGY BASED EUROPEAN QUALITY MODEL FOR QUALITATIVE LIBRARIANSHIP

uality for libraries in organizations, dedicated to teaching, learning and research means first of all overcoming the domination of Gutenbeg culture because major portion of the primary information is available only in digital form. Secondly, it calls for a new model that takes into consideration the emerging culture of the printed word and digitization. Many international professional organizations such as IFLA Guidelines, ISO 9000 series, European quality award, Basic philosophy of librarianship i.e, fourth law of library and fifth law as dynamics of librarianship. INFLIBNET, all the library networks and fifth need clearly indicates that IT is the most important factor in determining the effectiveness, quality and substainability of librarianship.

3.1 Information Quality Infrastructure Model For Qualitative Librarianship

or Quality of Management (8)



3.2 Leadership

Information technology has brought sincerity and confidence in leaders to provide quality services. This is evident from the development of computer and communication network. In information technology environment autocratic style of leadership will automatically change over to democratic and soft system methodology. Since empowerment and accountability is the primary requirement. It will provide the leader (MIS) Decision support system, hypertext and hypermedia for accessing information (10), electronic support sheet, expert system and DTP as tool for better management of library operations. Leader in the new technological environment can play the role of enabler, facilitator, intrinsic motivator, change manager, breaker of staff resistance to technology and team maker. Leadership has to articulate the strategic vision, mission, goals and objectives statements keeping in view the immediate and future environment. Out of three decisions namely strategic, managerial and operational computer have been used for operating decisions.

3.3 Communication

Communication can be defined as the transfer of information, ideas, understanding or feeling among people. Effective communication is funda-

mental for every organization. Communication is linked with management practices (11). IT is the media for making communication effective through written, audio, video and multimedia means. Communication system is the key to simplifying the bureaucracy. Communication network save time, energy and money for sending information between and among people. Internet is the latest technology for providing SDI, CAS and reference service to the people of an organization, like Internet to the world. Internet is nothing but Internet within the organization.

3.4 People Management or Human Resource Management

Library automation is a tedious time consuming task for university libraries. Education and training should be provided to the staff and users in the usage of IT & Automation. In the technological environment where networking, learning and teaching are continuously changing, there seems to be a shift in emphasis from traditional technical skill and knowledge to interpersonal business skills. Professional staff in the libraries need to be trained in their new role as facilitators, consultants, on-line searchers, gatekeepers, interpreters, navigators, communicators, information managers, researchers, collectors and preservers of knowledge & information for posterity.

Reengineering of skills of library staff is needed to negotiate the complexities arising out of the symbiosis between information needs and supporting technologies. Staff must learn to play proactive and creative role rather reactive or passive role in the daily discharge of their duties. (12).

3.5 Policy and strategy

Strategies are the specific major courses of actions and patterns of actions for achieving goals and objectives. Strategies can be of many kinds e.g. organisational, personnel, growth, opportunistic, innovational and financial. The effectiveness of an organisation requires the alignment of organisational culture, strategy, environment and technology (13). The effectiveness of the strategies depends on how well they are linked to the goals and objectives of the library and their effectiveness can be gauged by internal consistency, with external environment, appropriateness in view of resources, and workability etc., (14).

Almost all the paper based research libraries have chalked out strategies to get ready for entry into the 21st century, strictly according to the techniques of TQM e.g. staff meetings, specific teams, suggestions, brain storming, brain writing, bench marking etc.

3.6 Processes

Processes are small set of activities by means of which organization turn inputs into outputs. There are innumerable processes in a library. Process improvement is a vital component of the total quality management approach because processes are central to what the organization does, what it delivers to the customers and how change is handled. It is not easy to identify individual processes which together contribute to performance and customer satisfaction. For example in library the external customer is not interested in the process, whereby a book they order is acquired, processed and made available for loan. They are interested only in the eventual availability of the book. Applications of latest technology will eliminate the unnecessary and traditional processes which are not significant.

Processes can be improved by getting answers to the following questions from internal and external customers.

i) What your library is doing that you like most?
ii) What is that one thing which your library could do to improve?
iii) What your library is doing that you really don't care about e.g. number of data entry items and the process of making the data entry either through library catalogue, directly through books or through work sheets (15).

3.7 Resources

In addition to human resources, paper based research libraries have the following other resources for qualitative and sustainable librarianship.

i) Technology
ii) Financial Resources
iii) Building, equipments, suppliers, customers and other stake holders.

APPROPRIATE TECHNOLOGY FOR QUALITATIVE AND SUSTAINABLE LIBRARIANSHIP

The decisions regarding appropriateness of the technology for storing, recording, analysis and dissemination of information should be based on the existing infrastructure, and to a great extent on the usability, cost effectiveness, meaningfulness, user friendliness, eco-friendliness and suitability of the particular technology in the context of a particular library (16).

In print culture, the word paper, which we got from papyrus is light, compact, plentiful, durable, comfortable, suitable, user friendly, cost effective

to punched cards and is an ideal material for recording, large quantities of information Quality and sustainability both depend on customers of service, providers of service and internal and external environment of the service organization. In paper based libraries systematic collection is built to provide services and access to this collection is based on the technology of relative shelf location & card catalogues. These libraries are sighted near its users. The major pre-computer service innovation was self service with open stack and public and union catalogues.

Here two thirds of the operating budgets and two thirds of the space are utilized for acquiring, organizing, and providing access to collection. Physical limitations of manual system, mundane and repetitive nature of library jobs, information explosion, increasing cost and complexity of published material and depleting library budgets, have forced university libraries to use computers for in house operations and networking for resource sharing.

4.1 Technology for Paper-based Research Libraries

Computers	Hardware	Pentium (@ 100 MHz, 16 MB RAM, 2 x 1 GB Hard Disk(s), 1x1.44 MB, 1x1.2 MB, VGA/SVGA Color / Monochrome Monitor, RTC With Battery Backup, MS-Mouse, 101 Keys Keyboard; VT-100 Terminals
	Software	CDS/ISIS based on CCF Tec. Lib plus for the collection up to two & half lakhs. Sanjay for very small collection & Libsys for large collection.
Storage Devices		Magnetic Taps Magnetic Discs / Disk Backs CDs [optical disk] CD ROMS
Communications		LAN WAN MAN
Communication Technologies		Microwave Telephone Satellite
Audio Visual Aids		Tape Recorder T.V. H.D.T.V. (High Definition TV)
Documents Handling Systems		Photocopiers Filing System COM (Computer output on Micro

	Films) Scanners. MICR/OCR/OMR
Power Equipments	UPS (3 KVA Capacity, 1 Hour backup), CVT (3 KVA Capacity) (17).

LIBRARY OFFICE AUTOMATION PACKAGES/SOFTWARE

University Library being the major purchaser of learning resources, equipments, stationary items, physical facilities etc., And being the major employer of personnel next to administrative blocks and also the main information and communication centre of the campus has to do lot of business as well as official correspondence with suppliers, vendors, agents, university administration, faculties, employees, customers and other stake holders. For this purpose a word processor is the 90's equivalent to a typewriter. But features such as cut and paste, grammar and spell checkers, word wrapping, thesaurus, edit, page numbering, indexing, table of contents, windows, MS-WORD, MS-DOS make word processor easier faster, accurate and ideal for long and shorter documents such as business letters, memos, annual reports, staff manual, reminders, complaints, current contents list bulletin, news letters etc.,

i) Word processor (word perfect, MS WORD, WORD STAR, etc., are the standard packages/software;
ii) Spread Sheet (eg., Lotus 1-2-3, Excel, VisiCalc etc., are the standard ones for financial administration; and
iii) D Base IV, ingress, Oracle, Sybase etc., for Data Base Management systems such as personal files, inventory records, store information etc.,

LIBRARY AUTOMATION

Automation of a library has mainly two components i.e. computerization and networking. Computerization will help a library to modernize its in house operations and networking will allow it to access other libraries /information centres to exchange information (19) and also to make university truly universal in character.

The computerization will put information items rapidly in order and to do so in a variety of sequences or by a number of different access points, all arrived from a single record is one of the most alluring attributes to a librarian. The conflict, when some one is attempting to file in a tray from which some one else is trying to discharge, while a third hovers irritably at the side waiting

to search for reserved books is a problem well known to libraries. The computer may be able to cope with all the three activities simultaneosuly from three discrete terminals is a positive benefit. It we are to provide information in a way that suits almost all needs of the present users, we are left with no alternative but to use the modern advanced technology.

Application Software for library computerization.

i) CDS/ISIS based on CCF of UNESCO,
ii) Sanjay Package (if collection is less than 15,000);
iii) Tech-lib plus if collection is less than two and half lacs; and
iv) LibSys if collection is more than 2 1/2 lakh.

PACKAGES FOR LIBRARIES

i) Library house-keeping operation including library loan modules and OPAC.
ii) Information retrieval systems for in-house as well as external databases.
iii) CAS including indexing and abstracting.
iv) Communication/Network e.g. electronic mail, LAN etc.,
v) Business packages like word processing, spread sheets, publishing systems, graphics.
vi) Training modules for library staff and information course

HARDWARE

Main-frames or mini-computer is the best choice but they are costly so micro computers are best (20).

NETWORKING

Networking consists of three components. Namely transmission media, mechanism of control and interface unit to network. LAN connects computers upto 300 meter or within half a mile of each other. WAN may be regional national or global. The library has an onerous responsibility to collect distribute and be depository of local information, talent and research to the word community and connect, retrieve and disseminate the information available all over the world to the local users on demand (21). The number of scientific periodicals are 60,000 adding one thousand titles per year. Indian libraries subscribe to 18000 titles. The consumption of this huge foreign exchange can be streamlined by Networking. WWW is the most popular and highly used service of Internet. Networking helps in maintaining its balance between infor-

mation generation and utilization. IT serves as a productive tool both for professionals and end users.

Communications and networking technologies have enabled the library and information people to meet the challenges of information explosion, shrinking budgets, escalating prices and ever increasing user's expectations.

Library can activate a free flow of information from the point of information generation to the point of utilization of information, efficiently and effectively through resource sharing networking technology. InterNet which is the finest flower of IT has been proved to be a boost in resource sharing.

ELECTRONIC DATABASE

Producing a database means collecting together related items of information in a chosen area, deliver it in a computer readable form and provide access to Researcher/Academic Community. IT facilitated to search remotely located databases. Electronic databases have the key to improve the information accessibility. The wide gap in information accessibility between actual and potential users can be met by electronic databases in India.

Information Technology has made the information global by breaking geographical and other barriers. Library can explore and harness electronic resources such as discussion groups, OPAC, News groups, reference tools, electronic journals and database research alerts, CAS, reference service, Retrospective searches, Bulletin boards, Display new books, new announcements, UGC circulars, Academic Communication, Computer Conferencing etc.,

AUDIO VISUAL AIDS

In India print media still dominates the field as there is a coherent and well developed infrastructures related to the acquisition of print material. The developments in photography, cinematography, sound recordings and the recent development in Video Technology made it possible to have information in a wide range of formats. Funding of the Research further showed that we learn 83 % through eyes, 11 % through ears, 3.5 % through smell, 1.5 % through sense of tough, 1 % through sense of taste, and we remember 10 % of what we read, 20 % of what we hear, 30 % of what we see and 50 % of what we both see and hear. Print based sources can be considered as primary source materials. Audio Visual embraces all technologies whether past, present or yet to be dreamed. Audio Visual includes a multitude of formats from traditional to the most sophisticated forms of Silicon technology, i.e., Audio formats, visual formats, videograms, non-projected aids and multimedia etc (24).

CONCLUSION

The manual, mechanical, electro-mechanical and electronic stages of mankind clearly indicates that information system kept on changing with the technological stage of mankind. Now the world is in electronic stage and information superhighway is the latest global information system. Sooner or later we have to change accordingly. All the fundamental philosophies, laws of library science, library associations, library schools, international quality awards, ISO 9000 series, ISI, mainstream management practices, internal and external environments and even the historical session of the Indian Parliament have quality of performance. Librarians need not be afraid, if they consider Internet and other emerging technologies as opportunities for delivering both external and internal information in a new and more exciting manner to their users. It is a historical occasion to get ourselves ready to avail the vast opportunities which latest IT offers within the existing paper based infrastructure. IT enhances speed, accuracy, timeliness and completeness which are keys to qualitative and sustainable librarianship.

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APPROPRIATE TECHNOLOGY TO SUSTAIN LIBRARIES

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Abstract The catalyst change around the world seems to be faster than light. Here, mentions the development of technological culture in Indian libraries over a period of time owing to technological revolution and shows how traditional libraries have undergone sea of changes; Current trends of technology development and areas of application in library activities & services. The Paper presents optimistic view of library sustainability in the world of technology.

INTRODUCTION

The rising tempo of contemporary change is perhaps the most bewildering challenge to man today especially by technological revolution which had impact on every sphere of activity. This has made tremendous impact on the way information is stored, processed, retrieved, and disseminated and poses challenge for existing Library professionals to catch up with time they lag behind and calls for drastic changes in their approach and work culture in order to provide effective and efficient information services. In view of rapid growth the adoption of technology in libraries, Sustainability of it has been questioned in future. It doesn't matter wheather you are wrong about the future, you neither receive for wisdom nor mockery for idea.

TECHNOLOGY CULTURE IN LIBRARIES

Owing to Electronic revolution mainly Computers, Satellite technol-

ogy and Semi conductor chip, Libraries evolved from mere concept of traditional store house of knowledge {museum} to electronic library. The need has been felt to go for Hi-technological applications in library activities and services mainly because to cope up with information explosion leading to space problem, lack of retrieval efficiency, monitoring and urge for better services.

In India, Computer applications in libraries may be traced to 1960's when INSDOC & DRTC began use of computers. INSDOC produced catalogue of serials using IBM/602 II unit record equipment[2]. In 1970 NAL, Bangalore conducted experiments using ICL 1004 system for automating circulation control. By 1971, Nine libraries using computerized procedures for procurement. Special to promote automation. NISSAT supplied CDS/ISIS package free of charge & trained library personnel in computer handling led switching over to technology adoption in libraries like BARC, CFTRI, CLRI, BHEL etc[3]. INFLIBNET proposes to link libraries & information centres in universities, institute of national network, interconnecting each other to improve information capabilities[4]. On the same lines CALIBNET, DELNET, SIRNET, BONET etc. were evolved.

ASSIMILATION OF TECHNOLOGY

Developments in computers, electronic equipment and telecommunications are bringing information technology a new dimensions to the process of information storage, retrieval and dissemination of information. This development explores the way libraries can use information technology to improve & extend access to knowledge.

James Williams had mentioned following six major technologies in conjunction with libraries. i.e

1. Processors, memory and input-output channel.
2. Micro, mini and large scale computers
3. Mass storage technology
4. Data communication, networking and distributed process
5. Data entry, display and responds technology and
6. Software[5]

Broadly, Technology can be assimilated in following two categories.

I. Inhouse library activities :

The routine activities of library like acquisition, processing, circulation and serial control are automated using Computers. The dedicated library

packages like CDS/ISIS, TULIPS, SLIM, LIBSYS, SANJAY etc. can be used to integrate all the routine activities of library wherein al the manual work involved shall be done through computers. Further, letter formats are available for various correspondence purpose.

II. Information storage & Retrieval :

The mass storage devices includes

1.1 Magnetic storage:

1.1.1 Magnetic. tape/Disk
1.1.2 Floppy disk
1.1.3 Hard disk

1.2 Optical storage devices.

1.2.1 ROM
1.2.2 Read & Write Memory
1.2.3 DVD

1.3 Micrographics.

Microfische/Microfilm has capacity to store huge information in compact form and retrieve it efficiently with greater speed and facilitates exchange of information through network. With the convergence of computer & communication technology, it is possible to provide following efficient Information services i.e

1. Electronic mail
2. Teletext
3. Videotext
4. Access through INTERNET
5. CAS
6. SDI
7. Reprographic services
8. Compilation of bibliographies
9. Compilation of directory
10. Preparation of union catalogue.

Machine readable databases & online access to these had the effect of : improving the availability of information sources drastically reducing geographic distance as a barrier to communication making information sources as readily accessible in a small community as there are in major city & signifi-

cantly reducing the cost of access to these resources are the appropriate technology to be considered in libraries in overcoming problems of information management & retrieval.

VISION OF LIBRARIES IN 2020

Society & Technology have become inseparable. Technology revolution on libraries had entirely transformed into electronic or paperless society. In future, information generated due to R & D are composed, published & disseminated in electronic from. The technology indicates the single, tired, paperless libraries in near future while displacing all the future conventional models of hard copies of books, journals, etc.

The outlook of three components of library shall be

DOCUMENTS

Libraries forceable future will be in electronic world in which documents of various kinds shall be in machine readable from rather than printed form. In words we can say library will be paperless.

USERS

In the future, users with diversified area to include higher proportion but spend little time as possible in the library. Users from remote place can have access to library databases from their office/home. 'The scientist in future will use a terminal in may different ways : to receive text, to compose text, to search for text, to seek answers to factual questions, to build information files & converse with colleaques. It may so happen that, a user while searching for a particular book with various access points can get bibliographic details with contents page of a book.'

LIBRARY PERSONNEL

We are likely to see a reduction in use of professional librarians in traditional acquisition, catalogue and similar roles and an increase in those with technical skills and qualifications in handling of technologies, both at management level and those carrying out day to day operations.

Adoption of Hi-Technology in libraries calls for better equipped personnel, in addition to library science qualification, he should posses better technology knowledge in Information handling.

The library of the future will therefore adopt wide range of role of provision of electronically based information services originating externally to the institution.

QUESTION OF SUSTAINABILITY

Sustainability Libraries may be defined as continuing ability of libraries to sustain in future inspite of technological influence, without degrading its objectives. It is clear that world has witnessed advances in development and application of information technology in libraries, while in India with support of National systems like NISSAT, UGC-INFLIBNET and International systems like UNISIST, INIS, FID, AGRIS etc., majority of libraries are in the process of automation or automated. This has put Library professionals a majour concern as to wheather Library sustains in changing environment. Technological adoption had viewed as either.

1. Threat to library profession. or
2. Opportunity for the profession to make its services more valuable to community of potential users they have ever been before.

In this context, one should understand very clear that, Libraries adopted this change i.e technologies for betterment not as a fashion in order to achieve the latter & not vice-versa.

Libraries will continue in future assimilation technology but their roles will change somewhat & greater value to the profession than they had. They will able to provide access to wide range information sources through network at national, regional, international level & by using database in electronic form.

The major threats one could see for information technology is

1. Virus
2. Lack of secrecy
3. Copyright
4. Power failure

The virus-a dreaded disease once logs can corrupt entire files while power failure can halt the computer operations. To its rescue, majour doctors like UTSCAN, NDD etc are available to take care & UPS for power failure. We cannot discredit the role of technology in information management & meeting national, social, technological & cultural demand from the below. Information explosion had tremendous impact on libraries in identifying, acquiring, organizing and disseminating but also for users who wants to keep up date in

their field. It is estimated that there are about 1,00,000 journals in scientific and technical area and is doubling every year. The only way to keep track is secondary sources. But its growth is also tremendous. For instance growth of Chemical abstracts -

First million - 32 years (1907-1938)

Second million - 18 years

Third million - 4.75 years

Fourth million - 3.3 years

Fifth million - 1 year (.. Expected)

There is sharp increase in cost of publications especially serials but at the same time budget of library is declining rather than increasing, Space problem, scattering of information, time gap between publications means libraries will not be able to acquire large proportions but users would like to see their libraries find themselves in unusual economic picture. To its rescue, Machine readable databases like CD-ROM has capacity to store 2,75000 pages and Online services changed the entire economic access to information sources on demand i.e pay as you use.

Online access to many databases is becoming cheaper day by day than printed access. It costs $ 3500 a year in subscribing alone ignoring storage & handling costs to make Chemical abstracts accessible on library shelves. But online searches of database through BRS (Bibliographic Retrieval Service) for $ 10 or less is likely to be much more effective than searching the printed form. It is reasonable to accept the MEDLARS database of National Library of Medicine as first database in 11964 raised more than 600 databases. MEDLARS provides good illustration of increasing accessibility in information sources through automation -

Year Searches conducted/year

1965 3000

1970 20000

1975 2,40000

This technology has made it possible to have bibliographic control over the literature in compact form, cost-effective & cost-benefit providing maximum retrieval efficiency to save the time of user and creating concept global village to have access around the clock.

The study of regional engineering colleges in India revealed that, 60% of faculties are unaware of modern information technology while 40% of them

use latest system of computer based information services for searching information i.e

Library databases - 97.14%

CD-ROD database - 84.84%

On-line system - 65.32%

Citation Index - 18%

Besides, majority of engineering faculty (82.93%) outrightly suggested that use of information technology will help in communication among engineers, scientists and industries in & around regional engineering colleges in India. [6]

All these achievements of technology over a short period of time clearly shows how intellectually Library adopted Technology indicates the sustainable libraries & technology in future. Thus printed books & Journal will then still exist alongside availability of electronic media that can be acquired online access to such material. Information media wheather available in printed or electronic form, Library will continue to serve as a collection of information sources, though they may be reduced from the burden of supplying students with text-books.

CONCLUSION

It is clear that libraries are evolving rapidly from print medium to paperless society due to the technological revolution mainly computers & communication technology. In view of this sustainability of libraries needs to be given serious thought. No doubt, that Libraries is going to sustain in future along with information technology in years to come by considering its achievements & benefits derived as discussed above. Although, it may be possible that one technology may be dominated by another but technology continue to dominate in forceable libraries. All these largely depends on capacity of a Library to accommodate new technology i.e library staff, operational finance and management accepting change. So, Libraries have to be more imaginative, more willing to experiment, more open-minded, only then they can have a library of future of their own creation.

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CD-ROM TECHNOLOGY AT INDIAN INSTITUTE OF TECHNOLOGY, DELHI

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Abstract The tremendous growth of scientific literature particularly in the field of science and technology has resulted in a host of problems The CD-ROM technology due to its storage capacity, accuracy, reliability, and advantages has been playing a great role in solving the problems in storage and retrieval. IITD Library has started developing CD-ROM Collection after finding this as highly useful service to readers. This paper, deals with the use of CD-ROM technology with particular reference to IITD Library.

INTRODUCTION

The Indian Institution of Technology, Delhi, was established in 1961 as an institution of national importance, empowered to confer academic degrees and distinctions in the field of science, engineering, technology and social sciences. It was established with the following objectives.

i) to offer instruction in applied sciences and engineering at a level comparable to the very best anywhere in the world;
ii) to provide adequate facilities for postgraduate studies and research to meet the needs of specialised research workers and teachers in the country;
iii) to provide leadership in curriculum planning, laboratory development and examination systems;
iv) to develop programmes for faculty development both for its own staff and teachers of other engineering colleges;
v) to develop close collaboration with industry through exchange of personnel and to undertake consultancy projects; and

vi) to develop strong collaborative links with other academic and research institution in the country,

In pursuance of these objectives, the IIT Delhi offers courses leading to B.Tech; M.Tech. and Ph.D. in various branches of the engineering disciplines and lays emphasis on interdisciplinary research programmes. An important feature of the Institute has been its growing relations with the industry. Industrial research and development unit interacts with the industry in promoting industrial growth in newly emerging technologies by offering expertise and facilities.

The Central Library of the Instigate which is actively engaged in the organization, storage, retrieval and dissemination of information, cater to the needs of more than 6,000 users including undergraduates, postgraduates, research scholars, teaching staff, non-teaching staff, alumni and associate members, it play a vital role in helping the Institute to achieve its objectives mentioned earlier. Thus collection development programme including CD-ROM collection of the Central Library is, Therefore, development keeping in view these objective.

The organizational set up of the Central Library is divided in the following divisions:

i) Administration and Maintenance Division;
ii) Reader's Service Division;
iii) Serials Acquisition Division;
iv) Serials Maintenance Division
v) Book Acquisition Division;
vi) Processing Division and
vii) Computer Application Division

The current status of the holdings of the Central Library is given below:

Table 1 Current Status of the IITD Library Collection as on 31.3.97

Sr. No.	Type of Documents	Strength of documents
1.	Books	163921
2.	Standards	26922
3.	Pamphlets	1095
4.	Theses	2420
5.	Technical & Admins Reports	13343
6.	Microfilms	2261
7.	Bound Volumes of Periodicals	75175
	Total	2,85,137

WHAT IS CD-ROM

CD-ROM is a storage device that uses optical laser technology adopted from audio compact disc to store large amount to data for retrieval through a Computer. The storage capacity of CD-ROM is 500-600 Megabytes of data which is equivalent to about 1000 floppy disks or 60 PC hard disks that could hold the same amount of pages. It is also capable of holding 15,000 graphic displays or 3000 television frames. In the context of books and periodicals, CD-ROM can contain the textual information equivalent of 1,000 books. CD-ROM Disk once produced can not be changed or updated. This storage device is accurate and reliable as good as those available with the best computer peripherals.

WHY THE LIBRARIES SHOULD GO FOR CD-ROM TECHNOLOGY

Indian libraries and information centres have been hard hit by the financial crisis. In India, acquisitions have been almost entirely suspended and aging, deteriorating collections offer little benefit to the researchers and students. Increasing cost of books and journals make it unlikely that library will ever be able to make up the gaps in their collections. Harsh environment conditions make traditional storage media expensive for long term purposes and, unless carefully maintained, almost useless. Space is the another problem of the present day libraries. In the field of library and information science, the early applications of CD-ROM were print publications of products already in machine readable formats that can be re-utilised for optical publications. Now, new applications are emerging viz bibliographic databases and full text databases for the libraries. The most common library applications of CD-ROM are for Online Public Access Catalogue (OPAC). Libraries are looking at applications of CD-ROMs for cataloguing, online bibliographic searching, indexing and abstracting services and full text searching. Thus, with its vast storage capacity, ease of mailing and tolerance of harsh environmental conditions, CD-ROM presents an opportunity for information specialist and researchers not only to catch up but, perhaps, to get ahead. In fact, after the installation CD Work Station in the Computer Laboratory of the Central Library of the Institute, the reputation of the IITD Library has been enhanced, number of users increased and the users are finding this service as one of the most useful services rendered by the Library. Some important features of CD-ROM are:

- Can be operated even under difficult conditions such as heat, humidity, dust and unstable power supply;
- Can be portable or battery operated;

- Uses relatively simple 'information technology';
- Has a relatively low capital cost for the equipment;
- Puts the power of searching back into the hands of the users; and
- Offers multi-media and multi-platform facilities etc.

CD-ROM DATABASES ANDTHEIR APPLICATION AT IITD LIBRARY

The Central Library subscribes to a number of databases on CD ROM. These databases are available since early 1993 and are being used extensively by the B.Tech, M.Tech. and Ph.D. students in addition to the faculty members of the Institute. Brief description of the databases available in the library is given below:

i) Derwent Biotechnology Abstracts

Coverage	:	1982 to present
Frequency of Updates	:	Quarterly
Data type	:	Bibliographic
Producer	:	Derwent, Inc.,London, U.K.

Derwent Biotechnology Abstracts provides comprehensive coverage of publications describing research in the field of biotechnology. It cover all aspects of Biotechnology, including genetic and waste disposal as reported in scientific journals and in the patents literature. The database provides detailed coverage of all aspects of biotechnology from agricultural use of pharmaceuticals, including genetics, downstream processing, etc. The data collected in each quarter (40,000 to 48,0 00 documents) is added in the quarterly updates. Each records in the database comprises detailed abstract of up to 200 words together with controlled-language indexing. Literature records include complete bibliographic information abstracted from over 1,200 of the world's leading scientific and technological journals. Patent documents include patent number, patentee, and publication details. Approximately 27% of the records are patent records. The database corresponds to the print publication of the same name. The sophisticated search software (SPIRS) developed by the silver platter is most widely used search and retrieval software that provide easy access to the information stored on the CD.

ii)

Compendex Plus	:	DIALOG Ondisc
Coverage	:	1985 to present
Updates	:	Quarterly
Data Type	:	Bibliographic
Producer	:	Engineering Information Inc., Hoboken, NJ, U.S.A.

The Engineering Information's Compendex Plus database is the machine-readable version of the Engineering Index (monthly/annual), which provides abstracted information from the world's significant literature of engineering and technology. Compendex Plus provides worldwide coverage of approximately 4,500 journals and selected government reports and books. Subjects covered include: civil, energy environmental, geological, biological engineering; electrical, automative, nuclear, aerospace engineering; computers, robotics and industrial robots. The search software provides two level of search approaches that can be used by both novice professional information searchers.

iii) INSPEC

Coverage	:	1990 to present
Updates	:	Quarterly
Data Type	:	Bibliographic
Producer	:	Institution of Electrical Engineers, London, U.K.

INSPEC (The Database for Physics, Electronics and Computing) corresponds to the three abstracting services available in printed versions, i.e. Physics, Computer and Control and Electrical and Electronics Abstracts, The INSPEC family of the databases's source publications are in languages other than English, but all articles are abstracted and indexed in English. The INSPEC scans over 4000 technical journals and 1000 conference proceedings in addition to books, dissertations and reports. The four main subject areas included are physics, electrical engineering, electronics and telecommunications, control technology, computers and computing and information technology. The INSPEC Thesaurus, a single classification scheme is used for all records. INSPEC records also include chemical substance indexing and numerical index terms.

iv) World Research Database

Coverage	:	20,000 Research Establishments
Updates	:	Irregular
Data Type	:	Bibliographical
Producer	:	Longman/Microinfo, Alton UK

The Longman/Microinfo World Research Database on CD ROM comprises of fully computer searchable versions of Longman's Research Centres Database on world class research centres plus the Who's Who in Science Database, an international index of leading scientists and technologists. Its

primary function is an a tool for reference librarians and other information users. It promises universities, companies, or corporate bodies, authoritative data about research programmes from like-minded or competitive organizations. The files offer a valuable background source to science and technology publishers, conference organizers, embassies and trade associations.

v) METADEX/Materials Collection : Metals, Polymers, Ceramics

Coverage	:	1985 to present
Updates	:	Quarterly
Data Type	:	Bibliographic
Producer	:	Materials Information, USA, and the Institute of Materials, UK

The database combines METADEX, Materials Business file, and Engineered Materials Abstracts. It provides the most comprehensive coverage of international literature on the science and practice of metallurgy. Each month about 4,000 new documents related to metals technology are scanned and abstracted for the METADEX database, with intensive coverage given to appropriate journal articles, conference papers, reviews, technical reports and books. The database covers commercial development in iron, steel, and nonferrous metals: world literature on the science of polymers, ceramics and composite materials: business and economic news concerning polymers, ceramics, composites, steel, and nonferrous metals.

vi) MethSci Disc

Coverage	:	1940 to Present
Updates	:	Semi-annual
Data Type	:	Bibliography
Producer	:	American Mathematical Society, USA.

MathSci Disc contains information from two printed publications namely the Mathematical Reviews and the Current Mathematical Publications. The CD-ROM version of MathSci is available with cumulative index to Mathematical Reviews covering retrospective period from 1940 to 1979 and from 1980 to present, providing access to all bibliographic records published in Mathematical Reviews from Volume 1. MathSci Disc provides information on mathematics and its applications in related fields, such as statistics, computer science, and operations research.

vii) INSIDE INFORMATION

Coverage	:	Current Contents of over 10,000 journal title
Updates	:	Monthly
Data Type	:	Bibliographic
Producer	:	British Library Document Supply Centre, Boston SPA, U.K.

INSIDE INFORMATION provides current contents of over 10,000 journal titles on CD-ROM from wide variety of journals in many languages and subjects. The database also includes some conference proceedings and monographic series. Each record in the database contains the first four authors, title, journal and issue details of the article. The page number and availability of document in the British Library, UK (BLDSC Shelfmark) are also included. An estimated one million articles would be added to the databases each year.

viii) ESPACE World

Coverage	:	1990 to present
Frequency of Updates	:	Irregular
Data Type	:	Patents (full-text)
Producer	:	European Patent Office (EPO) & Organization (WIPO)

Contains all international patent applications filed under the PCT from January 1990 onwards. Each CD ROM contains about 500 complete applications in facsimile format including bibliographic data, texts and figure. Searches can be performed on 13 different bibliographic elements including IPC and document title word. Documents can be consulted on screen and print outs can be taken.

As already stated that these databases are extensively used by the students, scholars and faculty members related to different disciplines such as Polymer Science, Bio-medical Engineering, Physics, Electrical, Textile, Chemistry, Chemical Engineering, Applied Engineering, Civil Engineering, Rural Development, Mathematics and many other disciplines related to pure and applied sciences.

FUTURE PLAN

Since CD-ROM services are highly useful for the research and development activities which is one of the prime objective of the Institute, the Cen-

tral Library has got rupee fifty lacs for the development of CD-ROM facilities. Therefore, in addition to the above mentioned databases, the Central Library of the Institute has placed the orders to the respective vendors for the supply of the following new databases to strengthen the CD-ROM collection of the Library.

i) Inside Social Science and Humanities
ii) Exim India
iii) Wilson Business Periodicals Index
iv) Library and Information Science Abstract (LISA)
v) Space Access

In addition, the Library has already initiated the process for purchasing CD-NET system to online the CD-ROM facilities to all the faculty members in their respective rooms, students in their respective hostels and also at some other important places to make the easy access to this network facility through Local Area Network. Since money is not the constraints as far as IIT Delhi Library is concerned, the library will be ordering full text CD-ROM databases in place of hard bound copies. The proposal is already in pipe-line to get the list of priority journals from all the departments and centres to match the same with the journals available in the form of CD-ROM. After completing this exercise, the library will process the order for the purchase of Full-Text CD-ROM databases.

CONCLUSION

The tremendous growth of scientific literature has resulted in a host of problems in the storage and its effective retrieval. The CD-ROM technology due to its storage capacity, accuracy, reliability, and advantages has been playing a great role in solving the problems in storage and retrieval. The Indian Institute of Technology, Delhi being one of the premier Institutions in the field of Science and technology where the information explosion is maximum in the world has started using the CD-ROM facilities in the past five years. The present collection of CD-ROM databases is dominated in the field of Science and Technology but in near future the areas like management, humanities and social science including Library and Information Sciences will be covered by collecting the leading CD-ROM databases in these field also. It is hoped in the near future the Central Library of the Institute will be cited as one of the most healthy libraries in Delhi for its CD-ROM collections and services. As this service is demanded by the research scholars and faculty members of the outside institutions, organisations, a plan is already in pipe line to open this service to them also on payment basis to commercialize this service.

CONDUCTING RESEARCH ON THE INTERNET

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Abstract Highlights access and search for internet databases which can satisfy the need of research and specific study area of the knowledge. We may access 50.000 different databases and other information services under internet. The internet does offer a virtually unlimited amount of information and provides all the tools to access it. We just have to know how to use them.

Internet is in the true spirit of globalisation and it has removed the barriers of time and distance to some extent. Application of superhighway is a vital source for research which is totally different from the traditional search and process.

INTRODUCTION

The Internet provides access to a wealth of information on countless topics contributed by people throughout the world. On the Internet, a user has access to wide variety of services : electronic mail, file transfer, numerous information resources, interest group membership, interactive conversations, multimedia displays, and more. The Internet consists primarily of a variety of access protocols. These include e-mail, FTP, Gopher, HTTP, Telnet, Usenet News, and WAIS. Many of these protocols feature programs that allow users search for and retrieve material made available by the protocol.

OFFLINE RESOURCES

WE should consult some of the many recent books about using the Internet and finding resources online. For a comprehensive overview of The Internet, See The Internet Unlesashed by philip Baczewski et al (ULIB REF / Ready Ref 1995). A subject based directory of Internet sites can be found in The Internet Yellow Pages by Harley Hahn topics contributed by people throughout the world. On the Internet, a user has access to a wide variety of

services: electronic - mail file transfer, numerous information resources, internet group membership, interactive conservations, multimedia displays, and more. The Internet consists primarily of a variety of access protocols. These include e-mail, FTP, Gopher, HTTP, Telnet, Usenet News, and WAIS. Many of these protocols feature programs that allow users to search for an retrieve material made available by the protocol.

Internet sites change over time according to the commitment and inclination of the creator. Some sites demonstrate an expert's knowledge, while others are amateur efforts. Some may be updated daily, while others may be outdated. As with any information resource, it is important to evaluate what we find on the Internet. Also be aware that the addresses of Internet sites often change, or disappear altogether. Do not except stability on the Internet.

ONLINE RESOURCES

The Internet is not like a library in which all its available items are identified and can be retrieved by a single catalogue. In fact, no one knows how many individual files reside on the Internet. The number certainly runs into the millions and is growing at a rapid pace.

The Internet is a self-publishings medium. It is important to remember:

1. Join a listsery or Usenent News group
2. Go directly to a site if you have the address
3. Browse
4. Navigate through a subject directory
5. Do a search using an Internet search engine

2.1 Join a Listsery of Usenet Newsgroup

Join any of the more than 5,000 listsery discussion groups or over 21,000 Usenet newsgroups. These groups cover a wealth of topics. We can ask questions of the experts and read the answers to questions that others ask. Belonging to these groups somewhat like receiving a daily newspapers on topics that interest you. These groups provide a good way keeping up with what is being discussed on the Internet about our subject area. In addition, these groups can help us to find out how to locate information—both offline and online—that we want.

Listervs tend to associated with academic institutions. Many listserv topics are scholarly in nature, and it is not unusual for experts in the field to be among the participants. In contrast, Usenet Newsgroups cover a far wider

variety of topics and participants have a range of expertise. Becareful to evaluate the knowledge and opinions offered in any discussions forum. Note also that certain listservs are cross-posted as Usenet newsgroups. For example, the early music listserv EARLYM-L also exists as the newsgroups rec.music.early.

2.2 Go directly to a site if you have the address

Internet address of the electronic document. Every file on the Internet, no matter what its access protocol, has a unique URL. Web browsers use the URL to retrieve the file from the source computer and the directory in which it resides. This file is then displayed on the user's computer monitor.

This is the format of the URL: protocol : /host/path/filename

for example :

FTP : //bongo.cc.utexas.edu/microlib - a file at an FTP site
gopher ://gopher.pitt.edu/11/nes/irdc - a file at a gopher site

2.3 Browse

Browsing home pages on the Web is a haphazard but interesting way of finding desired material on the Internet. Because the creator of a home page programs each link, we never know where these links might lead. The University Libraries home page contains links leading into the Worked Wide Web, and is a good place to start your exploration.

2.4 Navigate through a subject directory

An increasing number if companies, organizations, libraries, and even volunteers are creating subject directories to catalogue portions of the Internet. These directories are organized by subject and consists of links to Internet resources relation to each subject. The major subject directories available on the Internet tend to have overlapping different databases. Some directories provide a search capability that allows us to do a search of the database on our topic of interest.

Among the more prominent directories are :

* Argues Clearinghouse
* BUBL Links
* Galaxy

* Magellan
* The WWW Virtual Library
* Yahoo

These are links to these and other subject directories on the University Libraries home page.

RECOMMENDATIONS

2.4.1 The Argues Clearinghouse is one of the highest quality subject directories on the Internet. This site consists of collections of recommended sites organized into subject-specific guides. The guide authors are often specialists in the field. This site is that allows us to do a search of the database on our topic of interest.

Megellan is a good choice if we want depth of coverage without having to wade through numerous extraneous sources.

2.4.2 If we want to find a large number and variety of sources, we can use Yahoo. This is the largest subject collection on the Internet. Yahoo indexes thousands of links and organizes them in a hierarchical subject directory. Be aware, however, that Yahoo accepts any site submitted to it without regard for its quality or outority. In addition, Yahoo does not attempt to provide a comprehensive listing on any topic. Its coverage of academic subset areas is generally sporadic. Yahoo has a search engine which allows us to do a basic search of its database. This directory consists or subject collections of subject collections of generally high quality. Many of these collections are maintained at universities throughout the world.

2.4.3 If we want access to a larger and more diverse database, try Megellan. This site offers a database if described, rated and reviewed sites. Only sites that pass through a review process are allowed into the rated portion of the database. The review process does not appear to be highly selective. Megallan has a search engine which allows us to do a basic search of its database protocols. Archie searches for files stored at Ftp sites. Veronica and Jughad search Gpherspace. WAIS is a search program for databases throughout the Internet

Increasingly, internet users are employing search engines located on the World Wide Web. Web search engines have the advantage of offering access to a range of information resources located on the Internet. Many Web search engines work from a database spanning several Internet protocols, including FTP, Gopher, HTTP, Usenet, and Telnet. With most subject areas is generally sporadic. Yahoo has search engine which allows you to do a basic

search of its database. This search engine also runs your terms through prominent Web search engines, each tapping into its own database, and gives us access to the results.

2.5 A Search using an internet search engine

An Internet search engine allows the user to enter keywords relating to a topic and retrieve information about Internet sites containing those keywords. Search engines are available for many of the Internet databases. Crawlers are indiscriminate.

Be aware that some of the resources they collect may be outdated, inaccurate, or incomplete. Others, of course, of course, may come from responsible sources and provide you with valuable information. Be sure to evaluate your search results carefully.

Search engines, we fill out a form with our search terms and then ask that the search prroceed. The engine searches its database of Internet resources and returns a file with links to those reourses containing all or some or our terms. Search engines allow for searching by keywords, and increasingly offer some form of Boolean searching. Web search engines tend to be developed by private companies, though most of them are available free of charge.

Most Web search engines build their databases with programs called crawlers, robots, spiderss, wanderers, or worms. These programs roam Internet and gather resources of all kinds to add to their libraries home page.

RECOMMENDATIONS

2.5.1 Start with Ultraseek. Ultraseek has one of the largest and most current databases on the Internet. It offers several field searching options and simplifies keyword and pharase searching. Its processes search results quickly and accurately. Each hit is accompanied by a short excerpt from the identified site. Our results are presented in order of relevance to our search terms.

2.5.2 Alta Vista is another good choice. Alta Vista works from a fairly large database, handles sophisticated Boolean searches, offers several field searching options, and returns results quickly. Our search results are accompanied by excerpts taken from the identified pages. In the advanced Query Mode, we can choose which sites you want to view first by indicating the term (S) they must contain.

2.5.3 MataCrawler is a good place to go if our topic is obscure or if

we retrieve as much as we can with a single search statement. This service searches multiple search engines simultaneously and offers a number of useful (through not always accurate) search options. MataCrawler returns our results in a single list and removes the and removes the duplicate files.

Other good choices:

* Excite
* HotBot
* Lycos

For more complete information on internet search engines, see:

* Searching the Internet: Recommended Sites and Searches Techniques.
* How to choose a Search Engine of Research Database

PRACTICAL STEPS

World Wide Web Search Engines
How to formulate queries
There area three steps to a computer database search:

3.1.1 Identify concepts

When conducting any search, we need to break down topic into its component concepts. For example, if we want to find information on" Economic Reforms of India current issue" these are the concepts ECONOMY, REFORMS, INDIA.

3.2.2 List keywords for each concept

Once we have identified our concepts, we need to keywords which describe each concept. Some concepts may have only one keyword, while others may have many.

For examples: ECONOMY REFORMS INDIA

DEVELOPMENT GOVT. PLANNING

Depending on the focus of our search, there may be other keywords we would wish to use.

3.2.3 Specify the logical relationships among your keywords

Once we know the keywords we want to search, we need to establish the logical relationships among them. The formal name for this is Boolean logic. Boolean logic allows us to specify the relationships among search terms by using any of three logical operators: AND. OR, NOT.

TIPS ON CONDUCTING SEARCHES

1. Read the directions at each search site. The technique for formulating a search depends on the search engine we are using. There is a wide variety of options available among the different search engines.
2. If you have a multi-term search, use an advanced or Boolean search option if it is available. This will help you specify the logical relationships among your terms.
3. Include synonyms or alternate spellings in your search statements and connect these terms with OR logic.
4. Check our spelling.
5. Take advantage of capitalization if the search engine is case sensitive.
6. If our results area not satisfactory, repeat the search using alternative terms.
7. If we have too many results, or results that are not relevant:

i. Add concept words
ii. Use vocabulary that is specific to our topic
iii. Link appropriate terms with the Boolean AND so that each term is required to appear in the record.
iv. Choosean option requiring exact term matches
v. Narrow your search to individual parts of the Web page such as Title, summary, First Heading, etc.
vi. Use the Boolean NOT to keep out records containing terms we don't want.

8. If you have too few results:

i. Drop off the least important concept (S) to broaden your subject.
ii. Choose an option allowing for loose or concept matches.

9. Try different sources within search engines to diversity your results. Sources can include Usenet newsgroups, Internet FAQs, reviewed pages, and more.
10. Experiment with different search engines. No two search engines work from the same database.
11. You may want to try Web sites which allow you to search multiple search engines simultaneously. Be aware that you will lose access to advanced query options since not all.

HYPERTEXT AND HTML TOOLS AND TECHNIQUES TO DEVELOP WEB PAGES

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Abstract Discusses the hypertext and hyper linking concepts. Gives the different applications of hyper linking and outlines the advantages and disadvantages of hypertext. Discusses HTML and HTML tags in the design of web pages. Gives a sample HTML documents using the different tags along with tips for the creation of web pages using HTML.

INTRODUCTION

At present, a great volume of the work is available in hypertext form. It involves the conversion of existing material into interactive electronic form. It is easier and more appropriate for some applications to do so than for others. As a matter of course, technical publication departments are beginning to take their user manuals and convert them to online - documentation, with varied results.

Hypertext consist of interlinked pieces of text. Each piece of information is known as node. Whether the grain size of these nodes, each of them may have pointer to the other unit and these pointers are called "links". A hypertext link connects two nodes, in the sense, that is points from one "node" (called anchor node) to another (called the destination node). All the traditional text, whether printed form or in computer files, is sequential.

The computer revolution has resulted in an international explosion where manager risks downloading detailed data and scientists are buried under a mountain of technical reports. Hypertext is exciting because it is an interactive form relying on natural intelligence to address these problems.

DEFINITIONS

The simplest way to define hypertext is to contrast it with traditional text like the book. Hypertext is non-sequential. There is no single order that determines the sequence in which the text is to be read. It presents several different options to readers and the individual reader determines which of them is to be followed at the time of reading of text.

Hypertext can be defined simply as the creation and representation of links between discrete pieces of data. Where this data can be graphics, sound, text or numbers, the resulting structure is referred to as hyper media.

Hypertext is a method for storing and retrieving data. Hypertext incorporates the notion of linking pieces of information allowing users to navigate through network of chunks of information.

APPLICATIONS OF HYPERTEXT

To determine whether an application is suited for hypertext, Ben Shneiderman has proposed what he calls the three golden rules of hypertext.

A large body of information is organised into numerous fragments

The fragments relate to each other

The user needs only a small fraction at any time.

2.1.1 Online Documentation

Hypertext is the obvious method for helping users in retrieving the sections of the manual that are relevant to their current needs. Many recent software packages have been delivered with online manuals or online help systems in hypertext form.

2.1.2 User Assistance

It provides a mechanism for integrating several from of user assistance, including the online manual. An introductory tutorial, an online help system, and even the error messages. In an integrated user assistance facility based on hypertext, it would be possible for the user to link from an error message to the location in the help system that gives further assistance on the problem.

2.1.3 Software Engineering

During the software development life cycle, a large number of specifications and implementation documents have been produced and hypertext has shown great potential for providing links among them.

2.1.4. Operating Systems

It would be possible to extend future operating systems with a system based on hypertext service, like the Sun link service now offered by Sun. This extension would allow different application to link transparently to information generally by other applications and stored elsewhere on the computer.

2.1.5. Auditing

The audit task includes gathering and producing large number of documents and linking them together to substantiate the accuracy of the information they contain. Auditing is a natural application of hypertext because it is based on relating information from various sources and checking them for consistency.

2.2 Intellectual Applications

There seems to be a third category of application that is less immediate in nature and more oriented towards the scholarly approach.

2.2.1 Idea organisation and brainstorm support

It is claimed that the hypertext is the most natural way to organise human ideas because its semantic network like structure which matches the human brain. It can help coordinate ideas by its basic capability for having any user add new annotations and links to any node.

2.2.2. Journalism

Along with the possibility of having newspaper and television news in an integrated hyper media system, it is possible to use hypertext in the current journalism.

2.2.3. Research

The hypertext structure developed for research contains all the raw data collected from the field observations of the activities. The advantage of using in hypertext format is that it is quite flexible and can be sent/received to/ from other researchers.

2.3. Educational Applications

Hypertext is well suited for open learning applications where the student is allowed freedom of action and encouraged to take the initiative.

2.3.1. Foreign Languages

Hypertext can provide automatic access to dictionaries through implicit links from any text. A student learning a foreign language will be able to understand the material because of hypertext's ability to link to explanations of any word. It can also enable students to view two parallel versions of the same text: the original one and the translated version.

2.3.2. Museums

It is possible to develop a framework for the communication of museum information and create communication protocols for the interchange of information including text, numerals, image, graphics, and sound while using pre-existing formats wherever standards prevail.

HYPER TEXT MARKUP LANGUAGE

HTML is a Hyper media document description language used to publish documents on the WWW. HTML documents are written in plain text (ASCII) with the file extension (.htm). There are a number of ways to create an HTML document :

Any editor may be used and the HTML commands may be added in. A HTML editor that inserts the commands in the appropriate locations may be used. Further, a conversion utility that takes a document from some other format and converts it to HTML may be used.

3.1. HTML Document Tags : <HTML>, <HEAD>, <BODY>

HTML uses <HTML>, <HEAD>, <BODY> as the document tags. Several tags to documents do not effect the presentation of the documents but convey important information to browsers and users. The document should have corresponding </HTML>, </HEAD>, </BODY> tags respectively at the end. HTML is not case sensitive.

3.2 Markup Tags

Like many word processing systems, HTML allows to define the struc-

ture of a document - as we specify such things as lists, titles, headings, and so on. The markup tags in detail are as below.

3.2.1. Title : <TITLE>

A title succinctly describes the content of the document.

3.2.2. Headings : <HEADING>

These are header tags, for headings. I HTML, there are six different header tags. <H1>, <H2>, <H3>, <H4>, ,H5>, <H6>.

<H1> is the largest and prominent header while <H6> is the smallest one.

3.2.3. Paragraphs : <P>

The <P> specifies a paragraph break. It does not require end tag. If you do not include any <P> in your HTML, text, it will appear as one, long paragraph, </P> is used to end paragraph.

3.2.4. Lists

HTML, provides several ways to display information in lists. These include

Unnumbered lists <UL> [LIST] </UL>

Numbered lists <OL> [LIST] </OI>

Menu lists <MENU> [LIST] </MENU>

Directory lists <DIR> [LIST] </DIR>

Definition lists <DL> [LIST] </DL>

3.2.5. Preformatted Text : <PRE>

When one does not want the Web browser to change the formatting of plain text, preformatted text is used.

3.2.6. Long Quotations : <BLOCK QUOTATIONS>

To mark long quotations in document.

3.2.7. Line Break :

It simply forces a line break in the text. Unlike the <p> tag, an extra line is not inserted.

3.2.8. Address : <ADDRESS>

Used to mark addresses. Typically, it occurs at the end of documents, and is used to enclose the author's name and electronic mail addresses. By default it comes in Italics.

3.2.9. Comments : <!-->

Text appearing within comment tags will be ignored by browsers. It cannot be nested within one another.

ADVANTAGES AND DISADVANTAGES OF HYPERTEXT

4.1 Advantages of Hypertext

Ease of tracing references : machine support for link tracing means that all references are equally easy to follow forward to their referent, or backward to their reference;

Ease of creating new references : users can grow their own networks, or simply annotate someone else's document with a comment (without changing the referenced document);

Information structuring : both hierarchical and non hierarchical organizations can be imposed on unstructured information; even multiple hierarchical can organise the same material;

Global views : browsers provide table-of-contents style view, supporting easier restructuring of large or complex documents; global and local (node or page) views can be mixed effectively;

Customised documents : text segments can be threaded together many ways, allowing the same document to serve multiple functions.

Modularity of information : since the same text segment can be referenced from several places, ideas can be expressed with less overlap and duplication :

Consistency of information : references are embedded in their text, and if the text is moved, even to another document, the link information still provides direct access to the reference.

Task stacking : the user is supported in having several paths of inquiry active and displayed on the screen at the same time, such that any given path can be unwound to the original task;

Collaboration : several authors can collaborate, with the document and comments about the documents being tightly interwoven (the exploration of this feature is just begun).

4.2 Disadvantages of Hypertext

Disorientation : the tendency to lose one's sense of location and direction in a nonlinear document;

Cognitive overhead : the additional effort and concentration necessary to maintain several tasks or trails at one time.

These problems may be at least partially resolvable through improvements in performance and interface design of hypertext systems, and through research on information filtering.

SOME TIPS IN CREATION OF THE HTML DOCUMENT

1. Divide the documents into head and body parts
2. Do not forget closing tags
3. Never use more than one title in a document
4. Never use other tags in a title
5. Keep the titles fairly short - no more than 64 characters
6. Make the titles meaningful.
7. When nesting lists, do not forget to close each list with the appropriate tag
8. Avoid HTML tags in comment fields - it is not a good idea to place portions of your document in a Comment field to try to prevent it from being displayed.
9. Browsers do not always handle tags within comment fields correctly.
10. Look at your document in more than one browser. Different browsers may display the same elements in dissimilar ways.

CONCLUSION

Information is basically multi-dimensional in nature. And it exists in more forms than only text. Hypertext allows the presentation of text in structured way through hyper-linking. HTML has the intrinsic advantage of providing links to images sound and video files through the use of simple tags. With the onset of Internet web pages that include the elements of hypermedia have been designed.

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INFORMATION TECHNOLOGY AND SUSTAINABILITY OF LIBRARIES

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Abstract This paper discusses the sustainability of libraries in view of the application of Information Technology in library and information services. As libraries are changing away from their traditional role as mere custodians of the available printed material and are adopting new methodologies of information storage, retrieval and their integration into existing collections and the services they provide, they are also incorporating the changes that these new technologies are bringing to their organisational structures and the responsibilities of the staff. At present the libraries are undergoing a process of change and are experiencing these technological changes in the provision of services. These changes are attributed to information explosion, increasing cost and technology revolution. Application of information technology in the field of libraries has increased speed of information generation by reducing time of information search and retrieval but on the other hand it also requires intensive, structured, formalized and centralised training of staff for proper sustainability of libraries in view of the technology used.

INTRODUCTION

In the next twenty years the issue of sustainability can be expected to significantly alter the parameters of working. It has become the buzzword of 1990s.

Among the multitude of animals, man is the only one who is not locked into his environment. His reasoning power, thorouthness and imagination make it possible for him to change the environment according to his own needs, In this process of change, by doing researches, he has created numerous things for his comfort and many new technologies. Out of these technologies avail-

able, information technology is unique in this century and has become an indispensable tool for every organization to improve its efficiency.

Information technology in its strict sense of collecting, storing, organizing, processing, analyzing, presenting, communicating and disseminating the data or information for decision making using mechanical or electrical means such as computers and telecommunication. The technologies of optical/video systems like CD-ROMs are included in the computers group by the books and periodicals on computer technology. In the field of libraries, information technology has wider connotation which includes the technologies and systems like microfilms, microfiches, CD-ROMs, computers, information network etc.

Libraries are in the midst of a period of radical change precipitated in large part by rapid and penetrating advances in automation. As libraries are moving beyond their traditional role as custodians of printed materials and integrating new methods of information storage and retrieval and transmission into existing collections and services, they are also incorporating the extensive changes that new technologies bring to organizational structures and staff responsibilities.

NEED OF INFORMATION TECHNOLOGY

The adoption of Information technology in libraries is related to the internal efficiency of the library and thereby fulfilling the objective of saving the time of the reader and staff. Main reasons are-

1.1 Information explosion :

It describes the consequences of an exponential growth in information. Research studies report that the knowledge base doubled between 1980 and 1988 and within fifteen years will be doubling every eleven hours. The amount of materials published is now increasing at 2.5% e each year and libraries are unable to continue to acquire materials as exhaustively as in the past and also the printed media will be unable to keep pace with the information being generated. So, libraries are moving towards new technologies as a mechanism for responding to these concerns.

1.2 Availability of information in machine readable form :

Some records are available only in this from and due to advances in telecommunication, it would be possible to have access to such databases.

1.3 Multi use of machine readable records :

By many users for any number of times for various purposes like selecting and searching for acquisition, creating or updating accession list, cataloguing, creating a database for circulation control etc.

TECHNOLOGICAL CHANGE IN LIBRARIES

New technological developments have profoundly affected libraries. Because of the vast growth of literature, Governments all over the world started encouraging various organizations to develop easy methods for information storage, retrieval, communication and dissemination. As a result, in 1961 Library of Congress established MARC-I project to explore the possibility of communicating bibliographic records in machine readable form. The success of MARC-II in 1965 led to the application of computers in information processing and transfer. International organizations like UNESCO, FID and IFLA are working for further development in information storage and retrieval. Application of computers in the field of information has not only increased speed of information generation by reducing time of information search and retrieval but it has also helped in creating new forms of documents like magnetic tape, discs etc. which can store voluminous information in just square mm. area.

2.1 Computers :

Computer technology consists of hardware - the machine and the software consists of certain commands to run a computer. Coming to the library software packages, the earlier worth mentioning packages are CAN/SDI developed by SDRC, Canada, TEXT PAC developed by IBM, CDS/ISIS developed by UNESCO and supplied free to member countries. LIBSYS Corp., New Delhi has developed LIBSYS. The revolutionary developments in hardware and software has resulted in various new methods of printing, new forms of documents, creation of databases and networks.

2.2 Electronic Publishing :

Now information is most widely available on discs and tapes. Following are some forms of the discs now available in the market-

i) CD-ROM (Compact disc read only memory)- This is a digital optical disc like a music disc which can be produced in large quantities. These are becoming the most important form of optical storage device for database distribution. Winchester and WORM (write once and read

multiple) are some of the forms of CD-ROM which have following advantages over CD-ROMs.

a) They can store as much as 6-4 gigabytes on a single double sided disc and produce full text products regardless of critical quantities of copies.

b) Complete individual full text compilations depending upon the special needs of each library.

ii) DRAW (Direct read after write)- It is a digital optical disc having the size of 12 inches. This is a laser written and laser read disc. Which can contain three copies of the text of Encyclopaedia Britannica.

iii) Laser Video Disc - This is a television technology and presents its material on a colour television monitor. A 12 inch video disc can contain 30 minutes of motion picture material within two independent sound tracks or 5400 separate colour still frame image with no sound.

2.3 Databases

These are the result of electronic publishing. Database is a collection of interrelated data stored together with controlled redundancy to serve one or more applications. The data are stored so that they are independent of programs which use the date. The intention of database is to allow the same collection of data to serve as many applications as useful. Major publishers like Pergamon, McGraw, Springer, Bowker, H.W.Wilson have started publishing full text databases. On-line use of text is more useful then a single subscription and more than one person could access the same article simultaneously without any use of library staff time. The number of on-line databases in growing approx. by over 300/ year. DIALOG, ORBIT, BRS are the famous on-line vendors.

2.4 Telecommunications and Networks of Information :

The latest developments in thee context of information communication which have helped to create information networks to share the resources in context of economic crunch are-

i) Setellites - Use of manmade satellites traveling in the earth orbits to provide communication links between various points on earth is main's most important exloitation of space technology. These communication satellites permit an interchange of live programs and events between nations and continents.

ii) FAX - Tele facsimile system is electronic communication system which

permits the transmission of images (photographs, printed paper, maps, drawings) and their reproduction on paper at remote receiver.

iii) Networks - The conglomeration of computers, databases and telecommunications has led to the creation of networks. No library is self-sufficient. With the information revolution, it is no more possible for the libraries to purchase all the available material and moreover, most library activities are done in a similar rather than a unique manner. So, libraries of one region/nation are coming together to share their resources and services by using telecommunications facilities. They are further linked with International Information System. Some of the successful networks in the world are OCLC, MEDLARS, RLIN, INIS and AGRIS. UGC is contemplating INFLIBNET for college and university libraries in India.

IMPACT OF INFORMATION TECHNOLOGY

Impact of Technical Services with the advent of new technologies, the manner in which Technical Staff was carrying out its work has been changing. The two technological developments which have their widest impact on technical services in the library are growth the development of bibliographic utilities and the development of integrated automated local systems. Automation in the form of bibliographic utilities and MARC format has revolutionized the practice of cataloguing. Computers have proven useful in handling clerical processes as file management and supporting a variety of products from machine readable cataloguing record, from cards to on-line public access catalogues. The ease with which cataloguing records can be shared among many libraries is one of the greatest benefits of library automation. The library of Congress is the largest contributor of shared cataloguing, through the distribution of MARC tapes. OPACs can also reduce the cost of maintaining a catalogue. Many paper - file cab be eliminated and decentralization is possible because staff can access the on-line files wherever a terminals is located. It has eliminated the need to maintain many of the essential card catalogue, authority files and other paper files.

Prior to automation, Acquisitions Staff spent many hours manually searching the local card catalogue and other bibliographic tools to verify book orders. They manually typed and mailed orders, claims and cancellation forms and also maintained a number of paper files, on order/inprocess records, invoices, standing orders, correspondence and other records. Automation has simplified these procedures. Library holding are searched on on-line catalogue or network file and title not held by the library are verified on a bibliographic utility. Orders can also be sent electronically to vendors. Claiming of non-receipted orders which was tedious and time consuming is done in matter of seconds with the help of computers.

In the similar manner, Serials invoice processing, check in and claiming were time-consuming, complicated and tedious but automated serials control has benfited both serials personnel and library user. Through the use of public terminals, users can determine exactly the serial holdings of the library.

3.2 Impact of Collection Development Librarians use a variety of bibliographic tools for selecting materials. Automation has made many of these tools available in machine - readable format. Quantitative data can be gathered through automated circulation and acquisition systems. Circulation statistical can be analyzed to determine which books circulate and how frequently and which subject circulate heavily. A number of machine readable bibliographic tools are becoming available to libraries for use in selection of recently published and retrospective titles. This can eliminate duplication of efforts as in manual systems.

3.3 Impact on Public Services OPACs provide speedy on-line access to all the library's holdings by means of computer terminal and are affecting library operations. It makes the information directly available to users and also permits many access points.

Commercial on line bibliographic databases precede OPAC in bringing new technology directly to library users. Telecommunications networks have reduced the cost of connect time and accelerated the spread of on-line searching of remote databases.

Library automation has provided significant improvements in interlibrary loan operations. The bibliographic utilities permit users across the region or nation to know which member library owns which specific titles. Inter library loan requests can be transmitted and redirected through communication systems.

Computers can also replace many of the paper files maintained in Circulation Operations. They can perform a variety of functions from the generation of recall and overdue notices to reporting availability of items in the on-line catalogue. These functions save staff time, enhance efficiency and improve patron service.

3.4 Impact on Organizational Structures The organizational structures of libraries is changing. Libraries have often been characterized by hierarchy, tradition and clearly demarcated responsibilities and stratified staffing but scenario is changing as the consequence of new technology. We cannot firmly predict about the structure of libraries in future because the changes are now in process but a change of reorganizing of libraries cab be seen as the workload has been reduced. The centralized system is fading with the implementation of new technologies for document storage & retrieval and growth of various online systems. Several writers like Atkinson, Martell and Stueart write of trans-

forming services into "specialized user-oriented information centres".

The need for Continuing Education is also noted. The staff should be provided intensive, structured, formalized and centralized training. Automatin traning provides an opportunity fo continuing education and staff development.

CONSTRAINTS IN IMPLEMENTATION OF INFORMATION TECHNOLOGY

No doubt, automation of library services and concept of electronic libraries is the only answer to overcome the problem of information explosion, space problem and for providing effective library service most economically, accurately, promptly and exhaustively but some problems have to be faced and overcome. Most significant of these is psychological problem. Library staff oppose it being tradition ridden. They are also afraid of loosing their importance and are suspicious about management's motives in making the changes. They do not take any initiative and oppose in various ways by not co-operating or exaggerating objectives etc.

WAYS OF OVERCOMING DIFFICULTIES

Library staff can be mentally prepared to switch over from manual library operation to automation by keeping them informed well in advance indicating full reasons and benefits. They should be assured of due importance and given appropriate opportunity to participate by seeking their suggestions. Moreover the traditional library staff members should be given reasonable time to get mentally prepared or accustomed and trained for change before implementing the plans for automation of library services.

IMPLICATIONS FOR THE FUTURE

Librarians are seeking to merge new technologies into the existing organization which maintaining many of the traditional features. The challenge which is facing libraries is to continue to implement the new innovations and to apply them to the existing operations. There is a need to continuously device methods of planning for responding to rapidly changing technologies and sustain it as automation requires new procedures, new staffing patterns, new budget, shifts in authority and decision making and new changing services. Librarians need to formulate formal planning and implement management controls and ensure availability of staff trained to work with new technologies.

CONCLUSION

Today's libraries must be a gateway to the broadest world of scholarly information. It must be a channel to machine readable database and facilitator for access to private and public source of information. The use of computers in libraries has already begun to reach beyond the mere application of standard software to standard library processes and to more creative and innovative purposes. Libraries are changing and these changes are escalating and with these remarkable pieces of equipment on hand, library will gradually be able to turn their public services to Information services of 21st century.

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MULTI MEDIA AND ITS APPLICATIONS

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INTRODUCTION

The term multimedia is relatively a new technology concept both in art and technology. It is true we can say multimedia is fruit of this decade. Early to this decade most of us are layman to multimedia. The term Multimedia has been used within the computer industry since mid 1980's. In present days multimedia is just like a red rose that dissolves into a little girl's face when you press "Valentiene's day".

DEFINITIONS

Generaly multimedia is the fusion of computer with audio-video technology. In other words computer software which includes the following :

Text : May be table of contents to entire novels.

Data May be statistics table charts, graphs.

Spread sheets : Ledgers and others.

Audio : May be human voice, music sound effects etc.,

Graphics : May be drawings, paintings, prints, maps, blue prints etc.,

Still pictures : Slides, Transparencies, negatives and others.

Animation : Covers a vast range of creative technology and Media from Three-dimensional figures to computer-generated figures.

Moving pictures : Moving photographic images.

"We define multimedia as any thing that requires more than two trips to the car"

— Robert May, President of IKNOIC

"Talking about multimedia is a lot like talking about love. Everybody agrees that it's a good thing everybody wants it. Wants participate init, but everybody has a different idea of what it really is. Right now, the industry reminds me of a bunch of tea bags dubbling in something that instinctively feels right all the while wondering how and when they will now for sure if they are really in it and what to do about it if they are.

HARDWARE AND STANDARDS

There is a wide range of technologies from different manufacturers. Actually thewordmultimedia hardware has no meaning.

2.1 CD-ROM

8X speed, 16X with remote with installation diskettes.

"CD-ROM hold six hundred digitised colour photographs, which it-self inadequate for storing moving images. [It will hold a mere fourty eight seconds of video]. Actually it has a capacity to hold two lakhs fifty thousands pages of machine-readable text."[1]

2.2 CD-Interactive Titles

Compact disc-interactive scheduled in 1992. It is delayed because of failure to implement full-screen full-motion. Software may be games to self instruction programmes.

2.3 CD-Writer

Through this we can write the information from one CD's to another i.e., duplication of CD's.

2.4 CD-Extended Architecture

It is a bridge media for CD-I and CD-ROM.

2.5 Commodore Dynamic Total Vision

It is strong competitor of CD-I. It came into existence to the market is in April 1991. Here audio CD drive is attached to the television set.

2.6 Digital Video Interactive

Digital video interactive technology will run initially under DOS, OS/2 and Unixand WIN95 according to microsoft. It has networking capabilities.

CONFIGARATION

A full multimedia pc level 2 system requires the following elements and components, all of which must meet the full functional specifications.

CPU : 100 MHZ, Pentium 133 MHZ

RAM : 8MB of RAM [16 MB recommended]

Magnetic Storage : Floppy drive, hard drive [540 MB minimum] 8MB RAM

Optical Storage : CD-ROM double speed with CD-DA out puts, XA ready, multisections capable.

Audio : 16 bit ADC music synthesizer on board analog audio mixing.

Video : Display resolution of at least 640*480 with 65,536 [64K] colours.

Input : 101/104 key boards [or functional equivalent] to button mouse.

I/O : Serial port, parallel port, MIDI I/O port, Joystic port

System software : Binary compatibility with windows 3.0 plus multimedia extension or windows 3.1 [2]

APPLICATIONS

Multimedia's services are utilized in multi fields. It is suitable for when ever and wherever people need access to electronic information of any type. Most commonly multimedia is used

- in Business
- in School/College
- at Homes
- in Public places
- in Library
- for Entertainment
- in Sports

4.1 Multimedia in Business

The application which include in business are marketing, advertising, presentations, training, product demonstrations, databases catalogue, network communications, voice mail, conference (conference is provided through local area network and wide area network).

Multimedia in training has become common. The manager can describe the process of making their product, used in making the badging and identity card databases. A new generation of interactive television and networked multimedia online business to business services is evolving. These services delivered through interactive television and networked multimedia. These cases are much easier to construct, have short payback periods and require less investment than residential services proposal.

4.2 Multimedia at Homes

Television/VCR are platform for multimedia project at home, because currently television enjoys much higher penetration than home computers. The multimedia viewed on these sets will likely arrive on a pay-and - use basis. However computer with an attached CD-ROM drive become platform for multimedia projects.

Home computers is rapidly emerging as multimedia platform because of

— Present users/people are becoming familiar with computer.

— Marketing of home computers reach saturation point

— Game software developers are not the least.

— The incremental cost of adding CD-ROM drive and sound board to a home computer is now almost marginal.

4.3 Multimedia in Schools/Colleges

Multimedia made the great change in the traditional teaching methods. In coming days the teachers are become just guide or supervisors. In laboratory the students can do experiments themselves through multimedia. The teacher become supervisor to explain the process.

4.4 Multimedia in Public places

Multimedia provide information and help to the people/tourist in hotels, railway station, bus station, shopping complex, museums etc.. This installation may replace traditional information booths and personnel. The user/people can work around the clock whenever he want information/help.

4.5 Multimedia in Sports

Multimedia plays a dominant role in training the sportsman. Through this we can train the sports man from traditional methods. The wrestler can learn how to use the techniques in the matches. He can see the great matches through which he can understand what precautions are to be taken. The training may be given through slides or transparency.

4.6 Multi media for entertainment

We can use multimedia as the radio/taperecorder to listen the news, songs, it can be used as a newspaper to know the current awareness [through internet] it can be used as a television for entertainment. Through this we can see the game and we can also play the game. Carton films can also be viewed.

4.7 Multimedia in Library

Present multimedia applications can be categorised into computer aided learning and computer based training. Through computer-aided learning the user may know when the doors of informations are opened. What are the information sources available, what are the information services provide to the user. How to use the catalogue in searching the information, which system is used classify the documents in library and which are the rules and regulations to be followed. And other things can be known through computer aided learning. Without going to the library we can see how the library is i.e. its building, sources, services through multimedia.

CONCLUSION

Multimedia is revolutionary and will change our lives i.e. style. It is just like as two cat's eyes appears on a dark screen. It excites eyes, ears, finger tips and most importantly the need. A revolution is taking place today in the way human access, learn and interact with information. Simple multimedia applications will soon become standard items of stock in libraries. More complex systems will require managerial and technical.

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NEW TECHNOLOGY AND CULTURE

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INTRODUCTION

Viewed historically the library's role of making materials available ranks among the most important contributions ever made to human culture and technology. Libraries have long stored materials that enable ideas, knowledge, and experiences to be passed on from generation to generation. Without this line of communication, cultural and technological development would not be as advanced as they are.

We live in an era of rapid development of information technologies and their widespread application in all fields of human life and work. The field of culture cannot escape this development. More and more cultural and other organisations, process and organise their valuable data by means of computers, thus increasing the efficiency of search and analysis.

Co-operation, exchange and communication are becoming increasingly intensive, and there is need for a quick, easy, and simple way of reaching out. Another problem has emerged recently the lack of links between various information sources. The information that is needed can be obtained quickly and efficiently when one knows where to fined it; otherwise the efficiency of search would be affected. In order to get high quality information, one must first collect data on who collects similar information, and then they can search the appropriate sources. Our wish should be to assist a wide range of cultural institutions around the world with their search by providing and facilitating access to available information on research activities, documentation/information and education in the field of cultural development.

Culture : The word culture has been used in different ways and many definitions abound in the literature on the meaning of culture.

One definition is that culture is "behaviour peculiar to Homo Sapiens, together with the material objects used as an integral part of this behaviour"; specifically culture consist of language, ideas, beliefs, customs, codes, institutions, tools techniques, works of art, rituals, ceremonies and so forth.

Thus the culture is the totality of the technological, Sociological and ideological feature of a given society. A cultural system of some sought is found in all human societies. In every human society there are networks of values and attitudes, customs and behavioural patterns that define the way of life and world in which men and women act, decide and solve problems, secure food, clothing shelter and what ever goods and services they require. Every human society prossesses its own distinct culture, so that the members of one society behave differently in some significant respects from members of every other society. Further more, human societies are also distributed over very varied regions differing markedly in climate and environment. There are also large ethnic, social and cultural differences between the various human communities and their economic conditions.

Technology : Technology refers to all the ways people use their inventions and discouries to satisfy their needs and desire. Even since people appeared on the earth, they have had to work to obtain food, clothing, and shalter. They have also had to work to satisfy their desires for leisure and comfort. Through the ages, people invented tools, machines, materials, and techniques to make work easier. Technology increased the rate at which they could work.

Now peoples are always living in a technological age because they have always had to work to obtain most of life's necessities and many of its pleasures. Technology includes the use of both primitive and highly advanced tools and methods of work. Modern Communication and data proassing also rely on technology, especially electronics.

INFORMATION TECHNOLOGY

Automation is the use of machines to perform tasks that involve decisions that are too complex for people to make in a limited amount of time. Automation is also used for jobs that are so routine, boring, or degrading that people are not able to perform them effectively over long periods of time. Automated devices have been used for hundreds of years. Since the late 1970's however, the availability of inexpensive computers to run machines has greatly stimulated the development of automated systems.

UNESCO has defined Information Technology as "the scientific, technological and engineering disciplines and the management techniques used in information handling and processing, their applications, computer and their interaction with men and machines, and associated social, economic and cultural matters".

From the above definition, we can understand that the convergence of

three stands of technologies such as computers, micro-electronics and communication constitute the IT, for the purpose of acquisition, processing, storage and dissemination of vocal, pictorial, textual, and numerical information. Recent revolution of IT is creating not only wonders but also posing fear. Nowadays, no information scientist can not avoid themself from information technologies. This is because of change, development and trends taking place in the information world, particularly during the present decade.

NETWORKING

Computer networks are the media for transfering information across the planet we are taking now not just about the Internet, the global umbrella for all the networks, but also about local networks, even when they are as small as those within one firm or institution. A computer network has the ability to serve as superfast mail service for people from very distant areas, helping them to communicate by written messages. It also allows people to communicate in a synchronous mode, exchanging written messages in real time and in its most 'user friendly' approach, it enables communication by pictures and illustrations. Further still-developments in this sphere of technology will lead to a unifying Interactive system capable of managing all three ways of communication at the same time - the written word, the picture and the sound.

INTERNET

Internet is a global network of computer networks, is expanding rapidly as individual computer users and institutions recognize its value for communication, research and marketing. Internet is a network of more than 13,000 computer networks linking approximately 3.2 million computer and over 30 million users in 150 countries. They are located at universities, scientific research establishments, institutions and commercial organizations. The use of network is growing at the rate of about 10% per month. The ability of computer networks to overcome barriers of time and space will increasingly threaten the position of intermediaries in a wide range of cultural activities.

The arrival of internet, the most famous computer network, has opened up unimaginable opportunities for searching and offering information that is more than ever becoming the precodition for successful actions. Not only is internet a network in a technical sense it is whole new parallel universe that enable one to travel, explore, interact or search without having to leave the room or to wait for replies. One can be anywhere is no time, or even better in several places at the same time.

Internet provides opportunities for any type of interaction. Its combination with contemporary technology has transformed digital information, which used to be mostly textual in nature, into multimedia information, thus letting us have knowledge about things instead just information about them. Electronic publications have become complements to others hard-print copies. They are inexpensive, easily accessible and ecologically oriented, as they do not require paper to communicate information. The internet growth is tremendous. It is getting bigger as a community and more and more sophisticated in the services that it provides.

The key to many of the new possibilities is information carried in digital form, so that it can be stored and manipulated by computers, using fibre optic cabling providing adequate conduits for the volume of information carried, a new generation of powerful Asynchronous Transfer Mode (ATM), which promises to revolutionize the way computer networks are builts. It provides for high-speed transmission and is suitable for many kinds of graphics, voice, data, facsimile, real - time video, CD-Quality audio and imaging.

MULTIMEDIA

Multimedia is a technology that attempts a harmonious real-time integration of different media like images, full motion, video, voice, text, graphics and other computer data for enhanced-man machine interaction encompassing the audio-visual senses.

In other words Multimedia is the convergence of computer and communication technology and is a system which intergrates text, voice and voice processing, film pictures etc. As the name implies multimedia lets out to use several type of media like sound, graphics, animation, text etc.

Now multimedia has become the latest cultural phenomena as the computing & communication technologies are the forefront of the multimedia revolution. The thrust for multimedia was mainly due to the need to have a single source for basic information on digital media. Multimedia is a systematic network of communication, electronics and computer technology.

RELATION BETWEEN CULTURE AND TECHNOLOGY

The culture of a society determines the nature (form and content) of technological development and the evolving technological culture. Technology is thus a cultural enterprise which exists in varying degrees in all societies. In some societies a highly specialized sub-culture, that of the scientist has grown up, although in the eye of the layman, there is no distinction between science

and technology. Technology has played an ever-increasing role in people's lives. Technology certainly produces a well-defined world view and well defined attitudes which is manifest in each society. As claxton describes it :

"There is a natural inter-dependence between technology and culture which requires that the relationship be an essentially authentic one. Since it exits to satisfy man's immediate and particular need as well as to enable him to live in harmony with his very own environment. Indeed tools are the interface between man and nature. The development of new technologies is linked to a society's evolving needs, to the relative importance accorded to satisfying them, and to the application of new and different solutions to existing practical problems based on the society's creative capacity and its particular knowledge and experiences. The introduction of a new technology often creates new social situation, which in turn, creates new need and values, thus stimulating further technological development."

It is thus accepted that technology has had an important influence on western civilization for the last 300 years. But partly because of the diverse cultures found in human societies, the contribution of some cultures to the pool of technological advances has been comparatively modest. However technology has, always been too important to be measured purely in terms of the activities of technologists. Just as history is not made by historians, but by society, so technology is not developed only by technologists but by the wider community.

INDIAN CULTURE AND NEW TECHNOLOGY

Preservation of India's rich cultural heritage has not received adequate attention. Many of the best works of art, music and film which form a part of our cultural heritage deteriorate with passage of time. Millions of original Indian manuscripts, paintings and visual art objects are not easily accessible to the users/scholars who want to analyse, and explore the past. A 5000 years history of this philosophical art tradition is scattered, fragmented or inaccessible.

Today, powerful and inexpensive desktop computers have made it easier to use the digital techniques for storage of information. The digital methods offer high fidelity and long term stability in storage with loss of data and addition of noise. Analog video is very expensive in transmission and storage. New techniques in digital compression of Audio-video coupled with much lower media cost have expanded the scope of storage of information in digital form. Digital Information can be edited, sorted and searched easily.

Recognising the need, a pioneering attempt has been made by Indira

Gandhi National Centre for the Arts (IGNCA) to bring under one roof, primary and secondary source material of Indian tradition in the broad area of Humanities and the Arts. Since multimedia is a powerful tool available for digital storage of material, it is considered the fit medium to reflect this holistic approach. This technology combines audio, video, text and graphics/animation on one platform and has the potential to allow users to see or hear the past. This project employ an integrated methodology to develop applications to access diverse media on architecture, sculpture, iconography, epigraphical records, textual sources, music and dance traditions (classical and folk), Paintings, illustrations, murals, festivals, rituals, oral (living) traditions etc. to exeat state of the art highly interactive systems.

e.g. The Gita Govind, Jayadeva's 12th century poem has had a great cultural influence in India, in many art forms and at every level of society. The poem communicates a cosmic drama which operates on multiple planes : through the sensual love play of Krishna and Radha, the poet evokes the spirtual. The choice of this theme for a multimedia presentation will allow audiences to understand the links between Indian Music, paintings, dance and its textual traditions through development of conections between media which could not previously be represented simulataneously. It is a traditional multimedia document ripe to be integrated with modern multimedia technology. The project will develop new interaction paradigms for multimedia browsing, Indexing and retrieval based on pioneering research conducted by PARC, Palo Alto, California.

CONCLUSION

A technology is deemed to be appropriate when it is compatible with local, cultural and economic conditions (i.e. the human, material and cultural resources of the economy), and utilized locally available materials and energy resources, with tools and processes maintained and operationally controled by the local population. Thus a new technology is considered `appropriate' to the extent that it is consistent with the cultural, social, economic and political institutions of the society in which it is used.

We foresee that the future generations will use more information through computers and if our heritalge is not available in digital form, we may lost out to the cultural invasion from the west. It becomes our duty to preserve our cultural heritage and make it accessible to the world through new technologies.

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A STUDY OF SPECIFIC READING HABITS OF SCHOOL STUDENTS IN RELATION TO SOCIAL STATUS : A DEVELOPMENTAL CASE STUDY OF LOYOLA HIGH SCHOOL, PUNE

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Abstract Socio economic status, home reading habits and hobbies were indentified as factors deciding reading habits in the library. A group of 50 students each from the 3 broad age group patterns were selected at random and data available in the library on their choice of reading material were analused against their social conditions to find a pattern which determines thair reading habits.

This data was genreated using both the questionnaire and interview techinique. This paper investigates possible reasons governing reading habits and the achievement factor as a whole. Student search patterns and variety of material refered to solve querries, frequency of library visits and the method of solving the problems is investigated at length. It is arqued that students extra curricular reading is arbitrary but encouraging and developing reading will promote sustainable development of the school library.

INTRODUCTION

The school library looked upon a place for extra curricular reading with an idea of improving this skill which can be used for educatinal development. However, a new practice of encouraging parents to help and guide children's reading is gaining a new dimension (Elliott and Hewison, 1994) also initial stimulus for this kind of work was provided by surveys in 1960's and 1970's which social class (Davie, Butler & Goldstein, 1972). A major factor was whether parents listened to childrens reading in the working class parent group. (Hewison and Tizard, 1980). In a survery of 5000 children, studies by Rowe (1991) showed 'Reading Activity at Home' to be positively related to

reading achivement, attitudes towards reading and attentiveness in the class-room.

The main aim of this study is exploring the differences in reading style, selection of reading material, reference search, in relation to parental attitudes and social conditions of the home, to compare educational activities at the home front and support system the school library can generate; possible evolving tutoring styles for families from the different sociocultural groups of society; gather information on parental help in reading with the idea of providing home reading, library lending projects for enhancing educational performance and goal attainment.

METHOD

The three main groups were chosen on the basis of differences in social class, language spoken at home, broadly classified as ethnicity. Hobbies were broadly listed as indoor and outdoor type.

Structured home reading was classified by investigating parental attitudes in family activities such as paired reading, explanations of localised-child difficulties and purchase of extra curricular books. Childrens exposure to audio-visual forms of education at the home from have not been considered in this study.

All these parameters are used as a basis to gain on insight into reading habits and information seeking, habits, ingeneral, in the school library. Percentage of visits and avg. amount of time spent in the school library is also considered as a factor.

ELICITING INFORMATION CONCERNING EDUCATIONAL ACTIVITIES IN THE HOME

Parents were asked regarding home environment, home reading habits, purchase of story books, reference books available at home; Frequency of time parent spent reading explaining reading difficulties to the child per week.

Childrens exposure to media like newspaper, television and the hours spent by the child with these mass/multi media.

READING SESSIONS DURING LIBRARY PERIOD

The children were given story books of the same level as their graded readers. This was because in most cases the child could tackle the material properly. When the child showed signs of struggling or text was too easy, the

book was changed to the appropriate level. The book was issued to the child with specific instructions to seek home help inreading. The material was such that it would be of interest to the child, level hith enouth to provide sufficient material for analysis and not cause distress in reading.

VARIABLES CONSIDERED FOR ANALYSIS

a) Parent centered - at home

	Category		**Therapy**
	Maintaining flow/rate/speed of reading		
i)	RELATE	-	Parent helps on miscue by giving words.
ii)	PAIRED	-	reads alongwith with breaks.
iii)	JOIN	-	to stumulate interest, maintain continuity.

b) Child centered - in the School Library

i)	LOCAL	-	childs attention drawn to miscue.
ii)	SEARCh/ RETRACE	-	remember any words previously read : context wise.
iii)	SEMANTIC	-	child encouraged to deduce meaning : infer : reason.
iv)	VISUAL	-	picture pointed out as prompt for appropriate word.

In the beginning coding scores were kept but as the class interval was very large there was no reproductibility of results. Hence coding response scores were discarded in favour of general board result analysis.

c) Procedure of Library Reading session :

i)	INVITATION TO READ	-	primary choice, child centered grading of difficulty by librarian.

ii)	METHOD	-	asking child to read loudly, clearly, with intonation, explanation.
iii)	POSITIVE FEEDBACK	-	praise attempts to self corect, reinforcement.
iv)	INTREST ENQUIRY	:	whether child liked the story, specific event, co-relation to any other incident.
v)	REFERENCE	-	have you read similar story at home, do parents read to you (only primary section).

d) Activities carried out by the Librarian

i)	RHYMES, PICTURES STORIES	:	reading a nursery rhyme not in syllabus.
		-	naming items from pictures.
	(for primary)	-	discussing the picture book.
		-	reading stories from book.
		-	moral of the story.
		-	ask student response.
		-	ask student response.
ii)	WORD INTRODUCTION	-	reading labels from chart/picture.
		-	individual words on cards.
		-	look up meaning.
		-	repeat similar words.
iii)	HOME READING ENVIRONMENT	-	nature of books at home
		-	frequency of seeing pictures, reading printed material.
iv)	HELP IN READING	-	helping pronounciation of difficult words.
		-	asking child to repeat
		-	reading with the child.
v)	WORD EXERCISE	-	making words with blocks, letter shapes, cutouts.

		- read sentence where specific new word occurs. - formulate a story of few sentences from pictures.
vi)	LANGUAGE EXERCISE	- writing a paragraph by gathering information. - method of initiaating search. - quating sources after search, using reference books.
vii)	ENHANCING LANGUAGE	- a film shown on video - discussion about the events in the film. - comparison with other films, story and film versions comparisons.
viii)	STORY : BOOK & THEATRE VIDEO* PRESENTATION	- story read loudly - film shown - students asked opinion. - differences of opinion analysed.

*The video tape of Shelly Duvall's 'Fairie Tale Theatre' was shown to students of 2nd, 3rd, 4th standard after reading Anderson's 'Snow White and the seven Dwarfs' text, as an experimert.

RESULTS

The students who were from the upper socio-economic status (SES) group were best in reading skills and exhibited advances above their age group. This group also had the maximum exposure to home reading material of a very varied nature.

In the library these students selected story books above their expected level of reading skills. They also referred to the dictionary/children encyclo-pedia when confronted with difficulties. The books they selected off the rack were after a predetermined search based on where they had left off at home.

In the lower age group, students searched to find the same title but a different version was preferred.

These students had a well developed "fluid intelligence concept" - ability not based on formal school instruction.

The students from the meddle SES had a reading style characterised by an emphasis on semantic prompts. There was a stress on discussion enhancing understanding and was more picture attracted. There was a greater accent on phonics. Comprehension was poor. Assimilation of correction was some what slower.

In the library these students preferred to read popular fiction (among middle school) and fariy tates (among primary students). There was a more verbal discussion regarding reading difficulties.

The other activities in general, which was more performance oriented yielded poor results in relation to reading performance. and non-significant results. The non-reading activity's influence needs to be investigated as a seperate variable.

The reading activities in the library had a very significant relationship with reading performance especially rhymes and picture stories in the primary section which reflects havings books, newspapers, magazines at home and frequency of reading by parents.

The brief attempt to help poor readers i.e. (a) under-achieving readers, (b) low achieving readers needs more time for a workout which was not possible from the librarian's duties and this area of formulation of new strategies needs detailed investigation. However the number of poor readers was insignificant.

DISCUSSION

The influence of reading has been shown to affect and influence 3 domains :

i) Students cognitive, affectivd and behavioural characteristics.
ii) Sociocultural and home background factor.
iii) School and teacher characteristics.

The main factor observed in the library is the influence of English as the reading language affecting reading behaviour. This follows closely the Keeves Cycle of performance (1986).

It was observed theat many middle class parents laid a basic foundation for reading by introducing rhymes, picture books and stories and inducing the child to try with sentence formation and new words into the vocabulary.

The upper class children had access to illustrated story books and this increased the motivation to read and reading became a pleasure activity. They created a pleasant atmosphere and the reading sessions in the library period became more "reading for meaining". On graduating to middle and high school these students were the major borrowers and spent more freetime in the library engaged in varied reading.

The hobbies of children had low siginificance values related to reading. The only significant point hoted was the 'rush' to read books on planes and war books, mostly illustrated.

The children from families whose parentsa were from the North showed less inclination to read in the library and the reading was limited to simple story books. Language usage was also porly developed. In comparison students from the South read more varied literature, used the reference section regularly and achievement factor was high. Reading was more of an exercise than meaning.

This study gives an insight into omplexity of different social environment in the home and the development of reading as a habit.

The 'paired reading technique' and 'shared reading technique' need to be development in the home and the classroom and the library.

The library's strategy can be best summarised as -

i) reading material of intrest to the chile;
ii) need to make reading material accessible to pooper readers by proper strategy to increase flow of reading;
iii) facilitate the child to draw on wide range of sources;
iv) help in the context using prompts and
v) explanation, discussion of the story and pictures with a focus on enjoying the story. Correct reading needs to be secondary.

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CONCEPTUAL FRAME FOR SUSTAINABLE AND RESPONSIVE MANPOWER

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Abstract The library and information professionals have to develop and master new expertise to remain relevant to their profession. The 100 years of modern librarianship during which it has perfected many tools and techniques to organize knowledge and its dissemination provides them excellent base to take their profession ahead by distinguishing the practice of librarianship from macro level to more specific micro areas while using the IT to their benefit. This calls for restructuring of LIS education and training programmes and assigning specificity to the role played by the universities, specialist institutions, polytechnics and distance education programmes in the field of library and information science. In this frame, the issues concerning sustainable manpower, course contents for the various educational levels, especially at the Master's level, development of curricula for specialised library systems and additional opening for the library professionals have been focussed. Giving librarianship a new dimension from servicing to a creative profession is also highlighted.

INTRODUCTION

The development process in any profession is linked to periodic review of its objectives, especially when there is a visible need for review of programme objectives. This process is continous. The need for such a review in Library and Information Science (LIS) acquired particular relevance in the 1990s because of the changing scenario of information generation, its storage, and use. The professionals are gradually becoming more appreciative of the future demands on them as managers of knowledge and information products, and even as creators of electronic product.

FUTURE WATCH

The oncoming time beacons a vision for newer roles and the development of manpower which is not only in tune with times but also sustainable. To be update and prepared for the future has prompted an extensive debate and the futuristic studies emphasize revised job titles.

Ojala [1] on "What will they call us in the future" informs us about the growing inclination to define the professional role in the job title like the `Information Professional' or its variants like the Information Officer' or the high profile `Director of Knowledge Management'. Spaulding [2] designates the professional as the `Knowledge Counsellor' and views him as an "intellectual requiring much more skill at selecting, analysing and synthesizing information" and who would establish partnership with users and be aware to the technology. Professional literature also figures various other titles including the InfoPro' or the `Librarian'.

Piggot [3] holds that due to technological and economic changes the role of the librarians as information intermediaries must change if they are to avoid being displaced by other contenders. Dysart [4] provides us views of some of the leaders in the profession on the question of IT's impact in the near future, say in the year 2005 on the management of information and quotes Marjorie Hlava, a former President of the American Society for Information Science : "In the 1940s, there was a tremendous push on indexing and abstracting to allow access to the explosion of scientific and technical publishing at the time. Today, there is another explosion of information available along electronic highways. Much of it is not relevant or useful to most researchers and there is very little quality control. Moving towards 2005, information specialists and information managers will need to focuss their skills on these electronic highways - weeding, sorting, collating, organizing to allow greater acess and use of relevant, key information." There is another remarkable quote of Nancy Gershenfield, winner of the SLA/Meckler Innovative Technology Award, that the clients would be able to do regular searches, using one interface to reach thousands of systems worldwide. "When appropriate sources are found, by clicking on an icon, the searcher will go directly to the host server for the actual information whether it is full image, graph, text, video or E-mail. With sophisticated world processing software embeded in it, will allow a much more streamblined downloading and delivery process to enhance the sharing of information."

These perceptions enjoin upon the profession to consider issues relating to the education and training (E&T) programmes not only relevant to existing and practical needs of a developing country, but also to provide their manpower with future vision and competencies to deal with newer expectations from them. This is all the more necessary for reasons of maintaining academic

status and salary scales of LIS personnel in India.

MANPOWER : EDUCATION AND TRAINING

The university departments of LIS are our main agencies to meet the manpower needs along with other specialist institutions. They have conceived LIS programme essentially comprisiong of E&T components at the degree level. This concept is an inidcator that LIS programmes are viewed to have a strong theoretical base and practical skill for performing a variety of library/ information centre functions. However, a better appreciation of the interreleated E&T terms is needed for any future programme.

The course contents for the Bachelor and Master levels at various universities require changes to be made. Of course, we cannot overlook the ground realities which have demonstrated extremes in being responsive to the application of IT in the changing face of librarianship reflected in the in-house operations and information services through computerization, telecommunicaions, networking, and reprographics on the on, hand a very slow reaction to the IT impact on the other hand. A critical evaluation of the syllabi of most of the universities providing LIS Programmes shows that they are producing manpower more enable to traditional manual methods and some awareness of the expert roles expected of them. But these courses donot adequately equip them with the competencies to make them employable in truly demanding situations. The change in the nomenclature of the departments to indicate their extended role in imparting E&T for library management to information management has not been necessarily translated into acceptable levels for whatever reason : academic apathy, economic strains or the pangs of change.

Another factor which is effecting manpower programme is the growing tendency for universalizing formal library and information science education through distance education programmes of universities practically at all levels from certificate/diploma course to Bachelor and Master level courses. For such developments there are opinions for and against and justifiably too, but the question that must be addressed to seriously is the quantum of trained manpower eventualy available and the job situation.

ROLE MODELS AND NEW DEVELOPMENTS

Among the north Indian universities the departments of LIS of the universities of Delhi and Panjab are largely viewed as role models for laying objectives and designing course contents for their degree programmes. Both the Departments occupy eminent position. The Delhi University LIS Depart-

ment came into existence in 1946 while the Panjab University started a post-graduate Diploma in Library Science in 1960. Both the universities presently have facilities for doctoral level education and research. Their objectives read almost identical. The common features at the BLIS level are to develp understanding of the basic principles and fundamental laws of Library Science; functioning of different types of libraries, and training in techniques and management of libraries. At the Master's level, these courses aim at learning of research methodologies, specialized knowledge about different types of libraries and documentation work. The subjects taught for the first degree are the theory and practice of library clasification and cataloguing, library and society, reference and information service, and library management. The Panjab University has also a paper on information systems and services. The Master's programme at the Panjab University covers subjects such as universe of knowledge, practice of advanced classification and cataloguing, bibiography and literature in various agglomerates of disciplines, information storage and retrieval, computer applications, and options in specialist library systems such as Public, Academic and Special libraries. The Delhi University has additional provision for Medical, Agricultural, Engineering and Technological Library Systems.

The North-Indian universities generally follow these objectives and course contents for their LIS programmes.

Most LIS schools are, however, emphasizing on extensive theoretical courses, especially in Classification and Cataloguing. But the theoretical concepts of Information Science are not adequately evident in the MLIS courses. The existing courses are well-suited to generate manpower which can be conveniently recognized as proficient for a generalist's role. The professionals can manage traditional librarianship developed over the last hundred year which perfected tools for the organization of knowledge and retrieval of information. The situation largely remains the same what was expected of it till the 1970s. An analysis of job market for library and information personnel in India during 1992 by Malhan and Gurdev Singh [5] revealed that out of the 621 jobs advertised through 178 advertisements, 378 vacancies demanded B.Lib.Sc./Diploma whereas 126 vacancies demanded B.Lib.Sc. as essential professional qualification. 35 vacancies specified M.Lib.Sc. and 19 others mentioned either M.Lib.S/Associateship of INSDOC/DRTC as essential professional qualification. Only in one case M. Phil. in Library Science was advertised as desirable qualification and only in 12 cases Ph.D. in Library Science or published work of good standard was specified as essential professional qualification. Incidentally, only in 10 professional vacancies knowledge of computer application for library work was advertised as desirable qualification. There is some time lapse between this survey and today and the current situation may be slightly variant.

The Library E&T programmes and manpower utilites are closely in-

ter-related. But the programmes should also have a broader perspective of international situation and a certain idealism for the propagation of knowledge boundaries. No library school assuming role to practice excellence can ignore this aspect, and the curricula must reflect concern that it is not too behind whatever the geographical boundaries may be.

In India, LIS as a discipline is no longer in infancy. There are 76 Indian universities which are offering LIS courses from levels Bachelor to Doctoral.

The situation relating to E&T is gradually changing and professional thought has been given to the issue at the national level. The Panel in Library and Information Science, chaired by Professor P.N. Kaula, formed a Curriculum Development Committee to draft a revised pattern of education for LIS schools to produce professionals suitable to jobs in libraries in the changed environment. The reprot of this committee was presented to the UGC, and published in 1993 [6]. Most north Indian universities, however, still have to give thought to these recommendations for adoption.

The E&T programmes need to be redesigned by the universities. Even if existing courses would continue to be relevant to many a library, these would be inadequta and irrelevant in some cases which are responding to new developments in the areas of telecommunications, compact storage and retrievlval systems, and library applications for in-house operations and readers' services. Suryanarayana [7] indicates competencies and skills for library and information professionals in the nineties, to enable the professionals to select, acquire, evaluate, integrate, condense, analyse and make available the "latest information or date pertaining to specific mission, discipline, phenomena or a product." For instance, the communication skill would enable the professional to ascertain the user's need in a concise manner by conversing with them at their level. The computer and preservation skills require them to use the PC operating systems for various library operations and useand maintain a variety of electronic and reprographic material and equipment such as magnetic and floppy discs, CD-ROMs, magnetic tapes, video discs, microform readers/printers, photocopying machines, electronic stencil cutters, offset duplication machines, Facsimile Transmitting Machines (FAX), electronic typewriters, computer equipment with terminals, printers, visual display units (VDUs), modems for telecommunication networks to access remote databases, desktop publishing (DTP), etc. Editing competency is to express oneself in writing competently. The information retrieval competency requires them intellectual and analytical means to have a control on IT tools, indexing systems and searching databases.

To what Suryanarayana suggests, there can be various other collateral functions which will open new areas of employment in the fields of database creation, professional writing and consultancy services.

SPCIALIZED PROGRAMMES

The gap between the university E&T and the expertise required to handle specific expert roles especially in the use of management skill and use of computer software is largely being filled up by professional agencies or national information centres.

The National Centre for science Information (NCSI), for instance, conducts one-year training for application of information technology to library and information services for those who have obtained a Master's degree in Library and Information Science or its equivalent course such as the Associateship in Information Science from DRTC/INSDOC.

INSDOC has conducted various short term courses on computers, programming languages, MS-DOS operating software packages like CDS/ISIS, Wordstar, on-line searching and various other developments in information Science and Technology. The National Information System for Science and Technology (NISSAT) is helping institutions and professional associations to conduct short term courses for various levels of professionals. Similarly, the National Informatics Centre (NIC) has short term courses for bibliographic database management, CCF in library and information management, automated system for library management, etc.

Specialist institutions like the All India Institute of Medical Sciences [8] provided a forum for librarians, dodumentalists, information officers, library and information science teachers, health and R&D scientists and computer professionals from libraries, public sectors, CSIR and national laboratories to attend the National Training on Modern Technologies for information handling covering areas such as automation of libraries, CD-ROM and library networking, E-mail services, electronic publishing, multi-media, Internet, etc.

DESIGNING COURSES

Finally, the designing of new courses can take notice of the following recommendations.

5.1 The relevancy of educational programmes must be related to factors such as :

5.1.1 Awareness of the extent of knowledge, especially development of new theories, for broadening conceptual frame of a discipline.

5.1.2 Awareness that education is close to cognition, and training refers to skill development.

5.1.3 Development of expertise in specified micro areas of a dicipline.

5.1.4 Relationship of training with specific needs.

5.1.5 The profession to be alive to future demands.

5.2 The awareness of basic theoretical concepts, and meeting the needs of traitional librarianship being practiced for the last about 50 years should be left to the polytechnics for a two-year programme and one-year Bachelor's terminal course at the universities. The emphasis be given to the practice of manual\electronic methods for classification, cataloguing, indexing schemes and general management of libraries in different library environments.

5.3 The MLIS should be an integrated two-years post-graduate programme of which the first year should be devoted to philosophical and intensive theoretical background and ability to use CC, DDC, UDC, CCC, AACR, CCC and understanding of the working of various sections of automated Public, Academic and Special Libraries.

5.3.1 The ***first*** of the second year programme should comprise of specialist course on any of the various types of library systems such as Medical Libraries, Agricultural Libraries, Map Libraries, Video Libraries, Technical Libraries, Engineering Libraries, Law Libraries, Legislative Libraries, Public Libraries, University Libraries, College Libraries, Special Libraries, Science Libraries, Industrial Libraries, Newspaper Libraries, etc. The content of these courses would comprise of an understanding of the specific institutional environment, their objectives, users, comprehensive study of the bibliography and literature, including electronic media information, retrieval techniques and services through manual and electronic methods; these courses should also include advanced studies in classification schemes, advanced studies, in cataloguing, conservation and preservation of library material.

The ***second semester*** programme should be devoted to gaining E&T in the IT areas like computer applications for library and information work, networking, library software, on-line searching, reprographics, electronic classification and cataloguing, preservation of electronic media, desk top publishing, etc.

5.4 The literature and expertise is available in the country for designing such courses. The universities can restructure their LIS E&T especially for the MLIS programme to remain with the times so that information specialists cannot make the knowledge and information handlers in the libraries and information centre redundant. It would be better if a nationally accepted LIS programme is available.

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EDUCATION FOR LIBRARIANSHIP IN INDIA : HOW TO MARKE IT MORE SUSTAINABLE?

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Abstract Traaces briefly the LIS educatino in India. Examines the social, demographic, economic, political, educational, and technological changes in the country. Indetifies the issues to be considered to make the LIS profession more relevand and sustainable.

INTRODUCTION

Educatin is one of the key factors, on which the development of a nation depends. Hence, it is referred as "axis of the nations development", a key to the human resource development and as such assusmes significance and importance. It plays an important role in the upliftment of the society.

Education for library and informatin science, as a subject of study, compared to other disciplines, has emerged more recently - a 20th Century phenomenon - having a history of hundred years. The educatino for library and information science involves imparting of systematic instruction and training in LIS with a view to develop the manpower required to serve in different environments.

The developments in the field of computers, communication, publishing and scholarly world have influenced the field of LIS. As a consequence of these developments the environment in which the libraries are operating has changed over the years. These changes have made the library schools to restructure course/s in order to make their programs more relevant, sustainable and there by help in the development of professional manpower to meet the challenges of change. This paper provides an overview of LIS educatin in

India, examines the changes in the environment and identifies the issues to be considered to make the LIS profession more relevant and sustainable.

LIS EDUCATION IN INDIA

Formal training in library science in India dates back to 1911. Thanks to William Alaman Borden and Maharaja Sayajirao Gaekwad of Baroda. A regular course at the university level was introduced at the erstwhile Punjab Univesity in 1915 followed by library associations takiang interest in establishing courses [Madras Library Association, 1929 and Bengal Library Association, 1935]. Later, universityes took lead in establishing post graduate courses of one year duratin [Andhra University, 1935 : Madras Univrsity, 1937 : Banaras Hindu University, 1941 : University of Delhi, 1947]. Research facilities have been provided leading to a doctoral degree since 1947, by the University of Delhi and other universities have followed later.

At present LIS educatin is imparted at different levels, leading to certificate, diploma, bachelors, masters, M Phil and Ph D degrees awarded by Library Asociations. Universities, Polytechnics, Autonomous bodies, Libraries, Documentation Centers, etc. Besides, the LIS education is also imparted by Open Universities.

The duration of the course which is related to the level of course varies from few months (certificate) to one to two years [diploma, degree (One Year), masters (One Yar and two Years), associateship (two years)] to few years (M Phil and Ph D).

The minimum qualification for admission to the various courses varies depending on the level and duration of the course. Matriculation/PUC is a prerequisite for certificate and diploma courses. A bachelors degree with second class is a minimum qualification for entry in to one year bachelors or two years master course. For one year master course, a bachelor degree in LIS is essnetial. For M Phil and Ph D, a master's degree with second class is a prerequisite. In some universities, minimum requirement for Ph D is M Phil or Pre Ph D.

The intake of candidates varies from one course to another and from one institution to another. English is the medium of instruction in many of the universities. Some of the universities allow the students to take examination in Hindi and regional languages.

The LIS education initially leaned heavily on technical aspects, followed by theoretical aspects and at present the LIS schools have a pattern of curriculum with traditional subjects and subjects having little emphasis on modern information technology.

TOWARDS CHANGE

The pharase "change for better" seems to be the talk of every human sphere. The need of the day is to accommodate these. The vary purpse of education is to improve the quality of national wellbeing. Hence, education for library and information science, need to take into consideration the social, demographic, economic, political, educational, and technological changes, as all these have immediate bearing on the profession.

SOCIAL CHANGES

Indian society is a complex one resulting from many invasions. India is multilingual country with long monarchic, feudal, bureaucratic traditions with an impact of British empire over last two centuries. It had traditions of agrarian and demarcated class societies. Traditionally, the education and book have been for the select few. Now, the situation is slowly changing with the efforts of uplifting the socially downtrodden.

The education has been largely class room centered and as such there has beenlittle relationship between formal educations and libraries. The reading habits of people is changing. The new technology is playing an important role in transfer of information. Information is now being regarded as a national resource, a necessity for national development and hence, forms an important component of "community Services" and its importance is growing.

DEMOGRAPHIC CHANGES

India is the second most populous country in the world with the present population estimated at 960 million, growing by 16 million a year. If the same trend continues, it will surpass China in 2050 with the population 1600 million. This change is expected to increase the demand for professional education. Although, as of now, there has been lot of rush for professional courses especially in medical sciences and engineering, the steps need to be taken to attract the youth having scientific bent of mind towards LIS.

ECONOMIC CHANGES

India is passing through fluctuating economic turmoils in the twentieth century, and now is rebuilding its economic s tructure. India is in the process of building up its industrial infrastructure in the light of economic lib-

eralization, privatization open door pilicy and growth of it industry, causing a restructuring of employment patterns at all levels. In this situation LIS education has a greater role to play, in developing manpower to handle the enformation.

The entry of multi-nationals in the country in different spheres has created more demand for skilled managerial cadres. Further, liberalization policy of the Govt of India has resulted in corporate scenario, requiring information manager to be fully equipped withall possible tools and skills.

POLITICAL CHANGES

The policies of the Government also affect to a large extent the LIS education in the country. The first important factor is its policy, regarding the engineering and medical colleges. The increase in number of professional colleges especially in medical and engineering science has affected the intake in all the disciplines and library and information science is not an exception.

The second important factor, is their policy towards opening of new universities/converting the P G Centers into new universities. It can mean more number of PG Departments, and greater opportunities for undergraduates to get into other departments, rather than preferring librarianship.

The third factor that affects is the policy of reservation for certain sections, requiring the restructuring of admission patterns.

The next factor is the policy regarding filling the existing vacant posts, in the light of recommendations of fifth pay commision. It means these vacant posts cease to exist over next ten years resulting in that much of cut in employment opportunities in public sectors.

The right to information is another important factor. If it becomes a law, it bring concern for information professionals. They need to retrieve and disseminate the most classified information resulting in wide range of problems.

The next important factor is the legislation for information control in the light of advancements in information technology. Such type of legislation will give suport to ethics of the professin, that needs to be studies formally.

EDUCATIONAL CHANGES

Until the last quarter of nineteenth century the pattern of education in India was relatively simple. Significant changes are taking place since than, to

cope with requirements of society. A growing natual concern for the non-traditional disciplines, hastened the need for reexamination and reevaluatin of institutional mission previously designed for t raditional disciplines. The country is moving rapidly toward a need for trained IT workers, than the education system is prepared to supply.

In higher education there is a renewed trend towards courses in units or modules or packages. The emphasis is shipting from traditional to non-traditional subjects. Changes are also taking place in methods of teaching and learning. Off-site education, is gaining momentum. With the finacial crunch at its peak, self financed courses are fast coming up and certainly has an impact on the nature of the future courses. As the employers expectations are fast changing. So there is a need for employment-oriented courses.

TECHNOLOGICAL CHANGES

Technology is dominating every sphers of human life. The rapid growth of computers, networks, electronic information resources, communication technology etc are bringing changes in the division of work between human resources and machines. The nature of work to be carried out by people is also changing. This is causing a significant change of attitude towards informatin technology, as end-user is gaining importance. Further, in the light of these changes, personnel from other fields are dominating over LIS workers.

ISSUES TO BE CONSIDERED

Unless the LIS program is restructured, keeping in view the implications of social, demographic, economic, political, educational and technological changes, it becomes difficult for the profession to sustain in the future. The planers and decision makers must have a clear view of the issues that should go into new program to be developed for the preparation of next generation of LIS professionals to sustain any kind of changes.

The main goal of LIS education is develop the manpower to function in a wide variety of environments and to handle informatin related activities from records management to database management to the ew ffective retrieval of information and the evaluation of tools and services. Hence, the LIS curriculum has to integrate traditional askills with the technological growth, so as to address the work force issues that face librarianship.

The attention should be given to the following issues while designing the programme for LIS education at different livels :

* Locat information needs for socio-economic development
* Needs of rural communities
* Staffing needs of different kinds of libraries at different levels
* Manpower needs of the country
* Closer relationship with libraries
* Need for training programme at different levels
* Academic aspects of profession
* Access to new instructional resources to increase the level of finstruction programmes
* Stabilize e ducational scale and regulate educational institutions
* Establish a system for control and asessment
* Improve textbook construction
* Practicability of syllabus in the present context
* Communicatin skills
* Emphasis on team-building, time management and task allocation
* Leadership programmes
* Importance of national information policy
* Budget control and techniques for fund raising
* Personnel management
* Marketing skills
* Comparative Librarianship
* Changeing functions of libraries in the context of electronic age
* Professional ethics
* Professional identity
* Mental preparedness for changes
* Training to cope with changes
* Market pressure
* True work force requirements should be calculated
* Actual employment capacity of the profession
* Mobility of professionals and status of posts
* Creating general awareness among new generatin of students
* Erasing negative perceptin of the mission of the profession
* Increase the level of guild attitude
* Professional updating through in-service training and refresher courses
* Package of inter-related courses oriented towards traditional aspects of profession, addressed to personnel from other fields entering the profession
* Equal emphasis on instructin and research

CONCLUSION

The motto of LIS education will not be served, unless it is associated with continuous thinking, discussin, experimentation, observatin, feedback and

modification in the light of various changes. Basically, LIS education involves three important components, traianing, vocation and profession. Over the years, with advent of technologies, the face of profession is changing. Hence, philosophical foundations and conceptions on which LIS educatin is based should be re-examined and efforts should be made to adopt them. Though concepts and practical taks should be compatible enough or at least should not contradict each other. Further, students should be educated to be able to reach and teach the users in us using the library facilities.

Programs have become unattractive just because their products area not academically well perceived but also because of lack of image. Hance, the students who are materialistic, carrier oriented look for dynamic and attractive careers rather than joining LIS profession. So efforts should be made to attract the potential youth to undertake the LIS education.

Hence, a pattern need to be shaped out of these diversities with quality of forecasting, transcending the present reality to fulfil the future vocation. Only then the profession will sustain any kind of changes.

LIS CURRICULUM : SOME SUGGESTIONS

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INTRODUCTION

Library and Information Science education in India has crossed more than half a century. Thanks to William Borden and salutes to Dr. S.R. Ranganathan for planting, watering and nurturing the discipline in Indian soil. The technological advancements all over the world have changed the face of many disciplines and Library and information science is no exception to it. With the advent of Computer and Telecommunication technologies the role of libraries have also changed. The information society with its new information requirements expect a competent and trained library personnel. This necessities the introduction of a new curriculam or remodeling the existing one. Library and information science education has to provide a sound platform to meet the challenges and opportunities.

CURRICULUM - WHAT AND WHY?

The term curriculum is derived from a Latin Word Currie meaning race-course or body of courses. Websters Third New International Dictionary defines it as[1].

The whole body of courses offered by an educational institution or one of its branches.

(i) Any particular body of courses set for various courses.

(ii) K.G. Saividar defines curriculum as "Primarily an aid in the process of adjusting an individual to the environment in which he functions from day to day and the wider environment in which he will have to organise his activities later".

In other words a curriculum is organised with the general objective that it promotes abilities. The goals of any curriculam will fall into the following.

(i) To encourage rational thinking and to give practice in problem solving.

(ii) To promote scientific literacy.

(iii) To provide a foundation for professional career.

(iv) The course should demonstrate its benefits to the society.

The curriculum should acknowledge the environmental issues. It should relate the contents in such a way they suit the changing trends in the field.

Since library and Information Science is a professional course emphasis on curriculum should be given to what LIS students do and not merely what they know.

THE PRESENT

More than 75 universities in India offering either BLIS or MLIS or both. The duration of the course also varies. Many universities in south India offer a 2 year integrated Master level programme whereas majority of northern universities continue their one year programme. The number of papers taught differ in par with duration. The suggestions expressed in this paper are suitable for one year and two year programmes, but more appropriate to the 2 year programme.

The following papers are generally taught for one year or two year library science programmes in Indian universities

(i) Classification and cataloguing (IPRS) (Theory and practice).
(ii) Management of library Inf. centres (Theory and practice)
(iii) Information Technology and Computer Applications
(iv) Specilization in any one of the Information systems like Public, Special, and Academic
(v) Project work/dissertation work.

THE NEEDED CHANGES

Curriculum in a wider sense is preparing an individual to become productive and useful to the society to which he belongs with this thought in mind the following suggestions are expressed.

(i) Selecting what is relevant.
(ii) Less theory and more practice.
(iii) Training or placement as a regular component
(iv) Need based project work
(v) Uniform syllabi
(vi) Study Tours

3.1 Select only the relevant

The market needs of information specialists demand new skills and new services. The curriculam should reflect it. This does not mean that one should reject the traditional papers like classification and catalogings for ever but means giving more space to information technology oriented papers,

Biblometrics, Infometrics etc., A paper on `Statistics' or Psychology `or' Mass communication would definitely enhance the students information handling skills. This integration with other subjects can be shown as decision making components.

3.2 Less theory and More Practice

The curricular should invite more number of practical hours. This may be the working of classification and cataloguing titles or computer lab hours. The students must be given hands on experience with on line information services. Preparation of Bibiographics, indexes and absheets of different kinds will enable the students to work in any environment. The future society cannot avoid computers. Hence knowledge in creating computerised databases, information access through network is a must. Training programmes or workshops can be organised by the department or the department can make arrangements with either University or Special or Industrial libraries (where library softwares are in operation) to give training to the students.

3.3 Training or Placement

The profession librarianship enjoins on the libration scholarship and bookmanship. Training enables the students to harness his scholarship and knowledge. This puts him at more ease in his future working place. Training enables the student to test what he learned as theory. Training is the best teacher. There is always a demand for trained manpower in the Job market. The training can be done at two levels. In the I level every week specific hours in a day could be allotted for library work where the students would be divided into small groups of 3-5. Each group can visit any one types of library for a sequential period and observe and participate in library work. This enables them to know the working of different kinds of libraries. It also enables them to be trained in library routines like circulation, reference, serial control etc.,

In level II the students can be placed for a month or two in the leading libraries and information centres within the state. The students will really gain much work experience in this phase. They will be asked to submit a report which will be considered for evaluation. In Bishop Heber College, Trichy the final year PG Library Science students undergo `Library work Programme' -- This is treated as equalent to a course paper. Marks are given for report writing, activities, undergone by them at different library, special programmes conducted by them in that library (Bok Exhibition programme, user orientation, REader club etc.,).

PROJECT WORK

Some library and Information Science programmes do not have project

work/Dissertation or consider them optional. If done with sincerity project work gives immerse intellectual satisfaction both to the student and to the teacher who guide. The students may do literatures search and can create data bases on those current areas where adequate information is not available.

UNIFORM SYLLABI

This does not mean a 100% doubing of the course content. But having a common code regarding names of papers to be taught modules to be included at each year or semester. This broadens the career chances of the students. Local variations is always appreciated. Depending upon the social and cultural need certain modification can be done in the syllabi.

STUDY TOURS

This could be arranged for once in a year or semester. Students could be taken to various libraries and information centres in the state or near by states. This enable the students to know the avenues available in their field, the structural differences, the infra-structural facilities available etc.

CONCLUSION

At no point of time any society has lived without information. But at no point of time information has played such an important role in the transformation of society as it is doing today.

Hence curriculam for library and information science should be designed in such a way that they enrich the student and prepare him to undertake any task in the field with skill and ability. Fresh approaches end new structures in this regard will help to meet the evern growing information demands in its different forms.

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MANAGEMENT OF CHANGE IN LIBRARIES VIS-A-VIS LIBRARY AND INFORMATION MANPOWER DEVELOPMENT WITH REFERENCE TO KARNATAKA STATE UNIVERSITIES

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Abstract Defines change and gives broad idea of library and information science [LIS] education in India. Points out problems in LIS education in general with special reference to LIS schools in Karnataka. urges to streamline LIS education by implementing the existing recommendations of various committees and commissions on LIS education and the recommendations of Curricular Development Committee [CDC] to bring out qualitative change in building manpower development to manage the changed Modern Libraries.

INTRODUCTION

Change is Life, Monotony is Death goes the ageold saying. Change is life and is must for individual's personal and professional development. Here, we mean change for the better, onward, forward, progress and development. It is a natural phenomena and is continuous and ongoing. Change helps for survival and growth. The change in individuals would lead to change in society. The progress and development of any profession, institution, organisation, society or a nation depends on the extent of adaption to a changing environment or situation. The last fifteen to twenty years have been the years of rapid changes and we are living in a period of transition. Libraries, library and information science as a discipline, librarianship as a profession also therefore are undergoing change at different levels and pace to cope up with the changing environment.

CHANGED SITUATION AND THE CONCEPT OF MODERN LIBRARY/LIBRARIANSHIP

Modern library exists not merely to provide traditional library services but it does a great deal in helping and assisting readers by providing pinpointed, expeditious and exhaustive information quickly, accurately and in time. For this purpose the library collects information from various conventional, nonconventional, neoconventional and metadocuments. Further, the modern librarianship asks for library professional to be equiped with the knowledge of library automation-computers and computerisation, electronic media, linear text, hyper text, direct access, on-line, image processing, CD-ROM, multimedia, networks and networking etc.. The librarian needs to be educated in all modern techniques, methods and procedures of information collection, organisation and its dissemination to provide the modern library services.

In the light of these changes in library collection and services the library and information science (LIS) as a discipline (LIS education) needs to adopt to internal changes in preparing and developing manpower to meet the requirements of changed concept of modern library services.

LIBRARY AND INFORMATION SCIENCE EDUCATION

a) The Begining

In 1911 W A Borden first started library science course in the then Baroda state, followed by Asa Don Dickonson, the librarian of Punjab University, Lahore in 1915.

The Imperial library, Calcutta (presently the National library of India) started a regular full time course in librarianship under the guidance of Khan Bahadur K M Asadullah who was the Librarian for nearly two decades, the Bengal library association, the Madras University (1931) under Dr. S R Ranganathan, Banaras Hindu University (1942) Bombay University (1943) and Calcutta University (1946) started regular programmes/courses at different levels to prepare manpower in LIS.

b. The Present Scenario

Presently there are more than 107 universities, institutions affillated colleges having training courses in LIS including correspondence courses beside the specialised courses of INSDOC, Delhi and DRTC, Bangalore to develop manpower for managing libraries and information centres. Further many private management colleges and institutions are having LIS programmes. Almost the universitites which have correspondence programmes do have LIS course.

The courses exist in different levels as certificate course, Diploma, Bachelor's degree, Master's degree, M Phil and research leading to Ph D degree.

The library and information science education at different levels should provide education and training for developing sustainable manpower to manage the modern library and provide modern library services. However the LIS education and the out put of LIS graduates existing manpower presently is not fully equiped to meet the challenges of changed librarianship as some of the major issues for standard in LIS education particularly at degree level (BLISc and MLISc) have not been given serious thought in many LIS schools and universities.

Infact the UGC recommends for the maintainance of standards in university education and more so in professional courses and thereby it appointed the Library Committee in 1957 and Review Committee on Library Science in 1961 both under the chairmanship of the Doyan of Librarianship Dr. S R Ranganathan. Further for the standards in LIS education UGC panel (CDC) in Library and Information Science. Accordingly, in 1990 under the chairmanship of Prof. P N Kaula CDC gave a uniform pattern for LIS education in the country. The CDC report has recommended for drastic changes in the LIS system so as to prepare information professionals, personnels and built manpower who could tackle successfully librarianship in these days which are undergoing drastic changes in outlook functions services and in methods of information collection, organisation and dissemination.

THE PROBLEM

There are 107 universities affiliated colleges and institutions offering LIS courses including correspondence courses in India as mentioned earlier. However most of them donot have adequate resources, facilities and the basic infrastructure to develop proper manpower to manage modern libraries. They lack qualified, experienced staff to teach LIS since it is a practical oriented course requiring practically experienced professionally qualified committed and dedicated teaching faculty. In many departments of LIS as such no understanding and cooperation exists between library and LIS departments. Infact many of the LIS departments have people without any practical experience or exposure to the practical situations of managing library and information centres. Naturally they are more and more theory oriented. There is glaring duplication in diploma, degree-BLISc and MLISc courses though they are offered at different levels of LIS education. There is not much difference in the intensity of syllabus of these courses. A such there is no uniformity in similar courses offered by the different universities in India. As look at the syllabi of LIS departments, naming of departments, degrees awarded, nomenclature is so var-

ied and divergent that it becomes very difficult to judge and evaluate the standard of LIS professional graduates. Within a state also there are extremes with regard to no of papers offered, marks allocation, name of the degree, curriculum, course content which results in inconsistancies with regard to the suitability of manpower to manage a modern library in the changed circumstances.

THE CASE OF KARNATAKA STATE

Karnataka state has been one of the important pioneers in LIS education in post-independent India. It has the distinction of producing the maximum number of LIS Doctorate degrees in India. The state has six traditional Universities. The University of Mysore, Karnataka University, Dharwad, Banglore University, Gulbarga University, Gulbarga and Kuvempu University, Shimoga. It also has a Kannada University, two Agricultural Universities besides a medical University and two deemed universities being IISc, Bangalore and MAHE, Manipal. All the six traditional universities situated in Mysore, Dharwad, Bangalore, Gulbarga and Shimoga offer full fledged LIS education leading to BLISc, MLISc, MSc (Library Science), MPhil and PhD degrees.

However, there exists vast difference and divergence in syllabus, curriculum, marks allocation, name of the degree etc.. In Karnataka University Dharwad, University of Mysore, Mangalore University, Gulbarga University has integrated masters degree MLISc programme of two years duration. All these universities have catagorised LIS departments under the Faculty of Science and Technology. The Bangalore University the only one year MLISc programme and the BLISc programme is being conducted by a privately managed institute. Again the department of LIS in the university is categorised under the Faculty of Social Sciences. The Kuvempu University, Shimoga has a distinct nomenclature in LIS education i.e. two years program leading to the degree MSc (LIS). The very nomenclature of the degree itself is different from all the other five uiniversities conducting LIS education, thus leading to confusion, chaos and ambiguity.

The syllabi of just four universities of Karnataka (Appendix) shows that with regard to the title of the papers, marks allocation, course content varies significantly leading to visible confusion and diversity. However, one glaring feature is the papers on Library automation, Information technology, computers and computerisation is there in all the universities. Unfortunately none of the university syllabus has stressed on practical training or internship aspect for the practical oriented course like LIS education.

Of the six universities preparing manpower to sustain change in management of modern libraries through LIS education Mangalore University is the only university having devoted two full fledged papers on library automa-

tion-information technology-computers and computerisation with two hundred marks each year (Theory + Practice 100 + 100 in I and II Year). Thus giving due importance and weightage to the theory and practice unlike other LIS schools in Karnataka.

Further, the department of LIS Mangalore university is the only department equiped with 15 computers exclusively for the LIS students. The computer laboratory equiped with the latest machines like Pentium, 386,486 etc., came into existence under the Special Assistance Programme (SAP) of UGC. However, the department faculty lacks fully qualified staff to train professionals. Though efforts are made to take the help of persons from University computer centre, Guest faculties. However it requires LIS professionally qualified with atleast PGDCA to train and develop manpower to sustain the onslaught of Library automation and productive use of information technology.

SUMMING UP

In order to train professionals to catch up with the drastic changes in LIS as a profession the existing drawbacks in LIS education needs to be given a serious thought. The design of a curriculum for an interdisciplinary and multidisciplinary subject like LIS should be carefully prepared by keeping in view of the recommendation of CDC, the local preferences, needs and resources there should be more emphasis on practical training than mere theory courses. Further provisions should be given for compulsory practical training in different types of libraries to obtain MLISc Degrees. The Syllabi should be revised with the help of experts in corporating the changes, developments in the field from time to time. These internal adptatious by implementing to external change would bring out the successfull librarians to manage the onslaught of information explosion, Knowledge explosion by using modern techniques, methods, procedures and gadgets of information processing, handling and dissemination.

Finally the Librarians in the present days and near future will be successfull librarians only if the LIS education and training is standard and Upto-date. Various committees and commissions, conferences and seminars have been organised from time to time to recommend LIS education. What is needed is the practical application and implementation of these suitable recommendations which needs inturn the will on the part of library science stalwarts, professional associations and LIS teachers. Any delay in this would lead to librarians and Library and Information Science professionals left behind and the ladder of success would be claimed by other professionals and personnel as can be seen in the departments like INSDOC, NISSAT, etc.

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APPENDIX

COMPARATIVE SYLLABUS OF FOUR UNIVERSITIES IN KARNATAKA OFFERING L.I.S. EDUCATION

KARNATAKA UNIVERSITY DHARWAD	MANGALORE UNIVERSITY MANGALORE	GULBARGA UNIVERSITY GULBARGA	KUVEMPU UNIVERSITY SHIMOGA (M.SC. LIBRARY & INFORMATION SCIENCE)
I YEAR	I YEAR	I YEAR	I YEAR
1. Library & Information & Society	1. Library & Society	1. Library Information & Society	1. Library, Information & Society
2. Library Information Systems Management	2. Library Management	2. Management of Library & Information Centre	2. Information Sources & Services
3. Information Processing and Retreival. (Theory)	3. Information Processing Theory - I	3. Information Procesing & Organisation - I : LIbrary Classification	3. Management of Information System and Services
4. Information Science & Services	4. Information Sources and Services	4. Information Processing and Retrieval - I : Library Cataloguing	4. Information Processing Storage & Retrieval Systems (Theory)
5. Information Sources	5. Computres Basics Theory	5. Information Sources	5. Introduction to Computers
6. Introduction to Computers	6. Information Procesing Practice - I	6. Introduction to Computers	6. Information Processing Storage & Retrieval System (Practice-I)
7. Information Processing & Retreival (Practice)	7. Computer Basics Practice - I	7. Information Processing and Organisation - II : Library Classification - Practice	
8. Project work		8. Information Processing and Retrieval - II : LIbrary Cataloguing (Practice)	
		9. Information Sources and Project a) Information Sources (Viva) b) Project	

II YEAR

1. Information System & Programmes
2. Universe of Subjects
3. Research Methodology & Statistical Techniques
4. Information & Communication Technology
5. Information Processing & Retreival (Theory) - II
6. Optionals :
   a) Public Library Systems
   b) Academic Library Systems
   c) Special Library Systems
7. Information Processing and (Practice)-II
8. Dissertation

II YEAR

1. Information Processing Theory-II
2. Systems Analysis, Informetrics and Reaserch Methodology
3. Computer Application Theory
4. Electives
   a) Public Library Systems
   b) Academic Library Systems
   c) Special Library Systems
5. Information Processing Practice-II
6. Computer Applications Practice
7. Dissertation

II YEAR

1. Elements of Information Science
2. Information Procesing and Retrieval -III : Advanced Classification, Cataloguing, Abstracting and Indexing
3. Information and Comunication Technology
4. Research Methodology
5. Electives
   a) Public Library System
   b) Academic Library System
   c) Special Library system
6. Information Processing and Retrieval -IV : Advanced Classification, Cataloguing, Aabstracting and Indexing (Practicals)
7. Information and Communication Technology (Practicals)
8. Dissertation
9. Seminar, Tour, Viva-voce on Disseration

II YEAR

1. Information Processing & Retrieval System (Theory)
2. Research Methodology
3. Application of Information Technology
4. Information Processing & Retrieval System (Practicals)
5. Electives
   a) Public LIbrary Systems
   b) Academic Library Systems
   c) Special Library Systems
6. Dissertation

REORIENTING LIBRARY AND INFORMATION SCIENCE EDUCATION IN INDIA

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Abstract The educational preparation of librarians should be relevant to the needs of the society. Librarianship training should be futuristic and provide the basis for those who can adjust to advanced development in the field of computer technology both nationally and internationally. The task before us is to correct the inaccuracy and inadequacy in the curricula.

Computer technology has greatly influenced the development of the profession. Continuing education programs in the form of workshops and training courses need to be organised for the library educators. A general framework of the teaching mode for LIS education in India be designed.

CONCEPT OF LIBRARIANSHIP

The concept of librarianship in India is not fundamentally different from that in the western world. The main difference lie in the cultural background and the social context. As social instruments, libraries must be related to the social needs of its society. Further development would have to be on the lines on which the government and the people decide to focus and the accent that would be given to libraries in the national development.

The library as an instrument of education is more functional, more deliberate and conscious of its objectives. The need for libraries in educational institutions is more important because suitable alternative resources may not be available.

Libraries serve as information and communication centres. They identify the information needs of the society and provide reference, direct guidance and information to their clientele. The Information Scientist disseminates in-

formation on policies and programmes. He locates scientific information, assesses it and informs with the assistance of his varied communication facilities.

EDUCATION AND TRAINING OF LIBRARIANS AS INFORMATION SCIENTISTS

The educational preparation of librarians must be relevant to the needs of the society. The objective for training librarians is to promote literacy, to educate, to articulate the needs of the clientele, to increase productivity and improve the quality of life.

A world view of librarianship cannot reasonably be absent from the teaching of the library schools, and not just as historical or fossil importance, but as part of living and continuing traditions underlying the practice of librarianship everywhere in the present-day world that includes a large number of illiterates in many developing countries of the world and even literates at various levels in the developed countries. Also consider that the three period stages of human communications, oral, print, and automated or electronic, are still active and interwoven with large numbers of the world population falling actively within each category.

Thus, education for librarianship through international programs offered at library schools would be able to focus its intellect and facilities on the characteristics and differences of both the oral and the written traditions that encompass knowledge. Through such facilities, they could provide "coherence, consistency and continuity responsive to changing conditions, local circumstances and the imperatives of development in order to achieve effect and relevance."

Education for comparative librarianship has to "accept the dual responsibility of training for local service as well as for international service, because we are part of a world of information system". A curriculum that provides specifically for librarianship that is conventional and at the same time advanced and sophisticated.

There have been various arguments about the education and preparation of librarians who are to practice in a developing country like India. I believe that with local training both the student and the country would benefit from the local setting in providing examples for practical experience and training and in drawing on the local resouces for teaching. A steady output of trained library staff would undoubtedly speed up the development of libraries and librarianship in the country.

Librarianship is an international profession and its basic requirement wherever it is taught would generally be the same. Librarianship training must,

irrespective of the place of training be futuristic and provide the basis for those who can adjust to advanced development easily and be in the forefront both locally and internationally.

CURRICULUM DESIGN AND STRUCTURE

The task before us is not to change the basic library science curriculum, but to suggest the addition of some helpful courses.

I accept the views of Lester Asheim who, in 1966, had proposed that "our willingness to experiment, innovate and move with the times fits in perfectly with the desires of new nations. Our demonstrated efficiency in many newer fields of bibliographic control and information retrieval (add automation and information technology) provides the costly experimentation which new nations cannot afford but the results of which they can utilize."

Library schools should teach more of principles than practice, which international students can then relate to their needs. This provides for a varied sustained learning experience, which should be on home contemporary problems. The library schools should provide an international perspective by : (a) being aware of world-wide developments and situations in libraries; (b) maintaining regional specialists and experts who may serve as consultants; (c) provide inter-action between library schools and practitioners worldwide.

Lester Asheim summarises this very satisfactorily, "I would therefore urge that our upgraded programme emphasise the needs to adapt basic principles to specific purposes and conditions and demands of the student that he reach his own conclusions based upon a consideration of all the relevant factors. This requires him to analyse and to think not just to listen and to repeat. It will result in an understanding of the rules deep enough to permit their relaxation or even abondonment for appropriate reason and it will train him to formulate adaptations that will preserve the purpose of the rule wherever it has value."

The task before us is to correct the inaccuracy and inadequacy in curricula, non clarity, pedagogy and research in library and information science. It is important to re-examine the past history and the current theory and practice to include ideas, practice that have been excluded. It is necessary to explore the theoretical and the practical structure of library & information science education.

Structure of courses of study should be adjusted to meet social demand. It is essential to train qualified graduates for economic development work, and more units of technology and foreign language should be added while continuing to emphasize knowledge of library and information science.

Courses should be designed with future employment in mind, and advanced text-books should be written and published nationwide. Curricula need to provide opportunities for students to explore their professional values in relation to issues as censorship, fee-based services, equityof access and personnel management. In addition to courses like Human Resources Management, Library issues/or Ethics courses must also be included. Special topics on scholarship and methodology shuld be taught with an interdiscipinary focus at both the Master's and Ph.D. levels.

Developments in the field of librarianship has a direct bearing on the selection of content of courses in classification and cataloguing as well as indexing and aspects of information science. For example, we have taken for granted the hierarchical structures of classification by Dewey and others that have we might spend time in classes and in research considering alternative non-hierarchical structures, particularly since computers have offered us new capabilities that permit many more quantum leaps than were feasible just a few years ago. We are still teaching Dewey and LC and think we are on top of things by adding OCLC and RLIN records' control to cataloguing courses. Increasingly, paraprofessionals are responsible for most aspects of cataloguing; thus, it might be advantageous to explore new directions in subject analysis, retrieval structures, and user-dominant constructs. We are still teaching a book location paradigm in technical services courses with some consideration of a bibliographic record model, but with little or no consideration of the cognitive functions in classification. Certainly, this later approach would make for sound discussions of the mapping of knowledge and the concepts of hierarchical versus relational strategies.

FACULTY-STUDENT RELATION

Design teaching models that will match the needs of our students. Too often faculty employ a pedagogical approach chosen in isolation from the students we teach.

One of the most difficult aspects of teaching is the matching of teaching strategies to the learning styles of students. In the awareness of diversity within a class and in accepting responsibility for responding to that diversity, faculty members fulfill their responsibility as teachers. It might come as a shock to some faculty to learn that they may not always be right in their views and in the accuracy of what they teach. Further more, what they teach may or may not be accepted by students. To move to a cooperative learning process is to move to the acceptance of alternative views in an environment that encourages questioning and is accepting of alternative approaches and answers as valid responses.

Another basic area of curricula within library education that cries out for a more humanistic, inclusive, user-centered teaching approach is that the reference services. Too often reference service is perceived almost exclusively in terms of the tools that contain information thought to be important to our society rather than in terms of the library patron and the context in which the reference encounter occurs. David Carr says, "In practice, information problems are likely to be solved from the center outward — where the centre is the user." Reference students need to be more concerned with the process of inquiry and discovery than with the endless competition to learn the most tools.

In reference class for example, we might form several small study groups, provide each with a profile of a large public library and/or academic library and of a client seeking information on a topic such as "Williams Syndrome" (substitute a different disease for each cluster). Have each group discuss the nature of the client, what might be known about the client, how to determine what it is that the client is seeking, how to employ an ethics of care, and how to maintain the accuracy and recency of data presented to the client. It is in the discovery process that we learn the most. In point of fact, what we discover in the aforementioned example, is that information valued as most helpful to the client is not in a tool, but rather in an informal network of parents with Williams Syndrome children.

The concept of working in groups both inside and outside class meeting times provides essential opportunities to discuss and share approaches to an issue, problem, or concern. Flexibility of both faculty members and students is critical to this learning style. I have spoken with several faculty who use the cooperative approach and small and large teams for assignments; and each reports success, although they also note content in the curriculum that should, infact, be developed as practicals or other alternatives, available to or required of students. For instance, creating courses to teach the navigation of the Internet, DIALOG, or any other database is a modern technological version of the old courses in library hand or the use of audiovisual equipment. We need to make this available to students, but should not accept it within our alrady limited credit structure.

COMPUTERS IN THE LIBRARY CURRICULUM

1. Courses dealing directly and specifically with computers, their hardware and software, and their application to library and information services; and
2. General courses, such as Technical Services or Library Administration, which deal indirectly with computer use must be introduced.

The programme should be designed to make the professionals well-versed in library techniques and processes. Introduction to computers would enable them to apply computers to the management of their services.

MASTER'S DEGREE COURSES

Thesis or dissertation writing should form a major part of this course. It should be the basis for evaluating post graduate training reference service, international economic information management and user behaviour should draw special attention. A social survey is required prior to the beginning of the thesis or dissertation.

RESEARCH

Essential to changes in curricula is a solid base in research. The tendency in research in librarianship and information science is to examine any problem from the perspective of the professional rather than addressing our research from the perspective of the user. If we want to understand what value users place on libraries, it might be useful to sit down and talk at length with a series of users and non-users and then analyze the content of these discussions.

We assume a number of things about the ways our audiences use collections, but we do not really know a patron's degree of satisfaction in the individual use of materials. Our research has been dominated by quantitative studies organized in a logical fashion. We must begin to consider such aspects as response based.

Too often we concentrate on collecting data to prove what we have already determined rather than collecting data and then analyzing that data with a more open mind to see what that data tells us.

Research must be undertaken to explore the nature of cognitive structures in all types of catalogues and databases. The conceptual frame encompassing the totality of information and equal access to that totality is not being studied.

Interdisciplinary and interconnectedness should be characteristic of study programmes and research. Barriers of isolation should be thrown down and new linkages forged. Research should be soundly based in theory and objective in reporting. At this stage I would like to suggest that special topics in methodology be taught with an inter-disciplinary focus at both the Master's and Ph.D. levels.

Structure of courses of study should be adjusted to meet social de-

mand. It is essential to train qualified graduates for economic development work, and more units of technology and foreign language should be added, while continuing to emphasize knowledge of library and information science. Courses should be designed with future employment in mind, and advanced textbooks should be written and published nationwide. In addition to classwork, students should receive more opportunities to attend lectures off-campus, to obtain the most upto-date information available.

Educational conditions should be greatly improved and constantly evaluated. Students should have better access to computers and language learning machines.

It is important that a national plan be formulated that clarifies the divisions of specialization in LIS. Programmes in different institutions should develop emphasis appropriate to their faculty resources, for maximum benefit.

Graduate students should be encouraged to combine theory with social practice. They should be offered the opportunity to participate in projects or other practical work during the course of their studies.

A flexible policy for employing graduates should be developed, with more opportunities for employment offered. New policies should satisfy both employee and employer.

LIBRARY EDUCATORS

Computer technology has greatly influenced with development of profession worldwide. Many library/information science schools are striving to make computer technology a strong component of their curricula. Therefore, continuing education programs in the form of workshops and training courses need to be organized for library educators in India. In any profession relevant experience is considered an important factor in determining the quality of the professional. The requirements of a library/information science educator comprise both teaching and work experience. A good library & information science educator is supposed to be experienced both in teaching and in practice. Continuing Education programmes in the form of workshops and training courses need to be organised for library educators in India. In any profession relevant experience is considered an important factor in determining the quality of the professional. The requirements of a library/ information science educator is supposed to be experimental both in teaching and in practice.

We should also incorporate teaching styles that correspond more directly to the learning styles of our students. Cooperative teaching both within the classroom and through the use of the Internet as a teaching tool could be introduced.

Two or more faculty from different institutions and several practitioners could be asked to respond to student input. Professional educators should also revitalize their relationship with alumena and the practising professional community to increase connectedness to practice.

EDUCATIONAL POLICY

The establishment of a policy for education is the most important goal to be accomplished by library science education in India. Basic guidelines on professional education must be established that can be used as a means of assessment by library science programmes at different levels. A policy on computer training for librarians must be formulated after assessing accurate knowledge of the job market and of the information needs of the users in accordance with the overall scientific, technological and educational policies of the country.

Basic directives should suggest minimum resources needed for adequate operation of programmes (faculty, administrative staff, equipment facilities) they should stimulate regular evaluation of programmes as well as promote continuing education and research in the area.

CONCLUSION

Finally, I would like to make certain recommendations hoping for a positive response :

1. I recommend the establishment of various study groups. We may move into an interdisciplinary mode and should actively seek out colleagues in other disciplines. Cooperatively plan research and implement courses and workshops.
2. Professional educators should establish relationship with alumena and the practicing librarians. Remove the barriers of isolation and create new linkages.
3. Develop professional culture and ethics.
4. A general framework of the teaching model for Library and Information Science Education in India should be designed. A national plan be formulated that lays down the divisions of specialization in LIS. The reform of the teaching model can help eliminate and replace out-of-date teaching content.
5. Educational environment should be greatly improved and constantly evaluated. Students shuld have better access to computers and language learning machines. Specialized courses on computer science and library automation should be introduced.

6. Besides graduate level programmes, two years Master's level programme leading to an M.A. or M.Sc. degree be initiated. The master's programme should consist of course work, a thesis and require proficiency in a foreign language. Students should be encouraged to write academic articles and participate in Seminar/Conferences.

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RESEARCH FOR SUSTAINABLE INFORMATION INFRASTRUCTURE DEVELOPMENT

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Abstract Discusses Societal Shift and Paradigm Shift in information work that has brought now challenges before librarianship. Opines that only continuous holistic research can enable library and information professionals to cope with these challenges successfully. Discusses status of L & Isc research in India highlighting its drawbacks. Suggests five parameters viz., users, technology, subject domain, services, and society, to be taken care of while conducting research so that it can contribute to the formulation of theoretical propositions on the one hand and provide viable solutions to practical problems on the other.

INTRODUCTION

Control over information is key to the development of a nation. All government policies and decisions are based on the information available with them. And it is in this context, information has been the focus of policy planners and administrators all over the world. The distinction between a developed and a less developed country today, perhaps, lies in the control over generation, dissemination & accessibility to information and development of a strong information infrastructure. Traditionally, libraries and information centres have performed the role of basic information infrastructure. With the development of technology new media, methods and practices have entered the realm of information infrastructure, e.g., the development of computer and communication technologies have added a totally new perspective to the information infrastructure with internet and WWW. Due to these new added dimen-

sions into information arena, the role of library and information (L & I) professionals has also changed considerably. Therefore, it is essential to discuss and zoom in issues of concern to sustainable development of information infrastructure. Let us discuss the role of L & I professionals in this changed scenario.

PARADIGM SHIFT

There has been a societal shift (Table 1) from the industrial age to the information age. This societal shift has influenced emergence of a new set of professionals who can contribute to organizational effectiveness. Information work has also undergone a paradigmatic shift, in its domain from library science to information science (Table 2), keeping pace with the social change. Another significant feature of this aspect is that while library science *focuses* basically on documents, information science *deals with* information contained in any kind of document[3]. Perhaps, this paradigm shift is a major indication of sustainable development in our field. But in Indian Context the Shift has perhaps, not been taken care of through research, education and training.

Industrial Age	**Information Age**
Standardizaiton	Customization
Bureaucratic Organiation	Team-based organization
Centralized Control	Autonomy with accountability
Adversarial relationships	Cooperative relationships
Autocratic decision making	shared decision making
Compliance	Initiative
Conformity	Diversity
One way communication	Newtworking
Compartmentalizaiton	Holism
Parts oriented	Process oriented
Planned obsolescence	Total quality
CEO is "King"	Customer is "King"

Table 1 : Societal Shift[1]

Library Science		**Information Science**
Social	Theory	Technological
Service	Practice	Productivity
Egalitarian	Motive	Profit
Services	Application	Efficiency
Libraries	Scope	Anywhere

Table 2 : Information Work - Paradigm Shift 2

This has resulted in *crisis of identity* for traditional library professionals[4]. Sethi has identified challenges before librarianship in the context of sustainable development. These issues besides crisis of identify are : information explosion; demand for information by users; and resource crunch. In fact, the phenomenon of information explosion is such that, according to an estimate five lac pages are added every minute to the existing core of man's knowledge and a sixty percent increase in this recorded knowledge and a sixty percent increase in this recorded knowledge has been predicted between 1976 and 2000 A.D.[5] Naisbitt[6] pointed out that 6000 to 7000 scientific are written each day and in science and technology information increases 13% each year doubling every 5.5 years. The information explosion combined with demands of increasingly aware users and depleting budgets creates huge pressure on information professionals who are custodians of the information infrastructure. We strongly believe, research is the key to sustainable development at times of turbulence. Therefore, we present here a case for integrated research programmes based on practice leading to the development of theories that will have the way for sustainable information infrastructure development.

RESEARCH

Research is primarily the process of systematic scientific inquiry for new knowledge. The essential features of research as outlined by Neelameghan[7] are :

i) Research helps in continuous development of a discipline;
ii) Research endows a discipline with the ability to utilize the knowledge generated in other disciplines;
iii) Research makes use of scientific method, etc.

RESEARCH IN LIBRARY AND INFORMATION SCIENCE

"If librarianship aspires to become a profession, it should depend upon research to dvelop its knowledge base and its theoretical framework."[8] The importance of research in L & IS had been emphasized by Ranganathan as early as in 1967 when he identified factors compelling research in library science. These factors are :

"1. Social pressure leading to large number of readers.
2. Publication pressure leading to large number in books and periodicals.
3. Population pressure demanding pinpointed, exhaustive and expeditious service to specialist readers;
4. Pressure of national and international economy leading to the service of micro subjects embodied in micro documents, forming only articles

in periodicals or only chapters or even paragraphs in books; and

5. Pressure of standardization and simplification in matter such as the size of books, receptacles for books, library housing, library fittings and furniture, preservation of the text books and articles and diverse library techniques"[9].

Similarly Krishan Kumar and Sardana emphasized the need for research in L & IS in the following words :

"(i) Changes due to socio-economic plans of the country in the information environment.

(ii) Increased rcognition of information as an important national resource. In order to utilize it effectively national and international information networks are being set up. These would require manpower and research into information systems.

(iii) Advancement of the discipline of L & IS. Research programmes can help to sharpen the existing tools and techniques and design new ones. They also help to train personnel who can take up research for the same purpose.

(iv) Finding of the solution to problems faced in the running of the libraries."[10]

STATUS OF L & IS RESEARCH

Organized research in L & IS started in India in 1948. Since then more than 250 Ph.D. degrees have been awarded in L & IS by various Indian universities[11,12,13]. At present about 38 universities offer research programmes in L & IS in India[14]. Annually about 300 periodical articles are published in India besides a good number of text books that come up in the market. However, research is not assimilated in text books and other documents[15]. In a study of ILA conference literature, Mishra and Sunil Kumar[16] found that most of the contributions are descriptive in nature without methodological vigour. According to Lahiri[17] research in L & IS has similar drawbacks as that of other social science researches. Some drawbacks identified by him are : Lack of proper theoretical background; use of statistical techniques without justification; absence of appropriate sampling procedures; selection of tools of Western origin; Use of questionnaires of 'dubious' value; waste due to research in parallel, etc. Research in L & IS is also crippled due to non-availability of sufficient research grants; cooperation to interested professionals; and absence of a research culture normally demonstrated through non-response to questionnaires[18]. Thus, through the need for research was identified long back, and research efforts also started simultaneously, the profession has not witnessed significant research contribution towards development of a theoretical basis barring the ef-

forts made by Dr. S.R. Ranganathan. Now, let us look into the parameters of research and need for integrated approach in this direction.

PARAMETERS OF RESEARCH

Research for the development of information infrastructure has five parameters : Users; Technology; knowledge/Subject domain; Services; and Society. As such, for research to be pragmatic and useful, it has to take these parameters into consideration. The inter-relationship amongst these parameters implies that research needs to the carried out in a holistic perspective which will be useful in day to day practice and also be helpful in development of a theoretical framework, thereby, forming a triangle of research, practice and theory. Usually, research in L & IS is criticized for not having practical orientation[19]. But "the idea is either based on the assumption that using research results should be essy, like spoonfeeding, or on the assumption that all application is instrumental"[20]. In fact, initially the influence of some research may be little, but with the passage of time as research proliferates, their utility for decision making in day to day activities also increases.

THEORY, RESEARCH, PRACTICE

Theory is something that eventually can be reduced to a phrase, a sentence or a paragraph and which, while subsuming all the practical research, gives the foundation on which structures of need, purpose and administration can be erected"[21].

The role of theory is to enable prediction and explanation of behaviour; give the practitioner understanding and some control in specific situations and attempt to explain why certain events occur, through an internally connected and logically consistent propositions and relationship.

Research involves methodologically reliable and valid steps that result in explanation of relationship amongst variables on an empirical basis. The results of research are replicated, retested and applied in practical situations. By modifications, alteration and adjustments through research based evidences the theoretical propositions get established leading to development of theoretical framework. Thus, theory development is a continuous and dynamic process as depicted by Ranganathan through the spiral of scientific method[22].

Practice looks towards theory as well as research for solving day to day problems. Theory guides practice in arriving at solutions to unconfronted issues through logical and consistently sound principles. However, research attempts at providing ad-hoc solutions to certain issues which existing theory

does not provide a readymade solution. These solutions have the potentiality to become theoretical propositions with the passage of time.

CONCLUSION

In this paper, we have emphasized the need for holistic approach to research taking into consideration the paradigm shift in information work and the related social change. Research has to be consistent with the need of the time but it should culminate in development of theory. In this respect we have identified five parameters which sould be taken into consideration in the theory-research-practice triangle (Fig. 1) leading to sustainable development of information infrastructure.

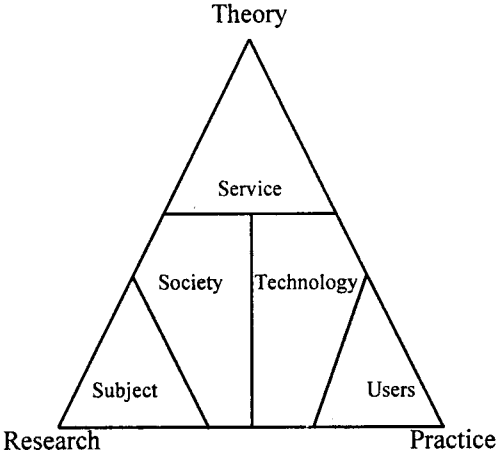


Figure 1 : Theory Research Practice Triangle

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SUSTAINABE DEVELOPMENT AND LIBRARY EDUCATION

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"Discusses the meaning of sustainable development and its relationship with librarianship. Stresses on the need of sustainability in library and information services with particular reference to library education. Mentions about the significant achievements, problems and remedial measures of library education in India."

SUSTAINABLE DEVELOPMENT

By sustainable development we mean to keep from falling, sinking or the like, as a rope sustains a weight. It is the `development that can be continued either identinitely or for the implicit time period of concern.

The idea of `sustainable development' was used in the Brundtland Report, sponsored by the World Commission on Environment and Development created by the United Nations in 1983 and chaired by Mrs. Gro Harlem Brundtland, Prime Minister of Norway. The title of the report is "Our Common Future". The sustainable development has been defined in this report as `Paths of human progress which meet the needs and aspirations of the present generation without compromising the ability of future generations to meet their needs".

In the present day world the concept of sustainability is applied in every field/subject. We, the librarians, also should apply the concept of sustainable development in our profession, i.e. librarianship.

There is a general concern all over the world, shared and echoed by the United Nations that our current organization of society and the its organs cannot be maintained in future unless it is based on sustainable development. This concern applies to the institution of librarianship as well.

As the theme of the Conference is `Sustainable Library and Information Services' and it has been coined to express the concern of librarians towards the application of precepts of `sustainable development' in the field of librarianship. It stands for the totality of philosophy, principles and practices that ensure the continued gorwth of stock, staff and services in libraries.

LIBRARY EDUCATION

The success of sustainable librarianship, particularly in the context of library education requires some suitable re-medial measures. Today we are under a cloud of ui certainty regarding library education and its sustainability is suspected.

From time to time the measures of higher education reforms applicable to all types of higher education have been suggested and library and information science education is no exception. All the measures, should lead to the same destination, namely, achievement of excellence in higher education so that future system becomes really meaningful and relevant to the emerging challenges of the society which is poised for a big leap in the 21st century.

2.1 Significant Achievements

Library and Information Science has been recognized in the country as a university subject for study and research at par with any other traditional subject largely on the basis of its intellectual content. The recognition of the subject as a full fledged discipline is perhaps the most significant achievement not only for the library and information science education, but for the whole profession as such. The increased research activities in the field have raised the status of the subject in the eyes of the scholars and the public. Except in a few cases, most of the library schools are now manned by Universities in this discipline have also enabled the librarians to get enhanced status and salary. As a consequence, the library schools are now able to attract good talents in the faculty as well as student community.

2.2 Problems

In spite of these happy developments, library and information science education in the country cannot be said to be moving in the desired direction. Its growth though quantitatively impressive, has been haphazard and unplanned resulting in some serious problems which require immediate attention. The problems are (i) porolifering number; (ii) degradation of degrees; (iii) lack of infrastructure; (iv0 lowering of standards; (v0 differences in course contents; (vi) lackuna in training.

The author of the present paper was able to identify 116 institutions (including Universities, colleges, polytechnics, associations and other centres) which offer training in library and information science at various levels. Together they produce more than 3000 B.Lib.Sc. and M.Lib.Sc. degree holders annually. Every year a few universities start new library science courses and then add M.Lib.Sc. M.Phil. and Ph.D. courses after a few years. Over and above

the university level library education, a large majority of the state library associations and several other professional associations conduct short term courses. In addition, there are a few other universities conducting B.Lib.Sc. and M.Lib.Sc. courses through correspondance. Proliferation at this speed and level has naturally resulted in sacrificing the quality of the training programmes. Three is no system of accredition of these fast changing professional courses. No individual or organisation - public or private - has raised alarm at the colossal wastage of resources in churning out this huge manpower, a large section of which are frightfully underemployed or unemployed. The situation is likely to worsen with every passing year if some drastic step is not taken immediately.

Up to the end of 1999 a major part of the Indian Library systems would be using computers in most of their library operations and also establish closer linkages through local Area Network (LAN) and global communication networks. These are inevitable. The most satisfying feeling is that today majority of the professionals are aware of these forthcoming changes and a very small section are consciously making moves to achieve this goal.

This future scenario would enforce us to seriously gives a second look at the existing library education programme in India. It must be accepted by all those responsible for professional education of a wider responsibility than merely producing practioners for the situation as it is today; a professional school must also identify future professional trends and needs and propose practitioners to meet them. In other words, it should lead rather be a reflection of it.

There cannot be two opinions on the view that today we have too many institution producing too many stereotyped library professionals, who may not be fit enough to meet the future professional challenges. Already a large section of them are waiting to get an opening in the job market. This situation is likely to worsen every year if the present trend continues.

2.3 Remedial Measures

Presently, the conditions which we are having in India regarding the library science education, there were similar conditions in USA which led Charles C. Williamson to recommend accredition of library education in USA in order to maintain high academic standars. If we want to improve the quality of library education, then some way must be found to control and standardize library education. In India accredition of library schools has ben discussed in several conferences, seminars and meeting without reaching any positive conclusion.

It is a serious issue requiring careful study if it is suspected that the academic qualifications issued by one University entall much more (or much less) in the way of academic rigour and quality of teaching input than those in

another. Whre academic standards and teaching quality are higher than is strictly necessary for a given level of qualification no real harm is done but where they are lower, great mischief can be the result.

To hold a B.Lib. Sc. or M.Lib.Sc. from University A ought imply a aroughly similar standard of attainment to that of universities B. C.D. etc. If it does not, then the whole university system in a country is in danger of becoming discredited in the eyes of the outside world unless some clear system of certification of the standards of library schools can be devised to distinguish those schools which attain certain minimum academic and professional standards from the rest.

The best approach to achieve standardisation of library and information science education would be to apply accredition. Accredition refers to approval or recognition of programmes of education and examinations, conducted by institutions, on the basis of certain laid down standards, by an outside organisation having high standing.

Regarding the Accrediting Agencies, it is a matter of wide discussion to select a body which may be able to do the accreditation. While collecting the views by the author regarding the accrediting agencies, the various agencies were recommended as accrediting agencies. The agencies recommended were (i) University Grants Commission (ii) Indian Council of Accredition for Library and Information Science Education; (iii) Indian Library Association; (iv) National Committee Consisting of members from faculty, professional associations, libraries; (v) Association of Indian Universities; (vi) Indian Association of Teachers of Library and Information Science; (vii) National University of Library and Information Science; (viii) Inter University Board; (ix) Association of Library and Information Science Schools.

CONCLUSION

In order to have sustainable library and information science education, we have to take the steps in order to have the uniform standards throughout the country, no doubt, there may be a little variation due to the local needs. We should not say that librayr education in India is heading towards uncertain future, but there are certain challenges before us. This is good because challenges carry within them the seeds of opportunities as well. Sustainable library and information services offer the option for converting the challenges into opportunities to move ahead rather to surrender to the challenges.

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DO LIBRARIES NEED MANAGERS TODAY?

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Abstract The paper identifies the importance of the managers in an organisation and discusses the need of the managers in the non-profit making organisations called the libraries. It stresses on the curriculum development, internship and in-service training by which the skills and abilities of the library managers could be improved so that they can stand the stress and strain of the ever changing scenario of libraries.

The last word on how we may live

or die

Rests today with such quiet

Men, working too hard in rooms

that are too big

Reducing to figures

What is the matter, What is to be done.

A manager is an integral part of the organisation, not because he is conservative than others but because he tends to dominate the field as a master. He does the same function for an organisation which the brain does for the body. The success or failure of any organisation depends upon his capabilities to plan, organise, direct and control it. He acts as a leader of the organisation, who identifies relevant and salient values and direct the forces towards goals that reflect these values. He is like a physician who understands the problem and take remedial measures based on the diagnosis.

The managers perform the same function regardless of the type of organisation. The only difference among the work roles of various managers in different organisations,m depends upon the differences in their objectives, amount of leadership and the complexity of situations. The chief of police is a manager, as is the librarian, hospital administrator, Director, Principal, etc. They all have the common responsibility of using the resources at command, for achieving the stated objectives effective and efficiently.

For long, library management seems to have meant little more than knowing what tasks had to be performed in libraries and being able to do so. But this concept changed with the ever changing context of libraries in relation to new services as a result of the electronic technology. Recent changes in society and dissemination of information are making new and more difficult demands upon our libraries. The world of knowledge has become the world of information and the information overload of this expanding universe of knowledge has contributed to the proliferation of system and networks. Computers have entered the libraries to assist in cataloguing, classifying, circulating, retreiving the information and the libraries have become the information centres. As a result, the custodian aspect of the librarians role is now really only a small paaart of the work.

Much more important are other activities ranging from acquiring the reading material to exploitation of their contents, literature surveys, advice and problem solving. As the librarieds are becoming increasingly complex and the monetary resources required to manage them continue to diminish, the demands on library managers are becoming more intense. Pressures for such changes, the demands for new technologies and declining resources have had their impact. The response of the libraries should be like that of most organisations to add more specialists and managers to the organisations. Since the managerial needs of libraries are increasing, they require not only more managers but better managers who are skilled in this activity and knowledgeable in its most up-to-date theory and practice.

Library managers today, must be able to articulate an understanding of theories and practices of management and leadership, including planning, personnel administration, analysis, decision-making and evaluation skills, which are necessary to provide library and information services. The library managers are expected to " have a first rate mind with problems solving abilities; a solid undergraduate preparation, with emphasis on training rigor; concrete evidence of managerial abilities ; and an intellectual commitment to research librarianship combined with the abilities to speak, write, interact, plan, analyse, and budget well."[2]

As the librarianship today has undergone a seat of change in every espect of information management. The librarians have to learn all about the

management theoies. The management scientiest have had their chance to show what they can do? Now it is time for the librarians to assert their primacy in the art of library management Library manager's chances for success will be enhanced by periodic education or training, in some specific or technical aspect of managerial work, or by an updated overview of the field of management.[3] This requires :

I) Inclusion of management Science in the library and Information Science curriculum.

If the library management are to perform their work effectively, they must be taught as to what Scientfic management constitutes. The librerians do not have nay formal training in library management so as to have an accurate perceptin of their role-requirements. The courses which area presently being offered at the library schools are not sufficient for the preparation of library managers. What is being taught is merely organisation and administraition of various types of libraries. A little bit of classical theory of management as given by Fayol,[4] i.e., planning, organising, coordinating, commanding and controlling is however taught as a part of this.

Such theories of management (although classic) are considered outdated because of the complex and changing nature of the organisations. Similarly, the libraries have also become comples organisations with technological information and human dimensioins and deserve to be handled accordingly. The present courses and syllabi need to be modified and streamlined to include specific management feature like effectiveness, marketing, motivation, goal-setting. Personnel management, technology and its application, communication skills, leadership skills, conflict resolution skills, resource allocation skills, information processing skills and their evaluation, etc.. This will help them to become aware of th problems they will face when they hold such positions.

II) On-the-job library training :

The formal classroom education is not enough to trail librarians to function effectively in the changing environment. Internship programmes in the field of library and information science is the requirement of today. Such programmes are quite common in the field of law, medicine, management and, engineering, which provide the future lawyers, doctors, managers, engineers practical experience to face live nationals which as students they might not have visualised. Similarly when the products of LIbrary Schools join their job, they face a number of difficulties. There is a growing feeling that the present-day library managers are not well prepared educated and to stand the stress and strain of their jobs.

As information professional, librarians have to process the information exhaustively and speedily, so that they can meet the present demands of emerging information society. Such programmes will enable them to develop the required skills and the confidence to handle things individually.

III) Inservice training in management

Learning is a continuous process. Continuous learning builds on and updates previously acquired knowledge. Skills and attitudes of the individuals. For this, the inservice training should be given. Librarians must develop and grow on the job. Earlier, the librarians were satisfied with their formal education, which provided them with the basic skills of book selection, classification, cataloguing, reference work, etc. In view of the changing role of librarians in the fast developing information environment, updating of knowledge and skills should be a continuous process. Each and every library manager must get such an opportunity. Such programmes should provide knowledge about budgetary control; information procesing, online searching, multimedia, library networking, etc. It should include more of participative management to relosve some real-life managerial issues. Such discussions will reveal how they make decisions, communicate with staff, set priorities, handle pressures, etc. This will test their flexibility, judgement, ability to analyse decisiveness, stress and tolerance etc.

In the changing scenario, when computers, are being used in accesing and servicing the information the librarians need to have a record look an the present curriculum, so that the future professionals are prepared to accept to accept the challenge ofthe changing environment. We should channelise our energies and reasess our past performances and carry the SWOT analysis in the Present and draw comprehensive plans for the future to become effective library managers of the 21st century.

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SUSTAINABLE LIBRARY / INFORMATION MANPOWER DEVELOPMENT AT THE UNIVERSITY LEVEL : A CASE STUDY OF MANGALORE UNIVERSITY.

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Abstract The paper discusse the present status of the Library / Information manpower development in India. The new technology like Digital Video Disc (DVD), digital library, information ighway etc. are described. The LIbrary / Informatin manpaoawer development programme at Mangaloare University is discussed. The manpower development at research level is explained in brief. The suggestions are provided for the need based Library / Information mapower development.

INTRODUCTION

The library and information science is facing the onslaught of information technology. The libraries and informatin centres are no more confined to the providing of books and periodicals to the users. They have to render a number of new services using the latest technology available. The manpower to manage the libraries and information centres using the information technology, communication technology and some other new technologyes has to be developed. The needs of the present day libraries have to be kept in mind. At the same time the future needs of the libraries and informatin centres have to be considered.

NEW TECHNOLOGY/CONCEPTS AVAILABLE

The electronics and information technology has made tremendous changes in all walks of life. Vittal says, "Electronics and informatin technol-

ogy are significant and pervasive in our lives at present. They are likely to influence the future even more strongly" [1] The electronics combined with computer technology and communication technology are going to change the type of services the libraries and informatin centres are now providing to the clients.

The following are a few new technologyes which would be available for use very soon.

a) Digital Video Disc (DVD)

Compact Disc (CD) is based on the optical storage technology. The advanced version of the CD is the Digital Vidio Dsc (DVD). The DVD is based on the optical storage technology. The CDs have made their begining and are used in different libraries and informatin centres.

Alan E. Bel l says that, "Compact disc whicl. was till recently considered one of the greatest achievements in terms of data storage, will be completely overshadowed by an equally sized Digital video disc (DVD) which can hold upto 20 times more information than the CD."[2] It has two layers, one on each side and its capacity is about 10 giga-bytes of characters. Frank Vizard observes, "DVDs the CD-size discs has enough storage capacity for a full-length movie. The picture quality of DVD surpasses anyting yet developed, including laser disc. DVD has a few other nifty features, including multiple audio tracks and the ability to vary the aspect ratio between standard pan-and-scan and letterbox-size TV fare. And since the movie is in digital form, you can access any point in the film instantly. DVD players can also play music CDs."[3] All the libraries and information centres which are providing the services using CDs and CD-ROMs will be able to provide the services using DVDs without much investments.

b) Digital Library

All over the world a traemendous progress has been made in the field of electronic data processing. A concept of digital library is going to be a realaity. The main afactors which contribute to this are the eletronics, computers and satellite communication. The library networks for metropolitan cities in India have already been established like DELNET, CALIBNET, PUNENET etc. In Karnataka, the Mysore library network (MYLIBNET) is being established. Many networks for the metropolitan areas in India are in the formative stages. Science correspondent of the Hindu newspaper says that, "The digital library would be used as a platporm to generate course material for students. Since the digital liaabrary software can accept multimedia material, lectures, talks and presentation, combining visuals, sound and even video, can be provided".[4] The concept of digital library is going to be a reality in India within about ten year period.

c) Information Highway

It is accepted that there is an information explosion in the world. There is going to be fast growth of knowledge based industries. The editor of th Hindu newspaper says, "The Informatin Highway will influence a whole lot of activites such as education, health, culture, travel and administration."[5] The efforts of Govt. of India are on to envisage this concept.

d) Internet

The internet is the most outstanding technological development of this century. It is not fully expoited in India. This is useful to every business-man. Rajashekhar says "With Intranents (use of Internet technology within institutional and corporate networks) catching up with university campuses, we are beginning to see web sites being set up at department levels. Academ-ics have taken actively to publshing on these sites and experiment with new technologies."[6] Many universitie and other academic institutions have been using the internet facility in India.

The libraries and information centres are bound to use the new tech-nology. For this purpose a thorough knowledge of computers is very essential. The new technology/concepts so far explained stress the need to develop the required library/information manpower. The need has to be met by the schools/ institutions of Library & Information Science which develop the manpower.

PRESENT STATUS OF MANPOWER DEVELOPMENT

At present there is a need to continue to teach the traditional and core subjects like the organisation, management, informatin sources and services, classificatin and cataloguing, etc. At the same time it is necessary to introduce new technology viz., informatin technology, the communication technology, etc. For a large number of libraries in India even today the manpower required is that with the knowledge of traditional techniques and skills. For a good number of libraries and information centres the manpower trained in new tachnology alongwith the traditional skills is required.

The following are the existing levels of library & information Science education in Karnataka:

i) Job oriented diploma course for those who possess SSLC.
ii) Diploma in Library & Information Science for those who possess PUC.
iii) One year Post-graduate Bachelor's degree in Liabrary & Information Science for the degree holders.
iv) One Year Post-graduate Master's Course (MLISc.) for the BLISc. de-gree holders.

v) Two Years MLISc. Course for the graduates.
vi) M. Phil in Library & Information Science for the MLISc. holders.
vii) Post-MLISc Diploma course for the MLIsc. holders.
viii) Doctorate (Ph.d.) degree for the MLISc holders.

MANPOWER REQUIREMENT OF THE FUTURE

The semi-skilled jobs like the issuing of the books in the counter, replacing of the books etc., can be done by the diploma holders. For all the remaining jobs where a technical skill is needed a person with Master's degree i.e. MLISc. is required. For the college librarieans & asistant librarians in the universities the MLISc. degree qualification is required. For the library assistant positions in the colleges and the universities the diploma in Library & Information Science qualification is sufficient. The requirement of one year BLISc. graduages is very less.

After conduction a Library & Information Science education for about 60 Years in India in the universities, and about 35 year of Lirary & Information Science education in the Universities in the Karnataka State we have before us an idea about the increasing significance and improtance of the information technology concepts, electronics, communicatin etc. The staff formula suggestedby Dr. S. R. Ranganathan needs to be modified in the light of the technology available and used at present in the libraries and information centres.

EFFORTS AT MANGALORE UNIVERSITY

The Mangalore University started the one year BLISc. degree course in 1982. In the year 1990 the one year MLISc. course was started. The assessment of need for one year MLISc course was done by the author. It was found out that most of the librarians possessing BLISc. course had completed the MLISc. course through external examination or distance education mode. Hence in 1996 the two years integrated MLISc. course was started. In the year 1997 the one year BLISc was to be discountinued. This was a structural change in the course.

The curriculum of BLISc. course and MLISc. course was drastically changed in the year 1995. The information technology components have been added for theory and practice. The papers related to computer basics and applications were added. The students get a thorough training of use of computers for library applications. The computer facility has been made available by the University Grants Commission (UGC). It is a shared facility with the Department of Statistics of Mangalore University. For the two years MLISc. course, apart from the traditional subjects, the following papers/practicals have been

introduced.

MLISC. Previous	-	Computer Basics theory
MLISc. Previous	-	Computer Basics Practical
MLISc. Final	-	Computer Applications theory
MLISc. Final	-	Computer Applications Practicals

For teaching purpose for the first two years i.e. 1995-96 and 1996-97, the help of persons having computer knowledge from other departments was sought. One staff mamber of the department was reequipped with the computer knowledge. From 1997-98 the computer papers have been taught by the staff member of the department.

RESEARCH

There is a need to have a sustainable development of manpower at the research in LIbrary & Information Science although it was started in 1950s there was not much progress up to the end of 1960s. Since begining of 1970s the research in LIbrary & Information Science in India is progressing fast. In the 1960s the profession was not having many recognised guides to supervise the doctoral work. Hence the research was conducted in the sister departments viz. Departmentof educatin, law, history economic etc. The problems pursued by the researchers were also related to both the branaches i. e. the Library & Information Science and education, law history, economic etc. Since 1970s onwards the research in Library & Information Science is conducted in Library & Information Science schools at the universities. These researches were by and large confined to Library & Information Science field. Now the research needs to be addressed to the areas related to the information technology, communicatin technology, fibre optics, optical storage medium, on-line information retrieval etc. This can be considered as an interdisciplinary approach to research.

For a sustainable development of Library & Information Science manpower at research level programme the need has arisen to pursue the areas related to information technology, communicatin, computer technology etc..

CONCLUSION

If we examine the review publications in Library & Informatin Science like annual Review of Information Science & Technology (ARIST) and Advances in Librarianship, it is interesting to note that the Library & Information Science is no more a pure discipline. It has become an interdisciplinary science. The moment any discipline becomes an interdisciplinary subject it needs the help of other branches for its healthy development. It view of the

new technology available there is a need for sustainable Library/Informatin manpower development at university level.

Based on the points discussed in the papper, the following suggestions are provided for the planning of Library/Information manpower development for India:

i) A study has to be conducted on an all India basis with the following objectives:

a) To assess the type of service the libraries & information centres are experted to provide now and in future.
b) To assess the availablity of funds for Library & Information Science education.
c) To assess the new technology available for libraries & informatin centres.
d) To work out a new staff foumula for libraries and information centres.
e) To assess the need for the restructuring of Library & Informatin Science education at all India level.
f) To assess the possible co-operation, as a temporary measure till our ow trained faculty is available, from other branches like computer science etc.

ii) Based on the study the courses in Library & Information Science have to be restructured in India.

iii) The efforts should be made to get the funds for building up of the infrastructure required for the Library & Information Science course having new technology in their courriculum.

iv) Wherever required the reorienting of the faculty of the Library& Information Science schools have to be done.

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TEACHER'S ASPIRATIONS IN SHAPING THE FUTURE COLLEGE LIBRARIES : A SURVEY

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Abstract The paper describes in brief about "Role of Educatin and Higher education in socio economic development". Briefs about Reading Habits among the college teachers. The role played by the library in uplifting the reading habits of college teachers. The aspirations and expectations from the library by the teachers of college will set a new trend in the organisations and library services to be rendered. A survey is conducted and analysed, the data collacted, giben the detaild finding and suggestions made by the respondents in shaping future librar and library services.

INTRODUCTION

Educatin plays an very important role for the one's own development and national development. For that Govt. of India launched the national mission to achieve the universalisation of education by adopting National Educational Policy of 1986. This will help in increasing an awareness amongst the society by apropriate methods of teaching and teaching aids.

Teaching community is the most important component determining the quality of education and socio economic development of the country. "Burzen" rightly says that "The young learnears is by nature a little copy cat and the good teacher must turn him into an independant and self motivated thiker who not onoly learn but studies[1]".

Information is indispensible in any human activity aiming at Social and Economic progress and the libraries are the repositories of informatin and knowledge. Every human activities are in the need of information to equip

themselves for the fruitful pursuit of their respective vocation and the libraries will help in procuring, organising and retrving informatino needed by the users. The present study is undertaken to know the reading habits of college teachers. Reading being a life long process if inculcated right from the begining will go a long way in the development of overall personality of a person in general and student in particular. Today the reading has social, academic, economical and survival significance, because democracy of a country can survive when people at large has the reading competence[2].

"Reading habit is the art of personal investigation and self study. It shoudl be followed by self thinking and analysis, and obly this kind of self study with one's own accord can develop into good habit [3].

Hither education is the fast growing education system in India with over 193 Universifies and 7,500 colleges with enrolment of above 40 lakh students. Currently over 2,50,000 teachers are engaged in the system. The functions of the teacher, awake wisdoms through the stimulation of imagination and motivation by the communication of information, knowledge and insight.

Therefore it is essential to conduct studies on Reading Habits of Teadhers of Higher Education, because they are the catalyst between students and knowledge. The libraries should act as the pivot to the teachers in providing up-to-date informatin needed by them, because the shape of the shape of the future libraries depend upon the need of the teachers attached to the higher e ducation.

OBJECTIVES OF THE STUDY

The primary objective of the study is to, i) identify the importance of the library in curricular and extra curricular reading among the college teachers; ii) to know the various factors for developing their reading habits and the role of the library in encouraging their habits, and iii) to know whether the library facilities are a de quate and the library staff is helpful in providing th information needed by the teachers.

SCOPE AND LIMITATIONS

The study is limited to the teachers of the tem degree colleges of Gulbarga city excluding the 12 professional colleges. For collection the required data questionaires are distrbuted to 150 teachers of the ten degree colleges. Out of which 115 (76.6%) teachers are responded to the questionaire.

ANALYSIS AND INTERPREATION OF DATA

The data collected through the questionaire which were distributed among ten degree college teachers has been snalsysed as below:

4.1 Personal Information of Teacher

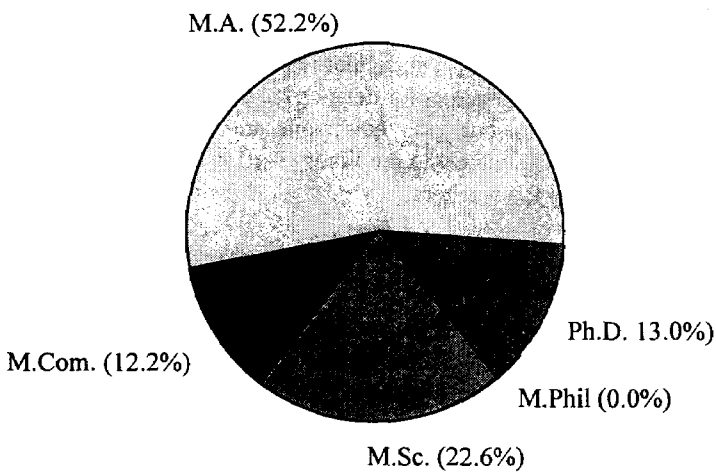
To identify one,s own t raits, is to know the educational background of the teachers, attempted by means of their academic excellance and achievement. The data collected for this is shown in chart 1.

Chart 1 Majority of the teachers are postgraduate in arts (52.2%) followed by science (22.6%), commerce (12.2%) Ph.D. (13%).

Apart from their academic degrees, in order to know their reading habits, their years of experience was also taken into consideration and it has been found that, majority of the teachers have got 16 to 20 years (22.6%) of teadhing experience, followed by 11 to 15 years (21.7%), 6 to 10 years also 21.7% respectively. About 16.5% of teachers have more that 21 years o experience. The data has given in chart 2.

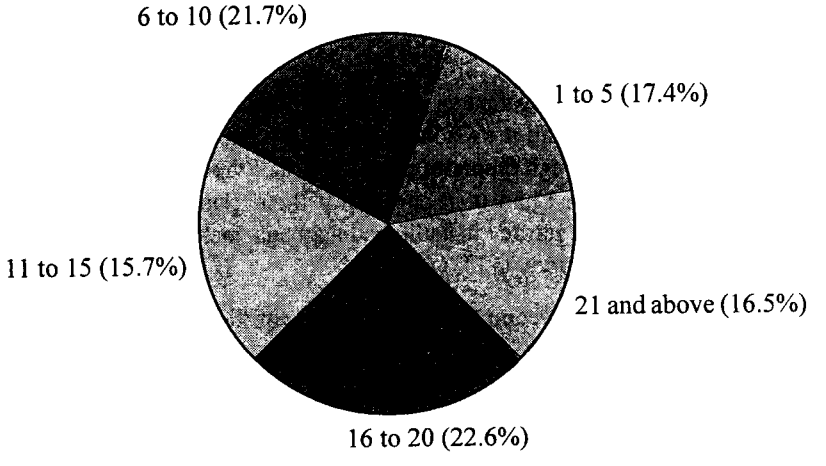
To know the impact of the library in enhancing reading habits of teachers, it has been asked in the questionaire the means and ways their improved reading habits and the data is given in the chart 3. It has been found that most of the teachrs develooped the reading habit by self efforts (47%) followed 21% of the teachers are of the opinion that their parents are the spirit behind their

CHART 1



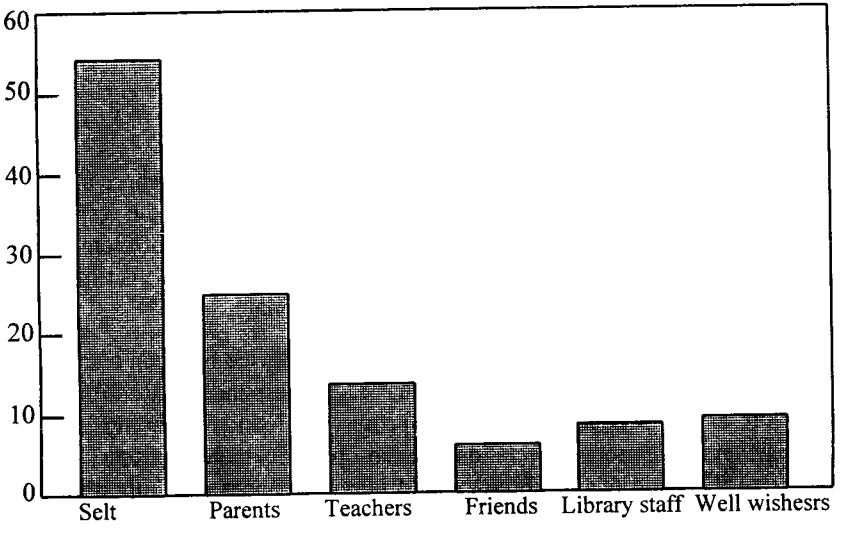
Showing the Educational Qualifications of the Teachers

CHART 2



Showig the Teaching Experience of Teachers

CHART 3



Showing the Development of Readeing habits by teachers

improved reading habits and other respondents have the opinion that their teachers, friends, library staff and well wishers enable & them to develop their reading habits. After having oral discussion with few teachers's has been found that because of the poor infrastructure of the college libraries they are notmuch influented to develop their reading habits.

For identifying News paper & Magazine reading of the teacher the data revealed that almost all the teadhers area in the habits of reading day to day affairs by going through the news papers, 55% of them reads most of the papers, 30% of them read part of it and 6% of them glance main headings. Mauority of the respondents are in habit reading magazines regularly (46.9%), occasionaly (41%) and rarely (11%).

Teachers are well equipped with facilities of the libraries in accomplishing their reaing habits.

Chart No. 4 indicates cent percent respondents are in touch with library regularly. 31.3% of the respondents come to the library for reading the text books, 26.9% of them go through fictions and 7.5% go through poetry's in the libraries. However the other reading materials like drama, biographies, short stories etc. Have also been refered by the teachers. The respondent under study are very knowledgeable to make use of many reference sources to update the knowledge.

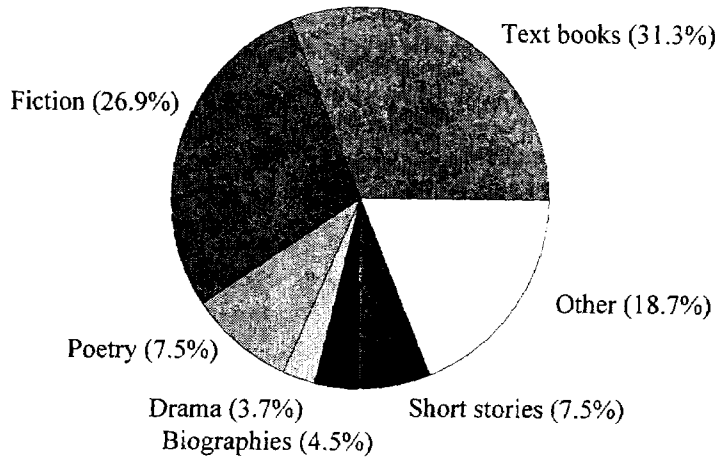
Chart No. 5 indicates that amaong various reference materials, encyclopaedias are highly refered (39.1%) followed by dictionaries (30.4%), Atlas (16.5%). Simulataneously respondents do refere is maps, graphs, gazetteer etc. which are their sources of information.

4.2 Library facilities of college Libraries

The college library is the centrifugal point of college where all the academic activities of college are rooted around it. Almost all the respondents are in very regular touch with the library. However 52% of them visit everyday, 20% of visitors are weekly visitor and 19% of them visit library twice a week and remaining few of them visit ocassionaly.

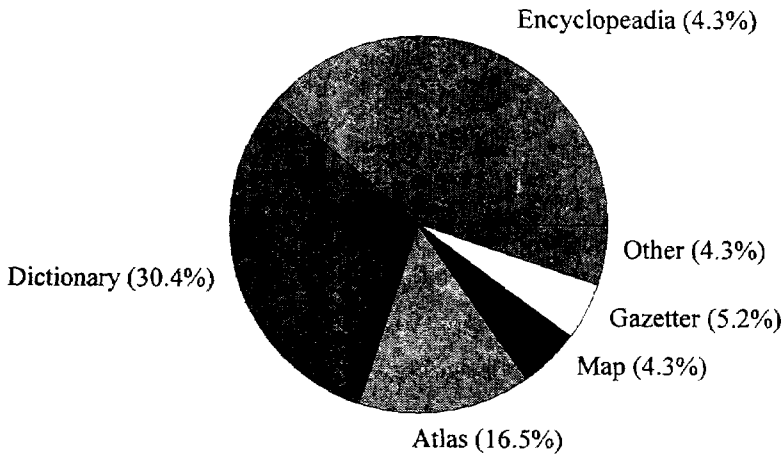
Library staff of th college are like linking device between teachers, books and students. The study indicates that 77.3% respondents are fully satisfied with service provided by the library professionals and remaininig 22.6% of the teachers have more expectations and co-operation have the library professionals. The role of the librarians and library services and important in accomplishing academic pursuit and excellence in the colleges. About 90.4% of the teachers opines that libraries are a must in advancement of study. However few of them (9.6%) are not of that opinion.

CHART 4



Showing Teachers Reading Habit of Books in the Library

CHART 5



Showing use of reference tools by the teachers

Similary 60.86% of the college teachers are fully satisfied and very happy with kind of services rendered by the library and 39.14% of the respondents are aspiring still more information services to be included.

4.3 Finding and Suggestions

Following are some of the major findings of the study.

i) For the development of continuous reading habit, self effort (47%) of the teachers is the predominant then the library professional (6.1%) encouragement.

ii) In respect of news paper reading habit 55% of the teachers go through the most details from the news paper however the remaining are not.

iii) Similarly 46.9% of the teachers are in the regular habit of reading mazazines.

iv) Though cent percent respondents are in the habit of reading books in the library (31.3%) of them are referring ext books; and 26.9% of them are reading fictions.

v) All the teachers are in habit of referring reference tolls, 39.1% of them are using encyclopaedias and another 30.4% dictionary and the least reference tool that was referred by them was maps 4.3%.

vi) 52% of teachers visit library every day.

vii) 77.3% of the teachers are happy with the co-operation of the library staff and remaining 22.7% are not satisfied.

viii) 90.4% of the respondents are of opinion that the role of library is very important is accomplishing studies.

ix) Regarding the library services, 60.86% are satisfied and the remaining 39.4% of the teachers are unsatisfied.

4.4 Suggestions

Self effort is the best effort which is the method followed by the teachers for developing reading habit. However the role ployed by the library professionals is very meagre. The situtaion demands that the librarian and his staff, strie hard for encouraging reading habits among the teachers. Because he knows the traits of the information occurance, its pocurement and dissemination to the teachers more effectively by adopting modern means of communications.

Reference tools are the backbone of college library and their use must be enhanced by means of conducting orientaion.

The librarian and his staff should adopt various strategies to uplift the use of library resources and create an environment, where by every one on the

teacher should come to the library and feels its usefulness in their academic and extra curricular pursuits.

Co-operation and co-ordination among the library staff and teachers should be developed.

Following are the suggestions which are mede by the teachers of various colleges in upliffing the use of library and library services viz.

In colleges the teaching and learning should involve the libraries. The library orientation should be adopted for the use of libraries. Teachers have also suggested for library hours, here students are directed to be in the library for observation and use of library materials pertaining to their syollabi.

Similarly the student should be assigned various topics and the relevant information may be gathered from the library resources. There should be a joint programe between teache s and library staff on encouraging the use of library .esources and services.

Similarly establishment of readers advisory board of the college level to make use of the library and to provide healthy physical environment in the library so that the readers should feel to be a ease.

The teachers have also suggested the use of computer and communication technology in the organisation and operations of library services by use of CD-ROM databases for easy and speedy access to the vast source of information.

The college libraries should be linked with university libraries in local area network pattern in accessing and sharing the sources of each other.

Provision if possible be made for E-mail service for interacting and communicating with each other.

CONCLUSION

Education and higher education are the ground and guiding principle for cultivation of reading habit by means of library. The present practice of class room oriented teaching should modified into classfoom cum information centre oriented teaching. The teacher must be updated with all the recent developments, because the teachers are core in imparting knowledge and they should lead students to the library to supplement and augument by exposing them to wider vistas of human endeavour. Therefore a collaborative constraaned effort on the part of the teachers and librarians would go a long way in building carreer of student.

Libraries as an institution are build upon solid philosophical and operational foundations while at the same time are ready to accomodate choice. Libraries are still predominatly book (print) institutions, but other media forms are being welcomed by the libraries. The present libraries are on the threshold of entering an entirely new era of information acquisition and circulation. Electronic informatin processing is here. It is continuing to make new contributions in a wideining array of new media forms and these forms should be rightly utilised by the library professionals then only our libraries will sustain in the era of dynamic growth of knowledge, growth in number of users and diversified nature of user's requirements in right time and cost.

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TEACHING STRATEGIES OF LIBRARY AND INFORMATION SCIENCE IN 2000+

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Abstract The author discuss new teaching strategies, which are being/supposed to be used in the Field of Library and Information Science. Now the Libraries and Library Services are changing significantly and they will change more rapidly in the near future. To keep the learners as well as resource persons abreast of the latest the door step of clientele, we have to be in continuous search of new education technology, so that the maximum number of interested persons could be benefited from the system. Here, the authors have tried to develop a few new strategies which can be used the teaching of LIS course very effectively.

PROLOGUE

Education helps in acquiring knowledge and skills needed by our society. India today has a second largest system of higher education in the world, but the insitutes of higher education (218 Universities+35 deemed to be universities) through formal mode are not capable in meeting the need of masses. Recently a ray of light has lightened in the form of Open Universities / Distance education with the commitment of'Education for All'. In Distance education System - Role of new information technologies and Library Science (as a subject as well as Library Services) are very significant. In this new mode of education, more emphasis is on 'self study' ad 'self motivation'. Self study in higher education needs effective Library and Library Services, which could be available at the doorsteps of clintele on demand at a very short notice.

To fulfil this demand, Libraries have to make use of the modern information technologies and motivated Library personels. As a result of information explosion, establishment of new open universities, social awakening and

development of new teaching technologies, there is an urgent need of reconsidering the teaching methods used in LIS Education in India.

Actually, in every area of education, including LIS, the rapid obsolescence of knowledge demands from every person to make necessary efforts to keep abreast of the latest information. For this, he requires some special ability so that he could collect, process and disseminate information very quickly. Since, LIS through Distance Education is based upon self learning, this implies the use of learner controlled strategies and technologies.

It means that the feasibility of technologies is an important criteria, which could also be examined. This feasibilitiy may be seen in the terms of its

i) Usability;
ii) Cost effectiveneess;
iii) Meaningness;
iv) Less time consuming;
v) Durability;
vi) Eco friendly nature;
vii) Suitability with the context, and
viii) Suitability to the needs of learner

NET-WORKING

Net-working is a very important term in the field of new technologies as well as in the organisations of Distance Education. Networking in organisations of De means, linking of differnt institues for co-operation, inter change and development, while in technological terms, interconnection of two or 'N' of computers for communicating to each other is called networking. This interconnection medium may be of visible wire, laser microwave or through sateleite.

In LIS course through Distance mode this networking can be utilised very effectively to fulfil the needs of scattered learners with the best available resource persons. Let us have a bird's eye view of this networking of LIS purposes.

LAN & WAN

Net-working for the purpose of teaching, learning or some other business in the context of local area interconnections ranging from a few meters to a few kilometers is called LAN (Local Area Network). There are different types of LANs -broadband, tokenbus, token ring, CSMA, Fibre oiptics etc. Recently wireless local area networking is also available. Fast networking protocal such as FDDI ATM Fast Ethernet are playing an incrasingly important role in implementing high bandwidth networks for imaging, graphics, CD-

ROM and Video Conferncing application. When the range of this connectivity enlarges from a few kilometers to about a hundreds ir thousands kilometers, then it is called WAN (Wide Area Networking) WAN generally employs public telephones, regardless of their suitability. In LANs privacy cana be maintained, but WAN is open for larger number of persons and offers much lower reliability.

Networking plays an important role in the use of information technology to share the knowledge to a greater extent. For distance learnining institutes, the need of connectivity is greater, since distance learners find inconvenient to get access to the intitutional learning support and resources through the use of a modem and a computer linked by a telephone line. For the students of DE, this connectivity may help in

i) Fastering delivery of instruction;
ii) Sharing of data, programmes and other informations;
iii) Saving of duplication of equipment and other itmes by different dept. of an institute reduce;
iv) Scheduling student's meeting, arranging conferences etc.; and
v) LIS Course is basically concerned with the sharing resources and less time consuming is another important feature of this course. This need can be fulfilled effectively- if we make a proper use of LAN and WAN with the real spirit. For LIS, in our country the facility of net-working is available at three-stages. At national level, learners can share the information on INFLIBNET, NICNET, ERNET, INDONET and INFOTEL net-work. At Regional stage the facility of CABLIBNET, DELNET, MALIBNET is abailable for the clienteles. At local level many institution are making efforts to deliver the service at the dept. level or individual level through LAN. We have to develop a media awareness among the learners, so that they could be benefited of this system.

INTERNET & INTERANET

Internet is a network of Networks through computers. No one group or Institution or organization owns this vast global network. There is no centralized managaement for it. Each network co-operates with other networks to direct internet traffic so that information can pass among them. This information passes through very high capacity links called 'backbones'.

A computer can be connected to LAN with a network card. This network card requires a software which mediates between the network and network card. This connection can be directly or through telephone, using a modem, but direct connections are quicker to telephone line connections. ISDN (Integrated Services Digital Network) is an another form o f quicker connec-

tion with very high speeds to the internet via normal existing telephone lines. Cable modem is another option which allows users to use coaxial television cable to access the internet. For this purpose a special calbe modem is required. The lines sed in this system are called leased line, usually owned by institutions and universities.

Intranet is a new jargon used by the media persons. Actually an Intranet is a part o f internet sustem but it is seperated by the rest of the internet by firewall. This firewall permits the users of intranet to use certain parts or area. In real sence, intranet basically serves as a private network for organisations, Institutions and open universities etc. This system ensures the protection of its internal data and knowledge from the snooping eyes.

Now, the question arises, how to use this system for the learners of LIS in Distance education ? Actually Internet acts as an universal library. Many libraries now make their card catalogues available on internet. Any cardholder can also reserve there books through Internet. Student, can share information related to their subject and internet very quickly and easily by sending files back and forth. On internet by doing experiments, demonstrations allow students to ask question or expert or expert can create three dimensional models etc.

But use of internet for a particular course is not so easy as it appears, because our curicculums are so rigid. There is a very little space for flexibility in it. Thus, we have to prepare need based course. Second thing which create's problem is 'Scarcity of Excellence' in the field of every area including LIS.There exist pockets of excellence, so if we have to fuly utilize interanet system, we have to be in touch with these pockets through internet. Availability of hardware, motivation of learner, cost involved are some other factors, which have to kept in mind, while introducing on internet.

MULTI MEDIA & LIS

There is a closed relationship between multimedia and course offered through distance education mode. The multi-media has a connotation of using diferent media in learning system. This multimedia system can integrate text, graphics, animations, sound and video on one plateform. Interactive digital multi media system permits the users to interact with the multi media system for input, process and output of the information, Hossein Parvin (1995) enlists the following qualities of multimedia learning system (MS)-

i) MLS is an open learning system which means this system is for all ages, all levels and all subject matter. So we can say MLS is for every body;

ii) MLS is free learning system, which means this system is for promotion of the information level of the society, promotion of professional knowledge and skills of the society and providing special public training programme. So we can say MLS is for every things;

iii) MLS is a distance learning system, which means the system provide chances for learning - at home, at work, at any possible place. In other words MLS is useful every where; and

iv) In MLS different media can substitute each other according to the needs of different media.

From these characteristics, it may be summarized that MLS is a system of learning which is available for Every body to learn Every thing, Every where, Any Time by the use of Any combination of media.

Multi media system does not produce only visual, audio or text based medium, but it can use a variety of pedagogical approaches i.e. simulation, case studies, issue's based video question answer and creating video text. Thus, MLS can be used very effectively for the teaching, learning of Library and Information Science also. It says that people renin only 20% what they see, 30% what they hear, but they remember 50% of what they see and hear and as much as 80% of what they see, hear and do simultaneously. This proves the effectiveness of multimedia system, beacause it involves visuals, hearing and interaction simultaneously.

Multimedia system is a very costly system and development of a programme on MLS requirs a huge amount and experties. Thus a careful planning about context, student's needs and resources is needed to make the programme a success.

OTHER EMERGING STRATEGIES

Micro Computer, Hyper text, Hyper media, CD-ROM, Videotext, Tele conferencing, Computer Conferencing, Computer simulation etc. are some emerging tools for making learning more interactive and interesting. But the questions, which needs to be addressed at this juncture is whether our students are motivated for this media culture? Do we have enough infrastructure facilities ? Whether our institutions are prepared to take up such task? Do we have enough knowledge at micro level (Dist., block or village level). Could we develop media sensitivity amongst the masses for leaning purpose? ?These queries need positive response otherwise these innovative practices would be concerned only with the elite class and the dream of mass education through media will remain as a dream only.

CONCLUSION

Like other courses LIS has to tune itself with the advanced technology, beacuase it is necessary for the LIS services to the masses as well as to improve the quality of library profession in a shorter frame of time. But we can not keep our eyes close from ground reality. At the school level even operation black board could not be sccessfully launched. At the college level, Chalk and Talk method is still very popular because of our Resource Constraints. Now we are in at the stage of dilemma. On one hand advanced technology, without which, it is impossible to maintain pace with the very fastly changing world, on the other hand, our institutions are facing the problem of availability of Chalk. But any how, we have to go for the technology otherwise our (Open Universities) identity will be in crisis.The need of hour demands to maintain a balance between the emerging teaching learning strategies and our practicing strategies. If today, a few scholars have a reach for advanced technology, tomorrow they will be lighting this candle at the door steps of learners even belonging to very remote areas.

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THREE PLUS TWO YEAR PATTERN OF LIS EDUCATION

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Abstract The paper evaluates oritically the present pattern of LIS education in India. Proposes a three plus two year pattern of LIS education. Gives rationale for and structure of the BLIT and MLIT courses as per the new pattern. Deiscusses the advantages pf the proposed pattern.

INTRODUCTION

The library and Information Science (LIS) education aims at developing trained manpower to manage libraries and information centres effectively and efficiently. In order to achieve this aim the LIS schools impart education at differnt levels such as Certificate, Deiploma, Graduate and Post-Graduate. In India Bachelor and Master level library science courses are conducted by almost all universities. Some affilated colleges also conduct Bachelor level courses in library science.

In recent time the Bachelor and Master level courses in India are facing serious criticism. The criticism is usually related to the comprehensiveness of the course contents, adequacy of duration, appropriateness of teaching methodology, etc.

This paper indentifies the problems of the present pattern of LIS education in India and proposes a new pattern, which will help to develop sustainable Library and Information (L & I) manpower. The scope of the paper is restricted to Bachelor and Master level of LIS education in India.

PRESENT PATTERN OF LIS EDUCATION IN INDIA

2.1 B. Lib. I. Sc.

The present B. Lib. I. Sc. course in India are of one academic years duration, i.e. about eight months time period. Most of the LIS schools in India

have following course contents for B.Lib.I. Sc. with minor variations in nomenclature and subtopics.

(i) Library and Society
(ii) Library Management / Adminstration
(iii) Reference Service and Information Sources
(iv) Information Work / Documentation/ Information Storage and Retrieval
(v) Classification Theory
(vi) Cataloguing Theory
(vii) Classification Practicals
(viii) Cataloguing Practicals

Recently some of the LIS schools have included in their curriculum the "Computer Applications in Libraries and Information Centres" paper, either as compulsory or as optional. Some LIS schools have accommodated the contents of this paper in some other existing papers.

2.2 M.Lib.I. Sc. :

With the exception of few integrated two years M. Lib. I. Sc. courses most of the M. Lib. I. Sc. courses in India are of one academic year's duration. The curriculum of the present M. Lib.I. Sc. courses consists of six to eight papers and or dissertation of 100 to 200 marks.

CRITICAL EVALUATION OF THE PRESENT PATTERN

3.1 Nomenclature

This is an information technology era. People have more fasciantion towards the term Information Technology. so the present LIS courses must include in their titles the Information Technology or similar terms.

3.2 Course contents

Almost all library science schools in India are continuosly revising their curricula. But these revisions are generally very minor. Mostly the revisions take place in the sense that a topic is shifted from one paper to another or name of the topic is changed. Drastic changes in LIS syllabus are rare to withness. On the contrary developments are diverse and fast. In order to be with the pace of development drastic revisions in the LIS curriculum are required. Already there is a general consensus among the LIS professionals that the present course contents of both, B.Lib, I.Sc., and M.Lib. I.Sc. are inadequate. Course contents of present LIS curriculum is not able to prepare professionals to work in traditional as well as non-trditional library and information setting.

3.3 Duration

Duration of LIS course has been a ever present topic of discussions among the LIS professionals in India and even in foreign countries. As given earlier the B.Lib. I.Sc. courses are of one academic years duration. Candidates who join B.Lib I.Sc. course are graduates of different facultires. But they have absolutely no knowledge of any IIS subject and the terminology used in LIS. Four to six months are required for these candidates to get acquainted with the various subjects and terminology used in LIS. This means by the time the B.Lib. I.sc. student begins to understand different subjects in library science there comes the examination and end of the academic year. The M.Lib. I.Sc. syllabus is also difficult to comprehend within a period of one academic year.

THE DILEMMA OF MORE SYLLABUS AND LESS TIME

The duration of both B.Lib.I.Sc., and M.Lib. I.Sc., course was decided long ago when the LIS as a discipline was not much developed and expanded. So the decided duration was adequate to study the given course contents.

Recently the library and information science as a discipline has developed and expanded in almost all dimentions. Number of new topics or even it will not be wrong to say new subjects have come up within the LIS discipline.

Information Technlogy applications to LIS, Database Management, Networks, Non Book Materials Librarianship, Local History Librarianship, Marketing of Library Services, Generation of Information Products and Services, Librarianship as entrepreneurship are just few topic/papers to name, which have been waiting in the queue for getting included in the LIS curriculum. The existing B.Lib.I.Sc., and M.Lib.I.Sc., syllabus itself is so vast (but inadequate) that it cannot be taught and studied in one academic year. And if we add new topics/papers then it becomes absolutely impossible for both, the learner and the teacher to study and teach such a comprehensive curricula in such a comprehensive curricula in such a short time. This dilemma of more syllabus in less time can be resolved by having a three plus two year pattern of LIS education.

THREE PLUS TWO YEAR PATTERN: RATIONALE AND STRUCTURE

Engineering, Medical, Agriculture and professional courses. These course are of four to five years duration. Recently the duration/pattern of Law

education has also been changed to make it five years course. The Bachelor of Computer Science (BCS) and Master of Conmputer Science (MCS) courses are of three and two years duration respectively. All the above courses are professional courses. Canddidates completing Higher Secondary education (12th Std.) are considered eligible for getting admission to these professional courses. Library science courses are professional courses and if they are professional courses then the duration of these courses must be increased, so that these courses will be at par with other professional courses mentioned above. The extended duration will enable the students to study complete library science. This will also enable the LIS teachers to teach all existing as well as new topics / papers.

5.1 Nomenclature

The title of the present B.Lib.I.Sc. course should be changed and it should be called as Bachelor of Library and Information Technlogy (B.L.I.T.). Similarly, the present M.Lib. I.Sc., title should be cahnged to Master of Library and Information Technology (M.L.I..T).

The young generation has over fascination for Information Technology. So addition of these terms Information Technology to the titles of library science courses will definitely attract young talent towards the library science courses. However, the change should not be only in the course titles but it should be also in curriculum and teaching methodologies.

5.2 Duration and Eligibility

Like the BCS course the BLIT course should be of three years duration. Candidates completing their Higher Secondary education (12th Std.,) should be considered eligible for BLIT admissions.

Like MCS the MLIT course should be of two years duration. Candidates completing BLIT courses should be considered eligible for MLIT admission.

5.3 Course contents/curricula for BLIT

The three years BLIT course should have 14 papers plus internship and termwork and it should be of 1800 marks. Core curriculum alongwith the distribution of marks is given below.

For First Year :-

	Papers	Marks
1.	Foundation Course I (English,Social Science,Humanities)	100
2.	Foundation Course II(Science and Technology)	100
3.	Library and Society	100
4.	Management of Libraries & Information Centres(Routines)	100
5.	Classification Theory	100
6.	Cataloguing Theory	100

For Second Year :-

1.	Classification Practicals	100
2.	Cataloguing Practicals	100
3.	Computer Applications to Libs.&Inf.Centres (Theory)	100
4.	Computer Allications to Libs & Inf.Centres(Practicals)	100
5.	Reference Service and Information Sources(Theory)	100
6.	Information Work / Documentation (Theory)	100

For Third Year :-

1.	Information Work/Documentation (Practicals)	100
2.	Reference Service Practicals	100
3.	Bibiliography and LIterature Survey in:- (i) Humanities (ii) Social Science (iii) Natural Sciences (iv) Engineering & Technology	100
4.	Term Work	100
5.	Internship (part time: three hours every day: minimum 180 working days)	100

5.4 Course contenrs/curricula for MLIT :

For First Year :-

1.	Information, Library and Society	100
2.	Information Science, Systems and Services	100
3.	Inforamation Technology Applications (Theory)	100
4.	Information Technolgy Applications (Practicals)	100

For Second Year :-

1.	Management of Libraries and Information Centres	100
2.	Research Methodology	100
3.	Optional (any one of the following) (i) Academic Librarianship (ii) Special Librarianship (for example, Industrial, Medical, Non-book material etc.,) (iii). LIS education	100
4.	Project work	100

Professional courses must be practical oriented.So in this proposed pattern of BLIT course and one third of the total courses are practical based. Similarly in the MLIT course a practical of IT paper is made compulsory with adequate mark value.

ONE BASIC ARGUEMENT:

The pattern suggested here will be questioned by professionals by saying, since a library and information scientist deals with knowledge contained in documents as such it would be more appropriate if the entrants to the profession have a sound background and understanding of a subject. So B.Lib.I.Sc.has been made a post graduate course.Entrants to the B.Lib.I.Sc. courses are graduates of any one faculty, this means they have background of subjects from only one faculty and do not know much about subjects from other faculties which they have not studied. In order to provide the entrants adequate background of subjects from various faculties the pattern suggested here has two papers entitled "Foundation Course I and II".

TEACHING METHODOLGY

This new pattern has more emphasis on practicals. These practicals should be conducted with the aim to prepare skilled manpower able to work in the actual job environment. This can be done by assigning practicals in cataloguing, classifaction, indexing, abstracting, reprography, etc., Special care should be taken of the computer and IT practicals. The computer and the IT practicals should not be taught with the talk and chalk method, rather enough "hands on experience" should be provided to the students. For this purpose adequate infrastructural facilities (computers and other IT equipments) should be made available in the LIS schools.

ADVANTAGES OF THIS NEW PATTERN OF LIS EDUCATION

i) The extended duration will allow to add new topics and subjects which is absolutely essential.

ii) Enrollment to the present LIS courses is decreasing rapidly. This new pattern, particularly the comprehensive IT component and more emphasis on practicals will be able to attract more talent towards the LIS courses.

iii) Since long the LIS educationists are talking about internship to be made compulsory at the Bachelor's level. However the inadequate duration of the present pattern of B.Lib.I.Sc. course (one academic year) does not allow this. In the new pattern the BLIT course has adequate duration (three academic years). This will allow to have internship as a compulsory component. This will be one more more step towards taking the LIS profession at part with the other professions. .

iv). The library profession is facing and will be facing in the nea future variety of changes, e.g., newer information storage media, new technology to use these media, increasing financial crunch, concept of self financed libraries and information centres, optimum use of computer and communication technologies in profiding LIS services, etc., This new pattern of LIS education will be to prepare manpower which will be able to cope up with these changes. In other words this pattern will be able to develop sustainable library and information manpower.

v). The new pattern of LIS education will prepare manpower which will be able to work even in non-traditional information setting. In the new pattern it will be possible to teach topics like economics, costing and marketing of information: copyright laws, generation of information products and services, etc., These and other similar topics will encourage entrepreneurship in librarianship.

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A CHIEVING SUSTAINABLE LIBRARY FINANCES FOR SUSTAINABLE LIBRARY & INFORMATION SERVICES

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Abstract Production of Information is guided by the laws of Economics. Librarian must follow the rule of Economics to attain sustainable library finance. Information is a commodity, it is shareable, reusable, It serves the client's need. It is highly used by the educated persons. There is a direct relation between Demand, Utility and supply of Information as a commodity, as in the case of other commodities. Demand is according to the necessity of the users, economic capacity, social position, knowledge, age, communication system etc. Price of Information is judged according to the demand and supply of it. Information production requires cost, so far developing sustainable library finance there must be promotional activities and proper use of Sales media for sound finance condition of the concern itself.

INTRODUCTION

As Consumer goods production influences Economic system, Information production also affect the Economic system. As a Librarian for achieving sustainable library finances one has to know how to play by the rules of the game of Economics. Library and Information services are from the niches of the telephone query to the Library's Reference desk.

Information ? - By the word "Information" is meant here not only textual information but also signal transmission as propounded by Weaver & Shannon SOURCE - MESSAGE CHANNEL -- RECEIVER.

Information is a commodity. It is shareable, reusable, expandable. Its value is judged by the organisation which uses it. When properly organised it becomes knowledge and a saleable commodity.

Information can be gathered fast or slowly. It can be achieved through vast study and research work. It can be obtained free of cost or it may be very expensive. It can be had in any form : from clay model to CD-ROM etc.

Information Resources are created on the basis of clintele's need and interest. There should be a parity between the clientele's need and the selection of Reference tools, so that the collection become meaningful to the user.

Need of Information and why of it ? - In the words of B. C. Vickery "The social position of recipients, their activities, knowledge structure, ability to assimilate, communication behaviour etc. may all be a series of influences that will determine the information needs of individual or groups. Information system and services must respond to these kinds of requirements".

Information need varies according to age, education, income preference and stress to have it by the individual. The other vital point is ability to purchase it. Information Demand varies accordingly.

Education, literacy level indicates the standard of a nation and use of information accordingly.

BASIC ECONOMIC PRINCIPLE - DEMAND & SUPPLY

There is a direct relation between Demand, utility and supply of any commodity. Price is determined according to the demand of the Information products/services. If demand and supply both are higher and there are equality of these factors then prices of the Information products/Services become less. If supply is less and demand more than prices become higher.

Demand is according to the necessity of Information product/services. Need is transformed into want in any society, according to the culture of any person. People want the best services/products for maximum benefit and utilisation of money he spend for it.

Here the term `Demand' is manifested in the light of economic point of view. There may be demand or desire or wish but it must be onientation of desire or wish for Information product/service commodity and he or she must have capacity to spend money to have it.

Supply of Information product/service — The Information products/ services are suplied by the seller to the market in various alternative prices. Here the Resource price to produce the Information product/Service and the Technology used to produce it are constant.

The demand of the product is directly related to the price of the product/service. Though the other things i.e. Resource price, Techology are constant.

When there are changes in these constant factors there is a change of supply made. It may fall or rise.

So we can say demand is dependent on the consumers willing and supply is dependent on the sellers willing.

Here the consumer demand is independent of the activities of the seller and the supply also independent of the activities of consumers.

Demand and supply of any product/service indicate the criteria for determining price.

INFORMATION PRODUCTION ECONOMICS

In the Information industry based product/services etc. there are three main factors of cost as follows :

(a) Payment for Staff - To run all the activities of the concern, payment for salary, Incentives, Transport etc.
(b) Rent and Taxes - rent for space, Electricity, Telephone and Fax charges, Mailing charges, Taxes, Corporation and Municipal taxes etc.
(c) Administrative expenses - For training of staff for Research etc. For Accounts keeping and maintenance of Ledger of Finance. For purchasing anything for Customer services etc. For Advertisement, Seminar, Workshop etc.

DEVELOPING THE SUSTAINABLE LIBRARY FINANCES

For developing sustainable Library finances, there must be promotional activities and publicity of the Library & Information services/ products etc.

The following are the points to keep in mind for promotional and publicity activities :

(a) Type of clients for communication.
(b) What to communicate ?
(c) Draw the attention of the clients, inform them and then persuade.
(d) Select best promotional mechanism and if necessary the alternate one.
(e) Design promotional ideas for the resources available.
(f) Define the role of the library staff in promotional activities.

Except promotional activities and publicity of Information products/ services, there must be proper application of other sales media for augmenting library finances. There are as follows :

(a) Public relation,
(b) Lobbying
(c) Direct Selling of Library Services
(d) Philanthropic sources
(e) Convention and Seminars
(f) Library membership of commercial organizations.
(g) Telephone sale
(h) Advertising
(i) Resource sharing etc. Those are called Sales Media.

The Library personnel or Information Manager who is the seller, must have good idea of the amount of money to spend and the most affective way to spend it.

To earn maximum profit, the library Manager should plan expenditures to match marginal revennes and marginal cost etc.

DIFFERENT SALES MEDIA AS STATED ABOVE & CRITERIA FOR SELECTING THESE MEDIA FOR AUGMENTING SUSTAINABLE LIBRARY FINANCES.

(a) Public relation - It is cheep to promote a popular product/ service etc. Public relation always should be done on the publication of a concern. It is the best marketing process of a product/service. By it the repeated prise of many customer, satisfy the other to be a customer and thus the sale is increased and profit also.
(b) Lobbying - Lobbying in various groups also promote marketing, which is profitable.
(c) Direct Selling - It is profitable. Here the production cost is high and the product is sophisticated and complicated type e.g. CD-ROM. Sales person should be appointed for this work on commission basis with incentives and rewards to do the best. If the sales person's achievement s good, direct selling will be profitable, otherwise not. A good sales person must have good product knowledge and must be motivated.
(d) Philanthropic sources - The philanthropic concerns are engaged in the development of human society. So one can get help from them and uplift the condition by proper use of money and resources obtained from the philanthropic Institute.
(e) Convention - Excellent, costly, products are shown at the conventions. These attract attention with unique and exhaustive srvices. A conven-

tion is the place where people are introduced with the products/service etc. The people may not know the product/service if they were not introduced with these. So here is a possibility of enhancing library finance.

Seminars -- It enables individual contact, personal relation and details, about the product/services etc. Seminars can meet and know the exact needs of the clients, their difficulties etc. Here response is high from the side of the customer. In conventions Librarians enquire abut a product due to curiosity, but in case of Seminars they determine their choice of product and purchase it. So here the library pecuniary condition is well advanced.

(f) Library membership to commercial organisation : Commercial organisation has a good pecuniary condition and they are ambitious of gaining financially So Library membership should be given to them and proper service/product of the library will uplift them as well as it will help the library financially.

(g) Telephone Sales - Telephone sales are fruitful where purchase probability is high. It is ineffective in cse of a product which is costly and new one. Telephone sales encourage people to attend seminars for selling the product which is previously introduced to the probable customers. Thus the financial growth of the library may enhance.

(h) Advertising - Advertising has an efficacy where the product fulfil the need and expectation of the purchaser. Constant customer communication is the best mode of free advertisement. Thus implementing this process library finance may be enhanced.

(i) Resource sharing - Sharing the resources among local libraries is good for saving money and also good for better services to the clienteles. Thus through Networking of distant libraries, Resource sharing also done. Thus money can be properly utilised to enhance the financial condition of the library for sustainable library and information services.

CONCLUSION

Most library and information centres do not use the fundamental rules of economics in oveluating their work. If it is used properly the library economy may be grown up and at the same time l ibrary services will be good and upto the expectations of the clienteles.

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A NEW LOOK AT LIBRARY FINANCES

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Abstract The present financing system of libraries is not serving libraries well during this time of transition to an increasing electronic environment. The existing system or sources of finance, inhibits organizational flexibility and exacerbates the professional staff's sense that they are losing control of their own professional destinies. A new modified transitional financial resource for libraries is proposed. The new proposal emphasizes more on rent seeking library services in view of the growth of knowledge and users attitude towards the technology based information services. It discusses the demerits of existing and merits of proposed financial resources of libraries. Its goal to make libraries adept for better services to manking.

INTRODUCTION

The information has come to occupy a centre place in the advancement of countries in the world. A well developed information network is a precondition for optimum resource use. In particular, in economics the information is treated as the indispensable but the fifth most recent factor of production. The information is not jsut an infrastructure but also treated as an economic input.

The libraries are the prime movers of information. The growing informational technology and base in the modern days has compelled the libraries to become upto date if they are worthy of their salt if by any chance. Accordingly the financing of the library has become a serious practical problem to be reckoned with. Besides their obvious dependence on the grants the future of these institutions has deteriorated positively with the growth of information. The other sources to finance the libraries are very limited. The conventional sources have failed in the unconventional days of information and technical progress. The need of the hour is to look for the different methods and sources of finance for the modern libraries.

The purpose of the paper is to review various sources of finance. For convenience it is divided in to the following parts.

Part I explains the impact of information and technology in the frontiers of progress and the existing functions of library as an institutions is recapitutalted in part II. The sources of finance currently at the command of libraries of general nature has been narrate in part III. The scope for denova methods of financing librairies are listed in part IV. The feasibility of few have been evaluated in part V. Summary and conclusions are given in Part VI.

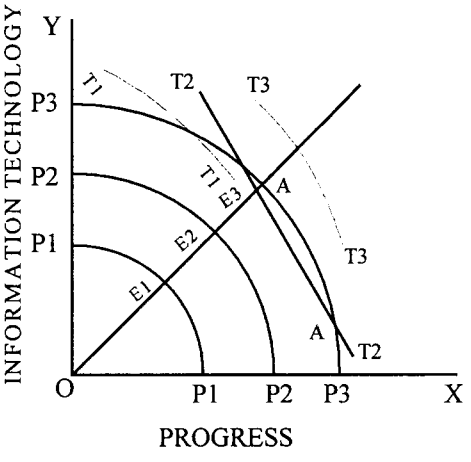
INFORMATION TECHNOLOGY IN THE FRONTIERS OF PROGRESS

Advances in the information technology are transforming the way people work, communicate and document their activities. The contemporary times are aptly called the information age. By that it is meant that information has become a strategic raw material and a dominating factor in decision making, execution and scientific research. This changing information environment has brcught in profound social and economic changes. However these revolutionary changes depend on the major technolgies otherwise called information technology. Through the passage of time the media that carries the information underwent remarkable changes and landed in the present age of information technology, has led us to herald a new age of communication. It has produced information society, that allows the evolving new knowledge to spread at really the speed of light to anywhere in the world. Especially during the last 30 years the growth of computer technology and telecommuncation technology have made information society which has crossed the geographical limiations and facilitates global access to information.

1.1 Impact of Information Technology and Progress

While observing the prevailing trend of this century and even next century also the impact of information technology on progress is tremendous. they are moving with hand in hand, the below mentioned illustration shows the relation of information technolgoy and progress.

The line o-y indicates the information technology development i.e., and P3 are the stages of development. Similarly line O-X indicates the progress and development through P1, P2, and P3. The line 'E' is a path line where in information technology and progress stage of movement have crossed in E1, E2 and E3. The point 'M' shows the equilibrium point of both information technology and progress, where as T1, T2 and T3 are showing the movements of information Technology in its developmental stages.



This shows the correlation of information technology towards progress which means if it is good naturally progress of country will be god. Therefore to have a sound information technology natural financial resources should be sound enough.

CHANGING FUNCTIONS OF LIBRARY

The traditional libraries had a very limited number of functions while comparing to modern libraries and their functioning system. The basic job of traditional libraries are limited to the selection, acquisition,organisation and lending services. As the days have changed we find multifaceted developments in the library and information field.Since the development took place in different filed the users also started demanding improved services of libraries. Over the time, considering the users attitude and development in information technology, increased research and development and its impact on the socio-economic development has compelled libraries to change their working system.

The changed system of modern libraries functions are in additions to the selection, acquisition, organisation and lending services, the information analysis, synthesis and information repackaging and evaluation services are getting more important in these days. Above all, the applicaiton of information technology for carrying all these of information services and to satisfy the fourth law of library science is the main trend at present.

THE TRADITIONAL SOURCES OF FINANCE

Table No.1* : The main sources of traditional finance:

S. No.	Source	Contribution	Remarks
1.	Government Grants	60 %	Not increasing as per requirement
2.	U.G.C Grants	25 %	Decreasing
3.	Library Fees	05 %	Not encouraging
4.	Library fines	00.15 %	Not effective
5.	Sale of Library Publications	00.10 %	Not effective
6.	Endowment and private foundations	00.15 %	Not helpful
7.	Other funding agencies/ organisations	09 %	Not encouraging
		100%	

* Compied from an abstract book at library budgets.

Note : S.No.1,2 and 3 though there is a little increse we find in the budget provision, but it is not at all matching the cost hike of information sources, manpower cost, and equipment cost. Hence, dependence on these sources the libraries growth and its services gets affected a lot.

S.No.5, the sale of library publication depends upon the healthy financial system of library.

For S.No.6 & 7, it requires the continuous better and effective effort from the library to get the good contribution which is presently lacking.

PROPOSED SOURCES OF FINANCE

Table No.2: For the better starting and effective use the following few of the new sources have been proposed

S. No.	Source	Contribution*	Remarks
1.	Subscription from members of library	10 %	Increases finance
2.	Supporing grant from Govt.	20 %	Minimum Support from Govt.
3.	Supporting grant from U.G.C	15 %	Encourages other resources
4.	Sale of Library services	25%	Encourage library finance resources
5.	Raising endowment and private foundation	05 %	Encourage better services
6.	Gifts	05 %	Encourage better services
7.	Information consultations	11 %	Increases financial resources
8.	Library fines	02 %	Helps for maximum exploitating information services
9.	Sale of library publications	07%	Helps in two ways that for library publicity as well as for library fund raising
		100%	

Source: Comiled from :BURLINGAME Weight F: Fund raising as a key to the library's future, library trends Vol.42, No.3, PP.467-77.

*-Approximate

Note:S.No.4 the sale of library services in this context means considered only special type of services for charging like E-mail, Online search, CD-ROM, database searches, full text services, Bibilographical services, etc.,

EVALUATION

Finance is the most imporatant factor for execution of any work in the society as a whole. Finance has got its own principles, rules and regulations in all spheres of life. The principles of finance are being changed from time to time based on the social need. As such genral principles of the buegeting, accounting and financial control have not changed greatly over the time. Old rules and pardigmas must be rethought in a time of rapidly developing information technology concept and libraries are altering the traditional ways of budget making.

5.1 DEMERITS OF EXISTING FINANCIAL SOURCES

The basic gap what we are finding especially in Indian scene is "there is no matching between growth of information, growth of users demands, on information and providing information services with the financial provisions of the libraries. The shrinking Govt. budget for libraries has created a great set back to the libraries development. Therefore, situation warrants the change in financing system of libraries. The major source of finance for libraries is only Governmental organisations. The other sources of membership fees and endowment etc, have become too nominal which are discouraging the library developmental activities immensely.

5.2 MERITS OF NEW SOURCES

The presen trend of the wolr, if we observe from all the corners the rent seeking trend is the major phenomena of the present society. Keeping this in view, for maximum satisfaction of the users which is the ultimate goal of libraries, it is inevitable to charge some of library specific services for better services and necessary development of the mankind. An attempt of increasing endowment, gifts on private donations also can be increased.

These are the only alternative source for strengthening library finances which can servce better in the changing trend. This trend is already being supported by the Govt. of India, Ministry of Human Resource Development and based on this UGC is issuing necessary guidelines to universities for self resource building and resource mobilization.

Therefore it is an appropriate time for libraries to build up slowly self resource mobilizaton based on rent seeking services.

5.3 LIMITATIONS

The present study on library finances based on rent seeking is the beginning on this field; it is not specific study. The following are the some of the limitations on this study.

5.3 .1 This is an abstract study no figures are considred for any particular library. This sources may differ from university to university or library to library.

5.3.2. The new sources are only contemplated sources.

5.3.3. No attempt is made to take account of applying cost benefit analysis to library finances.

5.4 SCOPE FOR FURTHER STUDY

Financing libraries is basically an important part of the library and information system. Specifically these days iit is getting further special importance because growth in information technology and progress, which are mainly depending on library finance. Therefore detailed study based on scientific method and analysis, using necessary statistical methods and survey method are necessary to come out with better decision in this field which will naturally help in useful library management and development.

CONCLUSION

Over the last two decades many libraries have invested in tracking the use, their patrons make of library service because they see that output measures provide valuable information about library performance. In this article, we have argued that it is time to go further and face the task of 1).reexamining the financial sources and 2). identifying in greater detail the financial resources, our goal has been to convince the need of restructuring the financial inputs to libraries is indispensable without which the strategic planning for better information services in the rapid changing society becomes a mere waste of effort.

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AUGUMENTING LIBRARY FINANCES IN S & T LIBRARIES FROM CONCEPTS TO APPLICATIONS

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Abstract The present paper reviews the status of S &T activities and Libraries with specific reference to India. Financial crunch has been considered as the major factor affecting the entire activities of S & T libraries. It further discussed various methods for generating resources to face unprecedented financial crunch.

INTRODUCTION

The role and the concept of Library and Librarianship has now drastically changed due to the application of New Information Technology (NIT) for the generation, collection, processing, storage and dissemination of information to the end users. Librarians and information scientists are enthusiastically accepting these changes and challenges to serve their respective organizations and users effectively and efficiently through providing high class information services and products. Interestingly, on the other hand, the librarians and information scientists are increasingly facing the problem for financial crunch to meet increasing user's expectations. It has been observed that some organizations are facing acute shortage of funds even to meet their common and basic requirements of their users. This situation poses more challenges to the librarians and information scientists. Before we discuss various options to face this situation, it is desirable to have an idea about the status of S & T and library activities with specific reference to India.

SCIENCE AND TECHNOLOGY IN INDIA

It is a known fact that India has contributed substantially in the area of Science and Technology in ancient and medieval periods. With this background, our first Prime Minister Pt. Jawahar Lal Nehru brought out a Science Policy Resolution in 1958 with the following main objectives to achieve glory

in the area of Science and Technology for our country.

1. to foster, promote and sustain, by all appropriate means, the cultivation of science and scientific research in all aspects-pure, applied and educational;
2. to ensure an adequate supply, within the country, of research scientists of the highest quality, and to recognise their work as an important component of the strength of the nation;
3. to encourage and initiate, with all possible speed, program for the training of scientific and technical personnel, on a scale adequate to fulfill the country's needs in science and education, agriculture and industry and defense;
4. to ensure that the creative telent of men and women in encouraged and finds full scope in scientific activity;
5. to encourage individual initiative for the acquisition and dissemination of knowledge in an atmosphere of academic freedom; and
6. in general, to ensure for the people of the country all the benefits that can accrue from the acquisition and application of scientific knowledge

With this policy resolution, S & T has become an important tool to transform the life of common people. Broadly, the following are the main defects of S & T on Indian people and environment.

1. Change in thought process
2. Standard of living
3. Work method
4. Self sufficiency
5. Social change
6. Scientific and technological policy, planning and administration
7. Cultural development
8. Educational policy, planning and administration
9. Nation - building process
10. Agriculture, medicine and other sciences
11. Industrial development
12. Libraries & Information Centres

LIBRARIES & INFORMATION CENTRES

It is noticed that Libraries and Information Centres are largely affected with recent and rapid developments in S & T activities. As we know earlier libraries used to be treated as the store house of books and the librarians as the custodian of books. With the passage of time and new challenges and changes, the concept of Library and Librarianship has totally changed. Currently, Library is considered as a vital instrument of social change and a centre

for creation and recreation of academic activities. Accordingly, Librarians have to play a key role in the collection, processing, generation, distribution and dissemination of information through adopting new methods and techniques of New Information Technology (NIT). This is essentially required, specially in the area of science and technology as the scientists and engineers always need the latest and comprehensive information on their respective areas of interest for effective dicision making and to re-orient their research efforts. This factor has motivated the rapid growth of Libraries in the area of science and technology. Annexure-1 indicates the growth of the major libraries in the area of science and technology in India.

We have observed that the libraries of S & T institutions are actively involved to provide updated and comprehensive information to the users through traditional and non-traditional methods and techniques. Mostly libraries are in advanced stage of automation, which is the first requirement for modernization of the library operations for the benefits of the scientists and engineers of respective institutions. Provision of CD-ROM and ON-LINE databases, internet and multimedia facilities, audio-visual collection, OPEC user's terminals, e-mail facilities and bar-coding etc., are being implemented for the effective and efficient usage of the collection and services. The librarians and information scientists are also engaged to provide access to Library networks like MALIBET, INFLIBNET, DELNET, SIRNET for comprehensive coverage as each library is not self sufficient in all respects. The resource sharing is also being utilised for the users to provide maximum comprehensive access to the services and collection available at different locations to meet the challenges of information explosion. For example IITs are exchanging free of cost the photocopy of the articles from the journals required by their respective faculty and students on mutual basis under the resource sharing activities. In this direction, very recently, IIT Madras has also extended this facility with IISc Bangalore on mutual basis.

LIBRARY FINANCE

Finance is the backbone of the entire activities in all areas. But due to urgency and nature of requirement, the financial resources are more needed for S & T activities. Accordingly, provision of world class services to the scientists and engineers will largely depend upon the availability of financial and infrastructural resources. It is further observed that the cost of CD-ROM and ON-LINE databases is very high and is of recurring nature. The subscription of S & T journals which are the basic sources of information, is also a very costly affair due to increase in the cost of Journals and foreign exchange hike. It has been experienced that at the rate of 15% additional financial resources has to be added annually to meet the hike. Annexure-II gives an idea of increase in the cost of S & T journals. All these factores have motivated S & T

libraries to workout a strategy to generate resources and also to re-orient their efforts to provide access to more resources and services at the lowest cost to the maximum users at the highest speed.

STRATEGY FOR RESOURCE GENERATION

Librarians and information scientists in the area of S & T organizations are required not to depend entirely on the resources of their respective organizations but to assist to face the financial crunch existing in their respective institutions. This gives an opportunity to establish the existence and also gain recognition for achieving substantial contribution for making the respective institutions self-sufficient. This is a high time to discuss and evolve a workable strategy to generate resources. In view of my experience and exposure, the following methods may be useful for gengrating resources.

Project writing

Consultancy

Short-term programs

Registration of vendors

Over due collection

Document delivery

Publication activity

Charging various services

Creation of specialized databases

Literature search

Content page service

Bibliographic compilation

State of the Art report

Industrial interaction

EXPERIENCE AT IIT MADRAS

We are also in the same boat like other S & T organizations. However, we have initiated the process to generate resources for our institute with the help of the resources and infrastracture available with us. The following specific methods have been adopted to generate resources.

INDUSTRIAL INTERACTION

IIT, Madras is actively engaged to have interaction with industries under Industrial Associateship Scheme managed by the Centre for Industrial Consultancy and Sponsored Research of our Institute to strengthen the linkages with the industry. At present over 285 industries and organizations are members of this scheme. The charges for becoming the associate member under this scheme are as follows:

Small scale industry	Rs.3000/-
Medium scale industry	Rs.5000/-
Large scale industry	Rs.10000/-
R & D Institutions, Consultancy Organizations and other service sectors	Rs.5000/-

The members can avail the following facilities:

* Technology Appreciation Programme
* Technology Absorptin and Adaptation Programmes
* Presentation on Facilities at IIT Madras
* Library and Information Services
* Short Term courses
* Get-Togther Programmes

Under library and information services, wer provide the following facilities:

Borrowing of Books/Documents

- Library Cards to borrow books
  * Two for small scale industry
  * Three for medium scale industry
  * Five for large scale industry
- Additional cards at a concessional rate of Rs.500/- per ticket per year
- Free access for reference to all literature
- Photocopy facility against pament
- Literature search from CD-ROM/ON-LINE databases
- Document delivery
- Library also get financial asistance for the subscription of current journals, establishment of special facilities, man power for specific jobs from the financial resources generated under this scheme

PHOTOCOPY FACILITYES

Central Library provides a high class photocopy facility to its users and the industries during all working days including holidays. We generate a good amount of revenue which is adequate to support the proper maintenance of the service. The Annexure-III indicates the revenue generated during 1996.

OVERDUE COLLECTION

The overdue collection is a god source aailable at the disposal of the library for generating the resources for the institute. In this regard, we have linked the printer with the terminal to generate automatic fine slips for overdue books. The computer does not accept the return of books unless and until due is cleared. This arrangement has increased the generation of overdue collection and also to make the record more transparent and error free. Annexure-IV indicates the amount collected during 1996.

PROJECT WRITING

Submission of the projects to the funding institutions is a good source of revenue generation to an institution. In addition to generate the resources, it also helps the libraries and information centres to develop and establish specialised facilities for the end users. In this direction, we have also initiated and generated Rs. 13 lakhs through submitting two projects on different aspects.

DTP & PRINTING FACILITIES

We also have a high class DTP & Printing Sectin with all modern equipments like, Pentium Venturis FX 5200 digital 32 MB with 21" Colour Minitor, Pentium Venturis FX 5120 E digital 16 MB with colour Monitor, HP colour Scanner jet 4C, HP Laser Jet 5m Black and White, HP Desk Jet 690 C Colour Inkjet, Off-set Printing machines. With these equipments and good staff, we are able to generate good resources for our institute and also saving a considerable expenditure involved in the printing of stationery, forms, annual reports, magazines, manuals etc.,

In addition to the above methods for g eneration resources, we are also generating resources through the following services.

1. Consultancy
2. Conductin literature search
3. Contents page service
4. Document delivery

CONCLUSION

We visualise further financial crunch and new challenges to provide world class information services and products to the scientists and engineers to help them in achieving scientific excellence and to meet the global challenges. To meet all these challenges, we have to initiate the process to generate resources for our organizatins to contribute substantially to establish our existence and recognition.

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Annexure-I

Major University Libraries in the area of Science & Technology

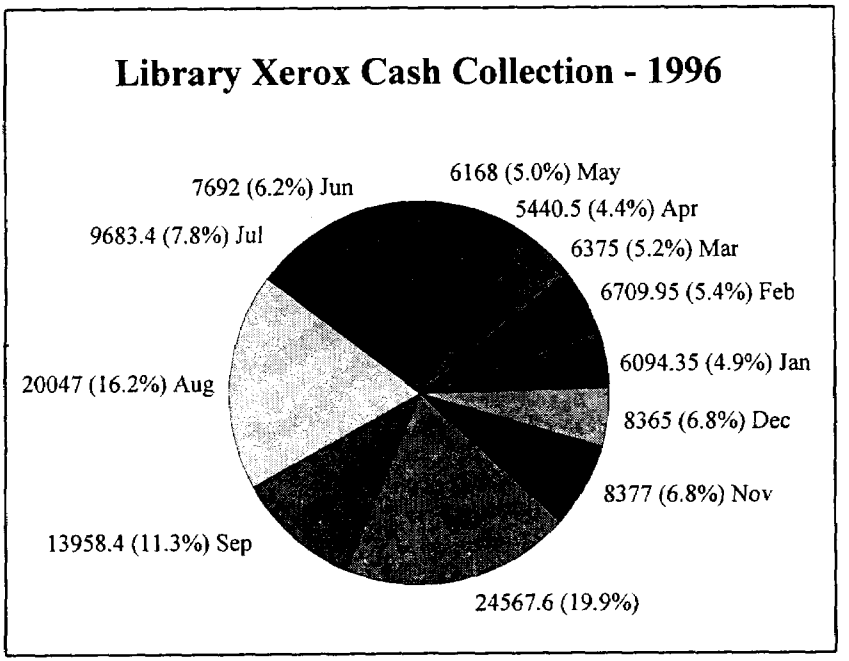
Sl. NO.	Name of Inst. & Univ.	ESTD	Collections	Journals	Students	Teachers	Budget (Lakha)
1.	Anna Univ., Chennai	1978	179258	719	4366	422	21.78
2.	Bengal Engg.College, Hawrah	1856	2 Lakhs	1600	265	-	
3.	Birla Inst. of Tech., Ranchi	1955	61,000	225	-	-	19.21
4.	Birla Inst. of Tech & Science, Pilani	1964	192900	400	3805	318	10.31
5.	CS Azad Univ. of Agri & Tech., Kanpur	1975	74,969	-	1187	-	
6.	Cochin Univ. of Science & Tech., Cochin	1971	1,14850	492	1507	188	-
7.	Dr. Baba Sahib Ambedkar Tech. Univ. Raigab	1989	10,000	65	-	-	02.58
8.	GB Plant Univ. of Agri & Tech., Plantnagar	1960	2,87649	1200	2478	439	28.53
9.	IISc., Bangalore	1909	3,75,416	1821	-	-	09.00
10.	I.I.T. Bombay	1958	3,16,167	1499	3045	374	195.00
11.	I.I.T., Delhi	1961	2,63,352	1340	2900	380	144.32
12.	I.I.T., Kargpur	1950	2,86,144	1027	-	-	168.00
13.	I.I.T., Kanpur	1959	4,00,000	1200	1950	308	150.00
14.	I.I.T., Madras	1959	2,18,643	700	2460	407	106.25
15.	J.L. Nehru Tech. Univ., Hyderabad	1972	1,28,384	555	8989	453	06.88
16.	Narendar Dev Univ., of Agi. & Tech., Faizabad	1975	35,326	190	500	-	-
17.	Orissa Univ., Of Agri & Tech., Bhuvneshwar	1962	1,53,000	216	2904	249	26.1
18.	Roorkee Univ.,Roorkee	1949	2,46,965	-	2,600	500	72.51
19.	Thapar Inst. of Engg. & Tech., Patiala	1956	20,000	293	1,163	101	09.00

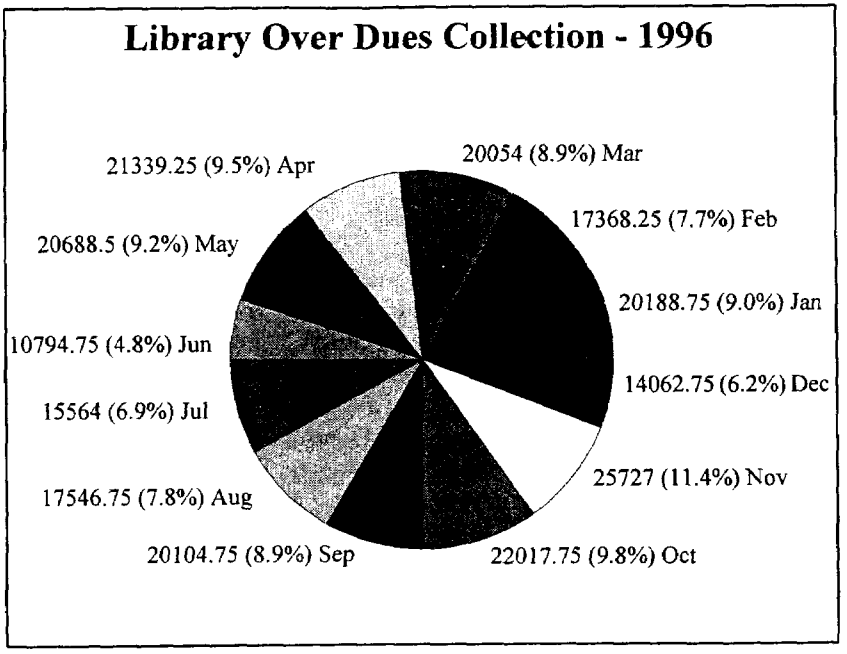
Source: The World of learning, 1995.
Universities handbook, 1995.

SMAPLE LIST OF S & T JOURNALS INDICATING PRICE HIKE

Sl. No.	Title	1995	1996	1997	Percentage
1.	Intl. Jl. of Electrical Power & Energy Systems (ELE)	GBP. 345/- (Rs. 16,836)	GBP. 480 (Rs. 25,584)	$. 870/- (Rs. 31320)	22%
2.	Inorganica Chemica Acta	SFR 5200 (Rs. 1,24,280)	SFR 5460 (Rs. 1,59,978)	$ 5283/- (Rs. 1,90,188)	19%
3.	Progress in Aerospace Science (AER)	GBP. 275/- (Rs. 13,667/-)	GBP. 350/- (Rs. 19,600)	$. 838/- (Rs. 30,168/-)	53%
4.	ACTA Astranautica (AER)	GBP. 1125/- (rS. 55,912/-)	GBP. 1170/- (Rs. 57,915/-)	$ .1966/- (Rs. 70,776/-)	22%
5.	Physica Status Solidi (PHY)	DM. 5286 (Rs. 1,21578)	DM. 5700 (Rs. 1,34,520/-)	DM. 6800 (Rs. 1,65,240/-)	23%
6.	Talanta (Chemistry)	GBP. 745 (Rs. 32,702/-)	DFL. 2475 (Rs. 48,262/-)	$. 1852 (Rs. 66,672/-)	38%
7.	Tetrahedron (Incld Asymmetry) (CHY)	GBP. 4610 (Rs. 1,99,297)	GBP. 4610 (Rs. 2,58,160)	$. 8506 (Rs. 3,06,216)	18%
8.	Tetrahedron letter (CHY)	GBP. 3435 (Rs. 1,70,719)	GBP. 3775 (Rs. 2,11,400)	$ 6845 (Rs. 2,46,420)	16%
9.	Chemical Physics Letters (CHY)	DFL. 10625 (Rs. 1,92,312)	DFL. 11970 (Rs. 2,38,203)	$. 7918 (Rs. 2,81,448)	18%

10.	Composite Science & Technology (AEF)	GBP. 941 (Rs. 1,45,920)	GBP. 1060 (Rs. 59,335)	$. 1926 (Rs. 69,336)	17%
11.	Computers & Chemical Engg. (CHE)	GBP. 615 (Rs. 30,012)	GBP. 738 (Rs. 39,335)	$. 1403 (Rs. 50,508)	28%
12.	Intl. Jl. of Energy Research (INT)	$. 1095 (Rs. 34,602)	$. 1445 (Rs. 51,153)	$. 1795 (Rs. 6,41,620)	26%
13.	Intl. Jl. of Fatigue (MET)	GBP. 330 (Rs. 16,104)	GBP. 400 (Rs. 21,320)	$ 851 (Rs. 30,636)	43%
14.	Intl. Jl. of Head & Mass Transfer (INT)	GBP. 1235 (Rs. 61,379)	GBP. 1525 (Rs. 85,400)	$. 2918 (Rs. 1,05,048)	23%
15.	Science Abstracts (INSPEC ON CD-ROM)	Rs. 2,74224	Rs. 3,41,000	Rs. 3,88,440	14%


Library Xerox Cash Collection - 1996
7692 (6.2%) Jun
6168 (5.0%) May
5440.5 (4.4%) Apr
9683.4 (7.8%) Jul
6375 (5.2%) Mar
6709.95 (5.4%) Feb
6094.35 (4.9%) Jan
20047 (16.2%) Aug
8365 (6.8%) Dec
8377 (6.8%) Nov
13958.4 (11.3%) Sep
24567.6 (19.9%)


Library Over Dues Collection - 1996
21339.25 (9.5%) Apr
20054 (8.9%) Mar
17368.25 (7.7%) Feb
20688.5 (9.2%) May
20188.75 (9.0%) Jan
10794.75 (4.8%) Jun
14062.75 (6.2%) Dec
15564 (6.9%) Jul
25727 (11.4%) Nov
17546.75 (7.8%) Aug
20104.75 (8.9%) Sep
22017.75 (9.8%) Oct

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CDS/ISIS AS AN APPROPRIATE AND SUSTAINABLE SOFTWARE TECHNOLOGY FOR THE DATABASE CREATION : AN EXPERIENCE

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Abstract This paper introduces the concept of Data base and Bibliography Database. Identifies the software known as "CDS/ISIS" as an appropriate and sustainable software technology for the design and development of bibliogrphy databsese which has been used and experienced by the authors of this paper. Explains the proceture involved in the creation of such databases for books (simple and composite books), periodical articles, and theses and dissertations, based on common communication Format (CCF) using Micro CDS/ ISIS (Version 3.07). Presents with illustrations the stages involved in the design and development of databases such as Field Definition Table (FDT), work sheet, Field Select Table (FST) and Display format according to AACR2. Finaly arguew that the disign would provide a general framework that will enable libraries and bibliographic agencies to devolop similar such databases.

INTRODUCTION

The efectiveness of any service Library/Information Centre is based on as to haw the information materials are organised in the LIbrary/Information Centre. With the impact of computer technology, the library operations are changed considerably. In the recent years the concept of resource sharing

and netwoking is preominately influencing in the service aspects of any library. For this purpose a sound, structured, feasibility for the exchange of bibliographic details of the library holdings is an essential tool. Accordingly the UNESCO has developed a software package namely CDS/ISIS which has been widely used, with standard bibliographic exchange format, i.e. Common Communication Format (CCF), to design and develop bibliographic data bases for various bibliographic forms.

SCOPE

This paper attempts to present the methodology in the design and development of prototype bibliographic data bases for various bibliographic froms like bokks (both simple and composite books) and periodicals and theses and dissertations using the Micro CDS/ISIS sorgware based on the Common communication Format (CCF). This paper is based on the authors experiences in the design and development of such bibliographic databases using CDS/ISIS software.

DATABASE

It is a collection of interrelated values of such a nature that they might be represented as a number of files but but a single file. Depending upon the nature of the database management systme, these files may be integrated permanently into a single connected structure or integrated temporarily for each interrogation, known as a query. In more common usage the word offten means any accessible collection of information and in that case only a limited set of data values may be used to specify queries.

3.1. BIBLIOGRAPHIC DATABASE

Bibliographic data base contains references to books, journal articles and other forms in various branches of knowledge. Some of the fields in any bibliograaphaic data base are: abstracts, accession number, call number, author, subject code, ISBN, imprint, collation, series name, subject headings, etc., and any element describing a document bibliographically. A bibliographic data base is a key to both the information retrieval services and house-keeping operation in libraries.

3.2 Objectives of a databses

The following may be stated as objectives of any bibliographic database:

- redundancy can be reduced
- inconsistency can be avoided to some extent
- the data can be shared
- standards can be enforced
- security restrictions can be applied
- integrity can be maintained
- ready re ckoner for the management

AN OVERVIEW OF MICRO CDS/ISIS

CDS/ISIS is a menu driven generalized informatin retrieval package designed specially for computerized management of structured textual database. It is an extremely useful tool for creating bibliographic databases such as Library catalogue, bibliography, thesauri and other textual databases. The CDS/ISIS package facilitates for creating a database, editing, searching, retrieving and displaying the data in the user defined manner.

5.1 Evolution

Micro CDS/ISIS software development by the UNESCO and supplied free of cost to non-profit organisations in its Member countries and now widely use in developing countries and in Europe. Version 1.0 of Micro CDS/ISIS released in December 1985. The version 2.3 released in March 1989. VErsion 3.0 released for public usage in 1992, introduced new facilities such as LAN usage, that in providing for concurrent access to a database by several users for different operations in the database, with the exception of some function such as inverted file service, master file backup and restore, export and import of the records. the version 3.07 released in 1993 with some more additional facilities of version 3.0.

5.2 Features of CDS/ISIS

* Defining the databases containing user selected data elements
* Modification, correction, and deletion of records in databases
* Automatic creation of fast access field e.g. inverted/index file for any or all of the fields (data elements) in a record in each data using indexing techniques
* Retrieval of records from one of more databases using simple or complex operators including Boolean, adjacency, greater than, less than, equal to, not equal to and other operators
* Displaying the list of terms in the index file facilitating the selection of terms to formulate search expressions
* Free text searching

* Displaying the number of hits (postings and records) for each component of the search expression
* Re-execution of an earlier search expression in the same or another database in the same direcroty
* Displaying the records according to defined format
* Softingand retrieving of the records in a desired sequence
* Printing out entire database or particular set of retrieved records
* Exchanging or merging the records of two or more databases that are in the compatible formates (ISO 2709)
* Enhancing the capabilities of interfacing with other facilities using the CDS/ISIS PASCAL programs.

CDS/ISIS has powerful retrieval capabilities to retrieve the data from the database. The CDS/ISIS search language is based on Boolean operators. CDS/ISIS basically permits two approaches to informatin retrieval.

- Search via an indexed term; and
- free text search

ISIS allows to use of three types of Search terms:

- A precise term
- A root (right truncated term)
- An any term

A precise term needs to be specified exactly as it is known to CDS/ ISIS. therefore, the best way to carry out a precise term search is through the inverted file.

Significant improvement is recall, which can be obtained by searching a right truncated term. Recall can also improved by using an any term. CDS/ISIS permits combinatin of search terms to formulate a search expression by means of search operators. The three basic operators are OR (+), AND (*), and NOT (*). The operatore can be further qualified by a set of field identifiers and proximity operators.

CDS/ISIS permits formulation of complex search expression with two or more search terms combined using search operators.

DESIGN AND DEVELOPMENT OF BIBLIOGRAPHIC DATABASES

Much attentaion is to be paid towards the design aspects in order to make bibliographic database accessible to others for the purpose of resource sharing. One of most important features of Micro CDS/ISIS is that a record

can be transferred to a standard format. Design of bibliographic databases based on CCF has been considered here. Almost all the mandatory CCF fields have been adopted with modifications for the purpose of achieving better results.

The display format has been designed in accordance with the format of AACR2.

The creation of bibliographic data bases according to CDS/ISIS involves the following stages.

1. Field Definition Table (FDT)
2. Worksheet
3. Field Select Table (FST)
4. Display/Print format

7.1 Field Definition Table (FDT)

It deals with various bibliographic elements with assigned tags given CCF, length in terms of characters, whether it is a repeatable field or not, its subfield delimiters, if any, are presented Separate FDTs have been created for 'Books' Journal articles "Thesis and dissertations" (FIG. 1,2, & 3)

FIG. 1

FDT FOR BOOK

Field Definition Table (FDT) Data Base : Book

?	Tag	Name	Len	Typ	Rep	Delimiters/pattern
-	100	ISBN	100	X	R	ab
-	200	TITLE	500	X	R	ab
-	250	EDITION	60	X	R	ab
-	270	MAIN ENTY - PERSON	160	X		ab
-	280	MAIN ENTRY - CORPORATE	160	X		abc
-	300	NAME - PERSON	260	X	R	abg
-	310	NAME - CORPORATE	260	X	R	abcg
-	400	LACE & PUBLISHER	160	X	R	ab
-	440	YEAR	80	X	R	ab

–	450	LOCUS STATEMENT	300	X		abcd
–	460	PHYSICAL DESCRIPTION	80	X		abc
–	480	SERIES	160	X	R	abc
–	500	NOTE	200	X	R	
–	540	IN NOTE	300	X	R	abcd
–	600	ANNOTATION	500	X		
–	620	SUBJECT HEADINGS	200	X	R	

FIG. 2

FDT FOR BOOK

Field Definition Table (FDT) Data Base : JL

?	Tag	Name	Len	Typ	Rep	Delimiters/pattern
–	100	ISBN	100	X	R	ab
–	200	TITLE	500	X	R	ab
–	270	MAIN ENTY - PERSON	160	X		ab
–	280	MAIN ENTRY - CORPORATE	160	X		abc
–	300	NAME - PERSON	260	X	R	abg
–	310	NAME - CORPORATE	260	X	R	abcg
–	500	NOTE	200	X	R	
–	540	IN NOTE	300	X	R	abcd
–	600	ANNOTATION	500	X		
–	620	SUBJECT HEADINGS	200	X	R	

FIG. 3

FDT FOR THESES

Field Definition Table

?	Tag	Name	Len	Type	Rep	Delimiters pattern
– –	100	Name	50	X		a b

--	110	Title	300	X	
--	120	Year	50	X	
--	130	Guide	50	X	a b
--	160	Keywords	200	X	a b c
--	340	Abstracts	800	X	
--	350	No. of pages	50	X	

7.3 Field Select Teble (FST)

For retrieving data from the data base, the FST is created to index the data elements used in the data bases (FIG. 4, 5 & 6)

FIG. 4

FST FOR 'BOOK' DATA BASE

Data Base Name : Book FST for Inverted File FST Name : Book

	ID	IT	Data Exatractin format	
-	200	0	v200^s	
-	270	0	v270^a¦ ,	¦v270^b
-	280	0	v280^a¦ ,	¦v280^b¦ (¦v280^c¦) ¦
-	300	0	(v300^a¦ ,	¦v300^b/)
-	310	0	(v310^a¦,	¦v310^b¦ (¦v310^c¦) ¦
-	440	0	v440^a	
-	480	0	v480^a¦,	¦v480^c
-	620	2	V620/	

FIG. 5

FST FOR 'JOURNAL' DATA BASE

Data Base Name : JL FST for Inverted File FST Name : JL

	ID	IT	Data Exatractin format	
-	200	0	v200^s	
-	270	0	v270^a¦ ,	¦v270^b

–	280	0	v280^a¦ ,	¦v280^b¦ (¦v280^c¦) ¦
–	300	0	(v300^a¦ ,	¦v300^b/)
–	310	0	(v310^a¦,	¦v310^b¦ (¦v310^c¦) ¦
–	540	0	v540^a	
–	620	2	v620/	

FIG. 6

FST FOR 'THESIS' DATA BASE

Data Base Name : Theses FST for Inverted Files FST Name : Thesis

	ID	IT	Data extraction Format
– –	400	0	(mhl, "Name ::" v1001)
– –	120	0	v 120 ¦ % "
– –	130	0	(mhl, "Guid ::" v1301)
– –	160	0	(mhl, "Kw ::" v160^a¦% V160^b¦%¦v160^c¦%¦)

7.4 Display formats

The display format includes a typical entry structure according to AACR2 with extended features are given in record Numer 1-4.

RECORD NUMBER - 1

SAMPLE DISPLAY FOR A BOOK

HINDUISM

Vivekananda, Swami.

Six lectures by Swami Vivekananda : with reports of Ramakrishna Mission. — Calcutta : S.C. Mitra, 1897

198p. : 17 Cm. — (Swami Vivekananda series; no. 13)

It contains six lectures delivered by Swamiji namely (1) the address of the Hindus of Calcutta and seamy's reply; (2) vedanta delivered at Calcutta (3) Maya, delivered at London; (4) Sri Ramakrishan Paramahansa Deva, delivered at New York, and (6) lecture at Floral Hall, Colombo. It also contains

the description of Swamiji's reception in India and R.K. Missions's famine relief works during 1897.

RECORD NUMBER - 2

SAMPLE ENTRY FOR A PART OF THE BOOK

YOUTH

Ranganathananda, Swami.

Youth and human destiny / by Swami Ranganathanada.

In : The Ramakrishna movement : Ramakrishna Vivekananda youth convention souvenir 1982 / edited by Mission, 1982. — pp.57-69. : 22 cm.

Interprets the art and science of procession the youth for the great saving work of bringing about a new age of growth, hope and fulfilment for all in the fear frozen world. Depicts Swamiji as the guide message of Also gives message of Swamiji on vedantic humanism.

RECORD NUMBER - 3

SAMPLE ENTRY FORMAT FOR A PERIODICAL ARTICLE

REALISATION

Raghavachar, S.S.

The imports and impacts of Swami Vivekananda's life.— VEDANTA KESARI 37 (12), April (1951), pp.464 - 467

According to the author, sahana or way of realisation as conceived by Swamiji is a four fold harmony. Firstly, it is the harmony between the individual and universal, thirdly, it is the harmony between the ethical, devotional, psychical and intellectual powers of man, and fourthly, it is the harmony of all religions.

RECORD NUMBER - 4

SAMPLE ENTRY FORMAT FOR A THESES

SELF CITATINO STUDY : LIBRARY SCIENCE PERIODICALS

SARUMATHI,K.

Self citations study in the journals of Library science 1994. 43p (Guide : Manorama Srinath)

It finds out the pattern of self citations in three library science periodicals namely journal of librarianship published in U.K. Library trends published in U.S.A. and Journal of Library and Informatio science published in India, during 1985-89. The study finds out that higher the citations, the less number of self citations were found, Bibliography is given at the end.

CONCLUSION

The procedure involved in the design and development of there data bases will enable libraries and bibliography agencies to develop similar data bases for providing the bibliographic service either on demand or in anticipation. This design will provide a general framework woreby any bibliographic database can be created.

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EMPIRICAL STUDY OF PRICE BEHAVIOUR OF PERIODICALS ORIGINATING FROM U.K., U.S.A. AND INDIA FROM 1984 TO 1993.

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INTRODUCTION

The human knowledge is growing exponentially resulting in spectacular changes in scientific, technologica, Socio-economic and political system all over the world. In order to keep a scientist abreast of the latest developments in his field and to maintain academic standards at international level, collection of latest periodicals and other documents is unavoidable. There is thus almost an inelastic demand for periodicals and other latest research works. Such a demand pattern has to reconcile itself however to frozen or shrinking budget provisions and enhanced subscription rates of periodicals and research documents (particularly in real terms).

India is a developing country having the second largest education system in the world after U.S.A. It has not been able to provide sufficient grants to its universities due to various political and economic reasons. Further the rapid increase in prices of periodicals coupled with decreasing purchasing power of rupee have hindered the collections of university libraries. For example the devaluation of rupee twice in 1991 has caused rapid increase in prices of foreign periodicals.

The problem of escalating prices of documents due to foreign exchange fluctuations and decreasing budgets encountered by university libraries is a phenomenon of developed countries like USA and UK as well as of libraries of developing countries. In inflationary situations, which is the order of the day almost over the whole world, the prices of periodicals are expected to maintain an upward trend and the library budgets squeezing tendencies. It is such a scenario that the librarian has to take decisions to optimise the periodical collection. That is to ensure the continuity of collection of periodical elimination possibilities.

DATA BASE LIMITATIONS

The scope of the analysis is confined to periodicals received by Punjabi University Library during the decade of 1984 to 1993. Punjabi University Library received 1150 journals including 300 journals received on gratis during 1984. Of these periodicals 343 have been regularly received from, within the country (142), USA (138), UK (63). Generally a similar pattern is known to be observed by other libraries (PU, GNDU).

METHODOLOGY

Prices of the subscribed journals are computed from the actual annual subscription payments as per the stock register of the library. For the purposes of conversion of dollar & pound payments in terms of Indian currency Good Offices' Committee conversion rates which were prevalent at the time of payment during 1984 to 1993 have been used. In the book trade the official exchange rates are generally higher than official exchange rates but are relatively stable over the specified time period which generally varies from 1 to 2 months.

Table 1:— Price per periodical and variations there in among the periodicals published from USA, UK & India

	Price Per periodical		
	UK	USA	INDIA
No. of Journals	63	138	142
Currency	P 110.4	$ 65.65	Rs.
1984	(161.0) [87.1]	(276.5) [91.5]	(98.0) [80.4]
1985	72.7 (159.0) [92.3]	120.1 (281.0) [94.7]	93.7 (103.0) [86.4]
1986	78.9 (158.0) [95.3]	131.0 (282.0) [97.0]	105.0 (102.0) [92.1]
1987	85.1 (100.0) [100.0]	141.0 (274.0) [100.0]	116.0 (104.0) [100.0]
1988	90.6 (157.0) [106.1]	155.0 (278.0) [103.9]	134.0 (100.0) 108.0]
1989	97.4 (157.0) [113.6]	170.6 (275.0) [108.4]	150.0 (101.0) [117.3]
1990	11.2.0 (150.0) [120.9]	188.0 (269.0) [112.9]	168.0 (106.0) [129.9]
1991	122.0 (149.0) [128.8]	205.0 (264.0) [117.3]	189.0 (112.0) [147.1]
1992	133.0 (148.0) [134.0]	224.0 (256.7) [120.6]	214.0 (114.0) [162.0]
1993	145.0 (147.0) NA.	242.7 (253.4) NA.	235.0 (113.0) NA.
% Price rise in 1993 over 1984	121.04	119.95	175.82
G.R.	9.18	9.30	12.27

Notes :

Figures in ( ) denote co-efficient of variation (C.V.); C.V. = standard deviation/mean

Figures in [ ] indicate overall domestic price rlated deflators taken from *World Tables* 1994, Maryland : John Hopkins University Press.

G.R. stands for annual compound growth rate computed by using all the ten year figures. (with the help of semi-log function).

Source: data has been culled from periodical stock register maintained by the Punjabi University Library through the courtesy of the Librarian.

To guide the analysis yearwise average price per journal for all the 343 journals taken for this study has been computed. To capture time profiles of average price behaviour their growth rates have also been calculated. For price variations across journals have been captured with the help of co-efficient of variation.

PERIODICAL PRICES IN ORIGINAL CURRENCIES

3.1 American Periodicals

A lot of variability has been observed in the periodical prices (listed for libraries) irrespective of their country of origin. During 1993, for instance the average Dollar price of an American periodical received in India (based on 138 journals) was Dollar 242.7. Across the 138 journals it ranged from Dollar 5075 (Biological Abstracts) to Dollar 20 (Modern Fiction Studies). The over all average rate of price variation across the 138 journals, measured in terms of co-efficient of variation, turned out to he 253.4 per cent. In other words prices of American journals varied around its mean value of 242 by as high a mark up as 253.4.

3.2 British Periodicals

In contrast to American periodicals the average pound price of a British journal received in India (based on 63 journals) was not only substantially low (Table 6.1) but displayed relatively low variability as well. For instance, during 1993 the average cost of British periodical turned out to be pound 145; it was minimum for the journal "Middle Way" (Pound 9.5) and maximum for the journal "Physics Abstracts" (Pound). The value of the co-efficient of variation turned out to be Pound 147.

3.3 Indian Periodicals

The average Rupee price of Indian periodicals lies between the average Dollar price of an American Journal and average Pound price of a British Journal. In fact it is more nearer the value of an American journal. During 1993, for instance a representative Indian journal costed Rs. 235. The price was minimum (Rs. 12) for "Vishav Sanskritam" and maximum (Rs. 1800). For interestingly the variability index of prices of Indian journals is lowest (130) compared to British Journals (£147) & American journals ($253).

3.4 Comparative Study

A glance over the average price of an American, British and Indian journal during the time profile of 1984 to 1993 reveals that (i) the representative price of an Indian journal has invariably lied between the corresponding price of a British and American journal; (ii) upto 1986 it showed a tilt towards British journal and from 1987 onwards the price of an Indian representative journal tended to tilt towards the average price of an American journal; (iii) over the decade the percentage price rise has been maximum in the case of Indian journals (175.82%) and at a low level in the viscinity of each other in the case of American journals (121.04). The registered maximum growth in the prices of an Indian journal is partly attributed to two digit inflation observed during the 1990, 1991, 1992. The general inflation rate in American and British has always been at a single digit level, although it was much lower in American than British (table 1); (iv) the preceding behaviour gets validated by annual growth performance of price of representative journal. It is maximum (12.27% per annum) in the case of Indian journal and around 9 per cent per annum in the case of American and British periodicals; (v) the price variability level among the journals originating from America is invariablly highest and those originating from Indian is lowest; and (vi) the temporal direction of price variability is positive in case of Indian periodicals and negative in the case of American and British periodicals, i.e. inter journal price variation is increasing in India. But it is decreasing in American and British journals.

FLUCTUATING CONVERSION RATES

The market prices paid by a librarian to acquire issues of foreign journals has two components : (i) prices of the journal in the currency of country of origin, (ii) the prevailing exchange rate in countries that enjoy a stable exchange rate. The rise in market price of journal is primarily owing to enhancement in the price of journal by the publisher. However, in countries where foreign exchange rate is slowly and steadily becoming unfavourable, the rise in market prices encountered by librarians is likely to be dominated by the

conversion factor. Interestingly, it will be the third set of countries which enjoy steady improvement in their exchange rates. The librarians may either be enjoying stable or even marginally falling market prices of foreign journals.

Since foreign exchange has been steadily unfavourable to India it is hypothesised that it will be the main culprit for enhancement of budgetary provision that Indian librarians have to set aside for the purchase of foreign academic journal

Table 2 Comparative figures for average cost of journals originating from USA, UK and India.

	USA	UK	India	Average	% rise over Previous
No. of Journals	138	63	142	343	Year
1934	1159.20	1069.28	85.20	696.27	
1985	1489.24	148.66	93.70	846.74	21.61
1986	1689.90	1380.75	105.00	974.44	15.08
1987	1974.00	1676.47	116.00	1141.65	17.16
1988	2123.50	134.00	1310.77	14.81	
1989	2627.24	2581.10	150.00	1589.07	21.23
1990	3346.40	3136.00	168.00	1986.61	25.02
1991	3874.50	4501.80	189.00	2457.18	23.69
1992	6406.50	6650.00	214.00	3876.89	57.78
1993	7717.86	751.00	135.00	4569.37	17.86

Note : For conversion rates refer to Table 3

Table 3 : Conversion rates of foreign. Currencies (In Rupees) Punjabi University, Patiala from 1984 to 1993.

YEAR	CURRENCY	
	US Dollar	Sterling Pound
1984	10.5	16.3
1985	12.4	15.8
1986	12.9	17.5
1987	14.0	19.7
1988	13.7	24.3
1989	15.4	26.5
1990	17.8	28.0
1991	18.9	26.9
1992	28.6	26.9
1993	31.8	51.8

Notes : 1. The payments for journals is made in advance. To ensure deliveries of the journals in the first quarter of the year generally, advance payments are made during October to December. Accordingly, the average conversion rates reported are the one prevalent during October to December (depending upon their availability) in the preceding year.

2. Before adoping this criteria, a number of alternatives were tried and compared with actual payments made in Indian currency to foreign publishers. The chosen criteria represented the nearest approximation of actual payments.

Source : Good offices committee Rate lists relating from October to December months of the respective years.

To avoid the problems of changes in day to day exchange rates the book trade has set us a Good Offices Committee (GOC) Conversion rates. It releases slightly over valued exchange rates that remain stable over the specified period of one to two months. Since payments for journals are made in advance, during Oct. to Dec., the average conversion rates reported and used are those prevalant during October to December. In the preceeding year which are the rates released by GOC.

In order to estimate actual increase in cost of foreign periodicals in terms of Indian Rupee, the rates mentioned in table 1 have been converted into Rupee by respective GOC conversion rates (Table 3).

There are two reasons regarding the hike in prices of foreign periodicals :

(i) Constant subscription rates but dearer foreign currencies; and
(ii) Increase in both subscription as well as exchange rates.

4.1 American Periodicals

Let us examine first, the average price behaviour of American periodicals received in India. It may be recalled that the average behaviour is based on 138 American imported periodicals. During 1984 to 1993, the annual price rise varies between 7.57% (1988) to 65.35 (1992). The minimum price rise during the year 1988 is primarily attributed to a favourable exchange rate; the Rupee value of Dollar depreciated from Rs. 14(1987) to Rs. 13.70 (1988). Again, it is the devaluation (twice) of Rupee that explains the maximum price rise of 65.35% in 1992. Consequently, it is the absolute change in exchange rate that is more associated

Table 4 : Decomposition analysis of price rise of imported journals

	Price Rise (%) over the Preceeding year						
	U.S.A.			U.K.			
Year	Own Currency	Exchange Rate	Total	Own Currency	Exchange Rate	Total	India
1985	8.79	19.68	28.47	10.82	-3.40	7.40	9.98
	(30.87)	(169.13)	(100)	(145.79)	(-45.79)	(100)	
1986	9.08	4.39	13.47	8.53	11.68	20.21	12.06
	(67.39)	(32.61)	(100)	(42.21)	(57.59)	(100)	
1987	7.03	9.18	16.91	7.86	13.56	21.42	10.48
	(45.39)	(54.61)	(100)	(36.69)	(63.31)	(100)	
1988	9.93	-2.36	7.57	6.46	24.86	31.32	15.52
	(131.12)	(-31.12)	(100)	(20.63)	(79.37)	(100)	
1989	10.06	13.66	23.72	7.51	9.73	17.24	11.94
	(42.41)	(57.59)	(100)	(43.54)	(56.46)	(100)	
1990	10.20	17.17	27.37	14.99	6.51	21.50	12.00
	(37.26)	(62.74)	(100)	(69.72)	(30.2)	(100)	
1991	9.04	6.74	15.78	8.93	34.62	43.55	12.50
	(57.28)	(42.72)	(100)	(20.50)	(79.50)	(100)	
1992	(9.27	56.08	65.35	9.02	38.70	47.72	13.22
	(14.19)	(85.81)	(100)	(18.89)	(81.11)	(100)	
1993	8.35	12.12	20.47	9.02	3.92	12.95	9.81
	(40.79)	(59.21)	(100)	(69.69)	(30.31)	(100)	

Notes : 1. Figures in prenthesis are respective per cent share in total price rise.

with variations in price rise of American imported periodicals. In this context, it is worth nothing that exchange rate variation let to a price rise varying from 2.36% to 56.08% (Table 4, Column2).

The other component of price rise is obviously the price hike in subscription rate. On an average it varied from 7.03% (1986-87) to 10.02% (1989-90) during 1984 to 1993.

A comparison of percentage rise in price owing to subscription rate reveals that one owing to exchange rate is at one digit level (with two exceptions) and the later at two digit level (with three exceptions). As expected, consequently, the exchange rate dominates the price rise in more than two-third of the cases i.e. the nine pointsfor which annual change in price is examined (table 4, figures in brackets column 1 and 2.

4.2 British Periodicals

A similar behaviour is observed when average price behaviour of 64 British imported journals examined (Table 4, column 4-6). For instance the overall price rise is again at two digit level (with one exception). It ranges between 7.51% (1989) and 47.72% (1992); where as the minimum price rise is associated with appreciation of Indian Rupee in terms of Pound, the maximum price rise is associated with devaluation of Rupee value against Pound value; the price rise owing to subscription rate is at one digit level (with two exceptions) and owing to exchange rate at two digit level (with three exceptions); and lastly dominance of exchange rate over subscription rates is in two-third of the cases.

A comparison of changes in the subscription rates of USA, UK and Indian periodicals recalls that the average rise in the price of Indian periodicals year after year generally excelled those that of its counter part published in USA and UK. In fact, the price rise generally is at two digit level in the case of Indian periodicals (with two exceptions) and UK (with two exceptions) periodicals.

To sum up, the preceding analysis lend credence to our hypothesis that many fold rise in the price of imported periodicals is substantially due to depreciation of Indian Rupee vis-a-vis, the foreign currencies. If this fact is ignored, the rise in subscription rate is more in case of Indian periodicals than those originating from UK and USA.

CONCLUSION

The purchase of periodicals in the university libraries despite of its huge financial resources has been badly effected by inflation and devaluation of Indian rupee. In this modern age of information technology the resource sharing through computer network is the workable solution to this problem. It can be at local level, state, national or international level. Secondly we can strengthen our resources by providing free based services to small scale industries or other corporate members. This can be possible after assessing the information needs of the industrial houses around the area by conducting the survey.

MARKETING LIBRARY SERVICES FOR SUSTAINABLE LIBRARIANSHIP

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Abstract Explains the concept of `marketing' as generally understood and then relates this concept to non-profit organizations such as libraries. Discusses the relevance of `sustainable librarianship'. Dwells on the difficulties of marketing library services faced by the libraries and the need to market. Explains in detail the various kinds of skills such as analytical skills, planning skills, organizational skills and control skills which the librarians need to inculcate in themselves to be successful marketrs. The various concepts of marketing i.e marketing research and analysis, marketing segmentation, marketing mix, deelopment of new services and products, princing and market evaluation have been related to the skills that librarians of today, need to cultivate in themselves for sustainable librarianship. Lastly, identifies the saleable library services which will augment the financial resources of the library.

Man has been performing the marketing function since the dawn of civilization, but the modern concept of marketing or philosophy dates back from the early 1950's. According to Peter Drucker's famous contention "Marketing.... is the whole business seen from the point of view of its final result, that is, from the customer's point of view". The definition of marketing as given by marketing Guru Philip Kotler is :

> "Marketing is the analysis, planning, implementation, and control of carefully formulated programs designed to bring about voluntary exchanges of values with target markets for the purpose of achieving organizational objectives. It relies heavily on designing the organization's offering in terms of the target markets' needs and desires and on using effective pricing, communication and distribution to inform, motivate, and service the markets".

Marketing in generally thought of as synonymous with profit - making. The study and application of marketing in nonprofit settings is a relatively recent development. Marketing is now being extended beyond the profit sector of the economy. Thus it is no longer the issue whether marketing concepts and techniques can be transferred to manage products and services of non-profit organisations more effectively, but it is rather the extent, nature and effectiveness of such transfer. Both private and public non-profit organisations such as museums, hospitals, post-offices, libraries etc. are thus beginning to recognize, that transfer of the tools of marketin gmanagement and research has much potential in their own operations. Indeed numerous successes testify to this.

MARKETING FOR SUSTAINABLE LIBRARIANSHIP

According to Oxford Advanced Learner's Dictionary the meaning of sustainable is "that can be kept going or maintained". In 1987, the World Commission of Environment by Development, appointed three years earlier by the U.N. General Assembly and headed by the Norwegian Prime Minister Gro Harlem Brundtland, made sustainable development the theme of its entire report,"-- Our Common Future." In the words of Brundtland Commission "Sustainable development is development that meets hte needs of the present without compromising the ability of the future generations to meet their own needs". We can deduce the definition of sustainable librarianship in view of the above. According to Mr. A.R. Sethi, Librarian, Panjab University, "Sustainable librarianship means the combination of philosophy, principles and practices that ensure the continued growth of stock, staff and services in libraries in the changing scenario". To achieve this growth, marketing is a powerful tool. The marketing of information services offered by libraries is perhaps best described as being in an immature stage of development as compared with most industrial goods.

DIFFICULTIES OF MARKETING

The difficulties that characterize the marketing of information services are :--

a) less knowledge or no knowledge at all of marketing by library professionals. We are not clear of the needs and wants of our users.

b) the value of information products and services in any research and development activity is difficult to judge.

c) library professionals are not geared to the marketing strategies. The library schools do not prepare them for the marketing environment.

d) the traditional role of librarians was passive. Library professionals till

now never reached out to the users. Promoting library services is an unexplored area for them.

e) the controversy that information should be treated as a commodity or not is detrimental to marketing.

It is thus very important, to prepare the library personnel to overcome these difficulties for sustainable librarianship. They need to inculcate a variety of skills to survive and sustain themselves in the competitive world of tomorrow.

NEED FOR MARKETING LIBRARY SERVICES

Librarians often themselves are reluctant to go in for marketing. But marketing has some definite advantages, other than being a product of the technological age. Some of the direct advantages of marketing are :--

1. Improved satisfaction of the target market : Till recently the libraries were anticipating the demands and needs of the users and building their collections and services accordingly. The result was that some of the anticipated demands were never translated into actuals and thus the already scarce resources were being wasted. On the other hand, the users had to make do with whatever services were being offered and largely they remained unsatisfied. Marketing identifies the target group, their needs and demands, and helps the libraries to reorient their services and develop their collections according to the needs of the users. This increases user satisfaction.
2. Best utilization of the library resources : As mentioned above, users satisfaction will increase and the libraries will be able to best utilize their funds. All the services will be provided keeping in view the needs of the target group. This will result in best utilization of the library resources in terms of collection, staff, time, etc.
3. Augmenting library funds : The sale of some of the library services will bring in additional funds for the libraries. They can utilise these funds to provide standard and timely services. The prices of books and journals are sky-rocketing every year where as funds of libraries are not increasing at the same rate. In case of purchase of foreign publications the increase in conversion rate of foreign currencies also affects their cost. Thus, for sustainable librarianship the libraries now must raise their own funds.
4. Improved library services : Marketing brings in an element of competition, which will result in providing better services. Focus will be on savint time, money and effort and also adapting to the latest technology. This will improve the image of librarians vis-a-vis the changing technological scenario.

SKILLS FOR MARKETING

The various skills required for competitive marketing are :--

I **ANALYTICAL SKILLS** : -- The librarians must be skilled at two basic analytical tasks --

(i) Market analysis : We must be able to identify our users, their needs and wants, the aims and current research work going on in our institution, etc. Marketing encourages a focused approach for meeting user demands. We must target a manageable and defined group of users and provide them specifric library products. We must be sure of our mission and scope and also of the expectations of our users. Thus, user surveys are very helpful in establishing our target group and the services we need to provide.

(ii) Product analysis : What services are already available to the users and how the target group feels about each of them? The services being offered should be current and relevant to the needs of the users. Reviewing the services being currently rendered to the users is thus very important.

In short market analysis is `what the user wants' and product analysis is `what we are providing'. A synchronization of the two is a must for sustainable librarianship.

II **PLANNING SKILLS** : -- The major planning skills that a librarian must have for marketing are--

(i) Product development : The librarian should know where to look for appropriate ideas, how to choose and refine the service concept, how to stylize and package the product, and how to test it. Standardizing library services and packaging them is a good idea. Most of the requests of the users should be met with standard products. How to best provide a service with spending the minimum time and minimum cost involvement is a skill to be mastered by the librarians.

(ii) Pricing : According to Aristophanes in Plutus," where there's no fee there's no skill." We must develop an attractive set of terms for our services. The actual value of the service provided should be reflected in the price. We must make sure to make the user aware of the actual hardwork and time and effort that has gone into providing the service, only then the price of the service will be justified. Information is not a solid entity, so it is difficult to set a price for it. The value of the information to the user should determine its price.

(iii) Distribution : i.e. facilitation. The marketer should determine how to

get the product into circulation and make it accessible to its target market. Sometimes when the target group is located far from the library, postal or mobile or telecommunication channels may have to be explored. To reach out to the users is the call of the day.

(iv) Promotion : Stimulating market interest in the service being offered is very important. Reaching out to the users through newsletters, bulletins, lists of new acquisitions in the stock and advertising the services being offered by the library are efforts worth making, as these shall enhance the use of the library. Arranging book exhibitions and seminars on current topics is very beneficial. The users should be made aware of the services being offered by the library, only then the full worth of the libraries can be explored.

III **ORGANIZATIONAL SKILLS** : -- Organizing the various stages of marketing requires skills at various levels.

(i) Organizational design : Advantages and disadvantages of organizing market activity along functional, product and market lines must be understood. The marketing activity should flow along the aims of the institution which the library serves. Marketing should be a part and parcel of the organization policy.

(ii) Organizational staffing : The staff for marketing should be properly trained and skilled. Not only the internal staff but staff of other organizations may also have to be involved. To find, train and assign effective co-workers is a major task.

(iii) Organizational motivation : The whole organization, of which the library is a part, needs to be motivated for marketing activity. The finances have to flow from a higher authority. They must be convinced that marketing is needed in today's competitive world and they must be made aware of the advantages of marketing. There may be some initial hesitation on the part the authorities, but to motivate them is a skill required on the part of the librarians.

IV **CONTROL SKILLS** : -- To control the market so that it doesn't go out of bounds is very important.

(i) Market result measurement : The librarian must keep himself informed of the attitudinal and behavioural responses he is achieving in the market. This feed back is very important to gear the services to the ever-changing demands of the users.

(ii) Marketing cost measurement : He must keep himself informed of the costs and efficiency in carrying out his marketin gplans. The cost and efficiency ratio should be viable. The cost involved in providing a service should be proportionate to its benefit.

SALEABLE LIBRARY SERVICES

The main task before the librarians is to identify the library services which are saleable. He has to distinguish between the traditional role of libraries and the services that are provided to the user for his specific use. The traditional services of acquiring, maintaining and issuing of documents etc. have to be provided as per the prevalent practice. Only those library services that are provided to the user on demand may be priced. Due to resource crunch the libraries today are focusing on providing only those services to the users that are of their immediate use and direct relevance and that too on demand.

Services such as subject bibliographies on demand, database searches, photocopying, Internet browsing, e-mail, fax etc. can be provided as and when the demand arises and these services can be priced, the libraries need to build up the necessary infrastructure to privide such services. The price for each service, as mentioned before, is to be fixed keeping in view the time, effort and money put in and also the need and value of the information to the user. The money from such saleable library services will go a long way in augmenting the funds of the libraries which are always in short supply.

CONCLUSION

We have progressed from the agricultural age to the industrial agend now the information age. In this information revolution age `Information' is the crucial factor. According to a survey about 400 knowledge workers are spending a minimum of one hour a day, over one working year, just looking for and acquiring decision-making information. On an average salary of $ 50 per hour, the investment approximates to $ 5,000,000. Then to conver this information into knowledge and action another exponential amount is needed to be expended. The information professionals can assist in driving down these costs and increase the accuracy and speed of decision making. In today's world not only the cost involved but also the time factor is very crucial. Many a battle can be won by timely provision of information and action taken accordingly.

Thus, for sustainable librarianship it is very important for us to adapt to the changing scenario. We not only need to be oriented to the past tasks of librarians but also to seek new goals and pastures. We have to conserve our traditional values and image as also adopt new techniques. The techniques of marketing can be well adapted to our needs. The marketing concepts i.e. marketing research and analysis; marketing segmentation; planning and development of new products and services; marketing mix; and evaluation, can well be utilized by the librarians. We only need to broaden our outlook and be open to the new ideas.

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MARKETING OF CAREER INFORMATION : A SOURCE OF REVENUE TO LIBRARIES

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Abstract Highlights the importaance of career information products as potential marketable products for earning revenue to public and academic libraries. The marketing strategy for career information is discussed in detail. Sugeestions are made for designing career information products which can be sold to the target group by charging resonable price.

INTRODUCTION

Information marketing is fairly a new concept. It is only recently that serious talk on information marketing started even in the free market economies of the West. The potential for information products and services itself is steadily increasing. The influx of new entrants into the information business coupled with factors such as rising costs, declining funds etc made it necessary for libraries to reconsider their old passive non-profit making stand (Haravu 1988).

However most of the libraries are providing only routine and traditional services . Serious effort to develop new products and services to cater to the actual and emerging needs is still quite rare. In order to survive and succeed, organizations must know their markets, attract sufficient resources. convert these resources into appropriate products, services and ideas and effectively distribute to various consuming publics (Kotler 1985).

NEED FOR INFORMATION MARKETING

The demand for information products and services is steadily expanding as a result of the complex and multidimensional activities of the society. To survive in the modern competitive world libraries must rise up to the situation to provide the right information to the right users at the right time. For this, libraries have to use modern marketing techniques used in other business organizations.

These and other facors such as rising costs, change in information demand, increasing threat from the emerging information industry etc necessitate the use of marketing techniques in libraries. Modern libraries cannot abstain from the active information business as long as they have social commitment.

On the revenue point of view also, information marketing is important. Libraries are always the last to get new investment in space, staff and equpment. At the same time they are the first when budgetary cuts are required to bew applied (Haravu 1988). Libraries can no longer depend on the funding agencies as budgetary cut is common to almost all libraries. Without raising revenue on their own, most of the libraries cannot survive in the changing circumstances.

IMPORTANT INFORMATION PRODUCTS OF LIBRARIES

Marketable library products and services include materials such as books, films, discs, video tapes etc, Slective Dissemination of Information (SDI), Current Awareness Service (CAS), Reprographic Services, On-line Services, CD-ROM Search Service, Bibliographic and Indexing Services, Reference Services, Referral Service, Inter-library Loan, Translation Service, E-Mail Service etc.

Apart from these existing products/services, public and academic libraries can market career related information also which has a large potential demand. However no library in India has ever attempted seriously to design Career Information products with marketing aim.

CAREER INFORMATION AS A POTENTIAL INFORMATION PRODUCT

In a country with crucial umemployment problem, almost every one of the educated unemployed is preparing for various competitive examinations for getting a placement in government, semi-government or provate sectors. Those who have already got a placement which is not befitting their qualifica-

tions (Under employment situation) are also trying for getting higher posts. However, most of our libraries are still to recognize this group as a dominent group of potential consumers of information products.

Carefully designed information products which cater to the actual need of these career seekers will be potential marketable products which can earn revenue to libraries. As this group of consumers are large in number, even a marginal profit on these products will enable the libraries to acquire a large amount.

MARKETING STRATEGY FOR CAREER INFORMATION PRODUCTS

After market segmentation and need analysis, appropriate marketing strategy has to be developed using the marketing tool. This marketing tool is known as 'marketing mix' , which has four components known as "four ps". They are : 1.Product, 2.Promotion,3.Place (Distribution), and 4. Price.

5.1.Product

This component of the marketing mix is related to the designing of products. Decision relating to the kind of products and services the library offers to the target group is to be considered for product design.

The product designed for a target group must be capable of satisfying the needs of that group. Proper analysis of the information requirements of the target group will reveal the existing need as well as the extent of the need.

The requirements of the career seekers range from the documents for prepartion to information about the various job opportunities open to them. The entry qualification, mode of subimitting application, address of the employer, salary details, other service conditions, opportunity for promotion, last date of receiving application etc also are of interest to any job seeker. Thus, important information products that can be marketed among this user group include-Materials for preparation, Information Service based on job advertisements, Reprographic Services etc.

5.1.1.Materials for Preparation

This includes newspapers, journals and magazines, various guides specially designed for competitive examinations, reference books etc. Background materials on career guidance and councelling, employment prospects of various courses and degrees, employment laws etc can also be included in

this group. A sparate collection may be formed as part of reference section in the library for the materials on career related information.

5.1.2.Information Services Based on Job Advertisements

The job advertisements of various establishments including government departments will be scattered over a quantum of pulications. Libraries can provide various services to the job seekers by the constant scanning of the advertisements appearing in newspapers and different career information periodicals.

Career seekers can be informed of the apperance of the job advertisements woith other details using the information service techniques such as CAS, SDI etc. These services can be provided to the target group by sending Notification Lists, Current Awareness Bulletins or Newspapaers Clippings.

5.1.3.Reprographic Services

Reprographic facilities have to be made available in libraries for taking the copy of required pages of the relevant reading materials. Copies of the formate of application forms given in job advertisements can also be made available if there is no specific application form directly supplied by the employer.

5.2.Promotion

Promotion involves communicating through public relation, convincing the user and competing in the market. The communication media of the library can be made use of for this purpose. The most effective way of promotion is through the personalised services of the library staff. Libraries can resort to advertisement campaign through television, radio, newspapers or distribute brochures amoung the users.

5.3.Placing (Distribution)

The traditional method of every user going to the library to get the requireed information has changed drastically as a result of the development in computer and communication facilities. The career information services can be provided to the users with the help of telectommunication media. Satellites, Cable television and other communication media provide much scope for the distribution of information products. The current awareness type of services can be provided through the usual mailing channel also.

5.4. Pricing

Pricing is the most controversial topic in marketing of information products/services as libraries are service organizations working without profit motive. However, the provision of specialised services using sophisticated technology on the one hand and budgetary cut on the other hand necessitate self sufficiency of libraries.

The price of career information products can be fixed using appropriate pricing methods such as cost-based pricing, demand-based pricing, competition-based pricing etc. Pricing also depends on the factors like the pricing policy of the parent institution, nature of libraries, willingness and ability of the users to pay, capacity of the library to mobilise resources etc. Libraries with crucial financial stringency can adopt demand-based pricing method for career information products as these products have high market potential. Considering the competition from the private career guidance agencies, a competition-based pricing method can also be adopted.

CONCLUSION

Though information marketing is not completely new in libraries, the use of marketing concepts to satisfy the actual needs of the users has a recent origin.Considering the market potential of career information, libraries must develop appropriate products to serve the hither to neglected group of job seekers. If appropriate pricing policy is adopted, career information service can be made a source of revenue to the modern libraries facing financial crunch.

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MARKETING OF PUBLIC LIBRARY SERVICES FOR FINANCIAL SUSTAINABILITY WITH SPECIAL REFERENCE TO ANDHRA PRADESH

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Abstract The Public Library system in Andhra Pradesh is suffering with acute problems encountered by financial constraints. They are at the verge of collapse and losing their very existence. Instead of allowing the system to decline and depriving the user his right to access information the public library system has to bring out revolutionary changes for their sustenance. The days of free-service have gone by the fee-based services are a viabe alternative to overcome the crisis situation. Hence the public library system has to come out of its dormant stage and provide global access to information to its user community through a variety of information services, by collecting incremental charges.

INTRODUCTION

Public Libraries have been established with an objective of reaching out to the community to cater to their information services. Indeed in India the backbone of librarianship is public library system with a long history, where as academic and special libraries are a 20th century phenomena. The role of public library has been redefined from time to time to suit the needs of the contemporary information society. Many of the eminent information specialists have expressed their changed point of view on the functioning of public library system in their articles.

The new Education Policy (1986) of the Government of India gives a place of pride for libraries in its scheme of things. According to this policy Indian libraries are expected to give more attention to the needs of the people coming from the rural areas and the weaker sections of the society. The New Education policy lays emphasis on non formal and vocational education. In this context the public libraries have an important role to play and support our New Educational Policy to achieve its target.

Another important delegatio of the public library is to cater to the needs of illiterate persons. Public library should undertake or support programmes for educating the illiterate, neo literate and adult education programmes through audio visual and other new communication techniques.

Recreation and relaxation are as important to the community as education and information. Hence libraries are expected to stock books an travel, good fiction, art, sports and games, biographics, light and humorous reading material, cartoons etc. It is the responsibility of the public library to provide library facilities to the handicapped section of the society. This should be done by appropriate collections of books and non-book material being made available for their use and Education.

The society is fast changing from an agricultural to industrial and now to information society. In this society, information is being treated as an economic commodity and it acts as an instrument in bringing about the desired social and economic change in the country. Now the world is convinced that information is necessary for the all round development of humanity. The information products and services are at great demand throughout the world. In addition to libraries now the documentation centres, information analysis centres, commercial online information centres, computer networks, multimedia centres etc., cater to the information demand of users. Now information industry working on commercial lines, has been well established. All these developments have brought tremendous change in the role of the Public Library.

From their genesis, public libraries are beig supported by the Philanthropists, endowments, patrons/donors and encouragement and support of the Government through financial assistance. Library legislation will go a long way in fostering libraries but only 10 states have realized its importance. Though public libraries have a long flourishing past in our country from the early days, the conditions of the libraries in India during contemporary times are far from satisfactory. In these present circumstances when the future of our country is at cross roads with rising inflation, unemployment, political instability both at the centre and the states, break down of law and order in the border states, energy crises, unfavourable balance of payments in our trade and above all with truth, honesty and values of life being at premium, libraries always form a low priority in the scheme of things. The Government can not be blamed for this situation.

Further the factors, such as rising costs, declining support and funds to libraries and crisis of identity have made it necessary for libraries to reconsider their position and to utilize some of the tools that have made it possible, for profit organisations to operate efficiently and profitably. One of such tools is MARKETING. In other words, the Public libraries can no more function as free-service centres. Their very existence demands a switch over to "fee based".

MARKETING

Marketing has been defined as a "total system of interacting activities designed to plan, price, promote and distribute want satisfying products and services to present and potential customers".

Marketing is not a totally new concept for libraries. Most of the libraries have practiced public relations, have studied users, have consciously or unconsciously segmented the user community and have attempted to develop services to meet specific needs. However, marketing by libraries has been more passive than active, more reflexive then protagnoistic. Until recently many librarians have the opinion that there is no room form marketing in non-profit organisations like libraries, and non-profit profession like librarianship. Early theoreticians also believed that the concept of marketing did not apply to the service sector. The classical model of marketing has changed and now there is wide spread agreement that marketing is equally valid for service industries and includes intangibles such as library service industries and includes intangibles such as information given to satisfy a need.

Some of the concepts considered relevant in the context of marketing of library and information services are (i) Market analysis and segmentation (ii) New product planning and development (iii) Marketing mix and (iv) product life cycle.

SELLING IS NOT SYNONYMOUS TO MARKETING

The word selling is used as synonym of marketing which is not correct. Selling is one of the part of marketing process and it is mainly concerned with higher sales of the products and earn maximum profits through volume sales and it is not concerned with users needs and satisfaction. To the contrary the marketing philosophy concentrates on the analysis of consumers and strives for fuller satisfaction of users. Marketing genuinely looks for the real differences in the tastes of consumers and develops products and services to satisfy those tastes. According to Doust "marketing has sufficient flexibility to adopt not only the changes in the needs of consumers but also the changes in consumers themselves".

MARKETING OF INFORMATION SERVICES IN PUBLIC LIBRARIES:

Marketing builds a linkage between the producer and consumer. Marketing has been defined in various ways by many specialists. A more acceptable one can be "Marketing is a tool of any responsive organization that is or should be consumer satisfaction-oriented. However the explicit goal at Mar-

keting is needed satisfaction to consumers"[2]

The functions of marketing in the society lins efficient production and consumption. The libraries being social institutions ought to provide need satisfaction to selected user groups. Further, the value of libraries and information centres lies in the degree to which it satisfies the users needs, hence marketing has much to offer to achieve this goal.

The main financial support to the public library system in Andhra Pradesh is the allocation of a fixed percentage of the cess collected by local bodies. In the present Scenario the local bodies have not been allotting the share of the cess to the public libraries due to many a problem .The statistics show that nearly 33 crores rupees of collected cess has to be remitted to the public library system as on today.

Apart from this the public library gets grants from the Government which is hardly sufficient to pay the salary bill of the employees of the libraries. Besides this, the only other source of income to the public library is the sum of the deposits collected from the users and the money collected in the form of fines which is a very paltry sum when compared to the needs of the public library.

The public library is steadily becoming unattractive to the users because there is a ban imposed by the Government due to financial constraints on the purchase of books and also due to the fact that the public libraries are poorly maintained and many of them are in a dilapidated condition. There is also a ban imposed on any fresh recruitment to the public libraries making it difficult for the skeletal staff to render effective services to the users. Due to all these aspects the existence of the public library has become redundant which ultimately is resulting in a steep decline in the turnout of the users.

At this juncture especially when there is a direct threat to the moribund public library system the only way of infusing vitality to the system as a whole is to promote the concept of marketing the information services.

When we examine the various possibilities and probabilities of promoting the concept of marketing the public library service so as to cater to the needs of the deprived classes at no cost as well as charging the affluent sections for the services provided the following services can be marketed.

1. It every District Central Library by installing a GISNIC/NICNET terminal which holds vast information for different users and charging the users for giving access to the information in the NICNET, income can be generated to sustain the public library. At present these terminals are available only at the Collector's Office where users can not have any access to NICNET.

2. By providing SDI/CAS services in all public libraries which are so far confined only to special libraries. Public library can attract users from different walks of life who need information may be for a price. These services can be provided on a charge basis which will generate some income to the public library apart from attracting a major chunk of the users.
3. Preparing retrospective bibliographics, and documentation lists for different researchers working in various fields and collecting some amount for the same also, contribute some earnings for a public library.
4. Conducting awareness programmes through a separate cell for the aspirants who appear for competitive exams and collecting fee from them which is, in effective in states like Kerala etc., also provides finances to the public library.
5. Orientation to self employment schemes can be provided to a user on charge basis in public library by stacking the public library with different project works collected from DIC, CDC etc.
6. The Noble ideas behind the establishment of the public library system in a country like ours should be explained and propagated to the people at large and patronage from philanthropists can be gained by a right and dutiful work of the persons who are at the helm of affairs in the public library system. In fact in Tenali a programme by name 'Grandhalaya Mitra Padhakam' is in vogue which issues certificates to the patrons of different categories and the amount thus collected is kept in fixed deposits in any of the nationalised Banks and using only the interest component for the uplift of this noble and cherished institutions.
7. Once the public libraries are financially sound, they can computerize their systems and offer online and CD-Search Services.

Though the above possibilities need certain High Cost inputs in the initial stages the dividends that can be repel when the system goes operational will surely make the whole system cost effective and income generative.

The libraries have to search for new ways to cope up with the situation to overcome the limitations instead of denying the users, a rightful access to the necessary information because of financial constraints it is better to provide the same by marketing the library services instead of depriving them with no service. Though the libraries are non-profit organisations, the public library system, under several pressures, is not in a position to sustain itself. To increase their revenue, productivity and responsiveness the libraries have to develop the internal information services on the basis of supply and demand besides, acquiring the services available at international market and have to charge for them. This is an essential charge required in the present information environment to handle the proprietary interests of users with more responsive and better information services.

However, our society has not yet come to the point of paying for library and information services. This is not because the information services are of less value but because of conventions and attitudes of our society. The users are accustomed to get the services free of cost from times immemorial and there is no tradition of paying for such services. Here we can take the medical and legal services as an example. Though they are service oriented, pricing has been introduced for medical care, and legal advice. Further the higher education system in the country has introduced self-financing courses. On similar lines, libraries can also charge for their services. The objective of charge is to maximize the user benefit, but not to maximize lib. profits. The aim of marketing lib. services is to provide a stable level of funding, thereby to strengthen the existing services and to develop new products and sustain the growth, development and well being of the existing public library system.

CONCLUSION

The contemporary information environment, the limited budgetary provisions and other factors led to the crisis of identity and sustainability of pub. libraries, as they are not able to provide effective information services. Marketing of library services is a viable alternative to the present situation. Hence it is high time for the public libraries to accept marketing of library services as an integral part of library management. Otherwise it is doubtful whether the public libraries in India can even offer effective library services in the age of information proliferation coupled with high costs of information.

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MARKETING OF SALEABLE SERVICES IN INDIAN UNIVERSITY LIBRARIES

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INTRODUCTION

Concept of marketing information services is hardly twenty five years old. It originated in the United States where it is now looked upon as a popular profession in which more than fifty percent working population is engaged. It is considered an important professional like that of automobile or oil industry. With the passage of time this concept became popular in European countries. A developing country like India is also facing dilemma.

However, Indian civilisation is an ancient one, having its own centuries old traditions where imparting of education or information was considered an obligatory act. Indigenous educational system was prevalent even during 6th century B.C. period. Ancient Indian Universities used to posses a large number of manuscripts, relating to different subjects, which were consulted by Indians as well foreign scholars. Generally the education was free and so was the use of libraries. The educational institutions were maintained by liberal grants from the rulers. Concept of free use of libraries was in existence from ancient times. Even today this tradition is continuing. For library books, journals, salaries etc. grants are given by University Grants Commission and State Governments.

India is a poor country as large number of people are still unable to feed themselves. The poor students find it difficult even to continue their primary education. The universities are already enhancing the fees because of which higher education is becoming out of the reach of poor students. it would be difficult for such students to bear more burden if the library services also get priced.

If the central or state governments are spending huge amount on education, its return is available in the form of our scientists, technologists, educationists, scholars etc., who with new inventions and researches save millions of rupees which otherwise shall be given to foreign countries for getting information.

It is a fact that money-oriented educational system never become popu-

lar in India in ancient and medieval times. During the British rule much stress was given on educating the indian with lesser burden on their financial constraints. This process continued even after independence but now voices for privatisation of education is getting momentum. Following the European pattern, some scholars are advocating for private of universities.

Because of financial crunch a number of universities are contemplating to do something in order to tide over this difficulty. In contrast to it information in almost every field is increasing many folds.

Before we consider what services can be provided by the University Libraries, it is essential for those who will undertake such services to know of `marketing' and its various aspects.

Marketing in its wider context is "the directing of the flow of goods and services from producer to consumers or users'. It is not confined to any particular type of economy, since goods must be marketed in all economies and societies except perhaps the most primitive.

One may raise the question here that when there is a need, the needy automatically moves towards the ends to meet his needs. In such a case would there be any need to direct the flow of goods ans services from producers to consumers or users. In view of this, it is clear that marketing comes into picture when there is competitive environment, or at the time of introduction of a new product.

Now the subject of marketing has created more interest to organisations like libraries and information centres. The librarians and information scientists are familiar with the concept of marketing which is nothing but user studies with the possible addition to stress of economic aspects and constraints as well as testing of alternate products and services. In simple language, if one markets information services / products, it is presumed that one has identified the user's needs and devised a product that satisfies the needs at a price the user can pay in terms of money.

For marketing any commodity including the information, certain prerequisites are needed. In the case of information the following conditions may be taken into consideration :

(i) A well-developed store or collection of data or information;
(ii) Repacking of the data of information into a marketable commodity;
(iii) A target community which would need the commodity;
(iv) Creation of awareness about the commodity;
(v) Creation of demand for the said commodity;
(vi) Marketing of the commodity;
(vii) Satisfaction of the consumer with the commodity;
(viii) Continuous supply of the commodity without break or delay;

(ix) Obtaining the feedback from the customers on the commodity and
(x) Conducting of research with regard to the changing needs of the customer with a view to improve the quality of the commodity.

Information is almost a new product. Therefore, unless and until it is marketed efficiently the promotion of flow or use of information would be almost minimaml.

1. The information centres or libraries spend / invest huge funds on collection, processing and storage of information resources and these resources are put to very meagre use which implies wastage of founds. For the promotion of the use of information resources, there is need for marketing.
2. The needy has casual or almost nil need perception because of which he does not use and demand information. Therefore, information marketing is essential to facilitate need perception on the part of the needy and thereby create demand. In other words it is suply / marketing which creates demand.
3. As mentioned above information is a new and a very essential product. It is almost identified as the fifth need of man ranking after air, water, food and shelter. As a matter of fact every need is intensive one. Lack of realization of this aspect puts one to disadvantage and deprivation and thereby loos of fruits reaped by proper information use. Marketing of information eliminates these lacunas and renders every information rich.
4. The information providers cofine themselves to their corners which is not good for the promotion of information use. They have to come out of their corners and publicize their products or resources. Then only optimum use of information can be ensured.
5. As marketing creates and increases demand for information, the image of the information cenrtres and status of information providers would improve. Therefore, for elevation of image and status of the information centres and the profession, marketing is essential.

The following may have to be considered as essentials for information marketing :

(1) Community surveys; (2) Innovations ; (3) Publicity and Public Relations ; advertising, communication skills dynamism (in establishing contacts); (4) Nonenclature dynamics; (5) Staff training and motivation; (6) Networking and (7) Pricing.

Information colectio, transfer and service is essential in libraries and information centres. Sources should be created in order to run the infrastructure. To have user-oriented production, certain guidelines will be useful to the producers as well as to the users. Information service may be required by the elite users as well as the general. An identification of the users, however, is a

right step. Better service can be provided if the needs of the users are determined.

Marketing is a managerial tool whose power has been largely unrecognised in the non-profit sector while being greatly exploited by the profit sector. Since the profit portion of information services is still in its beginning stages, it is fair to state that a sincere approach to marketing is a must in the information world as it is itself becoming very competitive in an increasingly competitive world.

It was observed by Institute of Public Enterprises, Hyderabad, while studying the market approach of some institutions that not even a single respondent has a well defined marketing programme. The information centres appear to be heavily oriented to the research and development market. Institutions dwell only on bibliographic information bulletin. Moreover, most of the Librarians and Information Scientists are not clear about it. The non-profit information facilities are marking heavy investment on books and non-book materials whereas the commercial agencies are making a little or no investment in information materials.

The concept of marketing information as a commodity had its origin in United States and then it has gradually spread to the rest of the world. This was first felt in the areas like industry, science and technology. In the same way, we have the National Documentation Centres developed. INSDOC was established in 1952. NASSDOC was set up after another twenty years in 1972. These national centres in India have been marketing information to the organized groups of scholars in science and social sciences. But in the area of humanities, the case is different. Neither there are All-India Councils like CSIR or ICMR or ICAR or ICSSR nor National Documentation Centres like INSDOC or NASSDOC, or SENDOC or DESIDOC for the humanities. In the absence of a national body to collect, organize, publicize, retrieve and market information, the humanities scholars have to depend largely on institutions which are specializing in these subjects. The Central Institute of English and Foreign Languages (CIEFL) is one such institute which is in the field for the last three decades. Its library has developed into a National Resource Centre for English and Foreign Languages and their literatures.

At present central bodies like INSDOC, DESIDOC libraries and information centres of Bhaba Atomic Research Centre, Indian Agricultural Research Institute, National Medical Library of DGHS, Patent Office, Indian Standards Institute and NASSDOC are providing excellent services. Moreover, from time to time these institutions devise new services. INSDOC is providing document procurement service, microfilm copies of scientific documents, translation and bibliographic service. It also provides computerized SDI service. It uses the American Chemical Society tape service INSPEC and COMPENDEX. SDI service covers chemistry, chemical technology, physics, electrical tech-

nology, electronic engineering, computer and control technology. It also publishes serial publications and adhoc publications. IASLIC is prividing reprographic, translation services, publishers serial publications and special publications. NASSDOC is an important centre for the help of the social scientists and researchers. It provides reprographic, microfilming and bibliographical service. References and Referral services are also provided. Abstracts and news letter are also published for the help of the researchers. Small Enterprises National Documentation (SENDOC), Hyderabad, provides information service to the persons or organisations engaged in activities related to small scale industries. It is a national centre for co-ordinating and collaborating with the information activities of other national institutions and effecting liason with similar centres in other countries. It is a clearing house of information for specialized agencies connected with the development as well as promotion of small scale industries. It provides anticipatory documentation service, responsive documentation service, technical enquiry service, pre-investment studies, document copying services and consultancy services. It provides package services to the extent these are required. The rates of subscription for them are negotiated individually.

NISSAT, a national network, is providing excellent information services. The Central Food Technological Research Institute (CFTRI) at Mysore serves as food information centre. Central Leather Research Institute (CLRI), Madras, serves as leather information centre. National Information Centre for Drugs and Pharmaceuticals (NICDAP) located at Central Drugs Research Institute at Lucknow ; the National Information Centre for Machine Tools and Allied Products (NICMAP) located in Central Machine Tools Institute at Bangalore; provide information service on on-line service, computerized SDI service and in printed form.

India has already set up National Centres of Information in science and technology, medicine, agriculture, defence science, nuclear science, patents, standards, small industries, social sciences etc. Thesé national centres are providing information at national level. These and other centres like National Aeronautical Library, Central Leather Research Institute, National Metallurgical laboratory are also providing latest available information on demand. Thus, the concept of information marketing is already in existence. It is only to be extended in universities.

Almost all the university libraries provide xeroxing service to the students at a substantial subsidised rate. Keeping in view the rising prices of machine, paper ink etc. the charges can be enhanced. The charges of xeroxing for outsiders should be at par with the market rate.

Generally a research scholar spends a year in knowing the related books, journals, articles, and other institutions working on the similar subject. The library officials can help him by preparing bibliography from the database

of the university for such work the library can charge from the scholar.

The university library can open the membership to private students appearing for All India Services and National Educational TEst by taking a security of significant amount in addition to montly fee. Similarly, the library can be opened to distinguished citizens, scholars, industrialists and educationists against a security of significant amount. Thus university library can have a regular deposit against which the university can get interest.

The university can have micro-films of those news papers which are popular and important in the region. Photostat of required news, notices etc. can be charged as much as the university librarian thinks appropriate.

The university library can publish and sell bibliographies of important persons, politicians, scholars etc. which can also prove a good source of income.

Similarly the university librarian in association with Department of Library and Information Science can start a journal with emphasis on practical aspect, can be greatly useful for the library professionals. Such a journal can fetch a significant income.

Most of the Indian Universities have rare manuscripts. By preparing micro films of these manuscripts either microfilm or its photostat print can be sold to the researchers in order to supplement the income of the Library.

Millions of rupees are being spent on Indian University - Libraries. Denouncing previous passive and traditional sort of reference service the librarians should attempt to provide information service to the Industrial, Pharmaceutical, Textile units etc. Some of the universities are already having Industry Linkage Unit Projects, provides information to small and medium industrial units which cannot afford to maintain the institutional libraries.

Arrival of Internet is going to usher a new phase in Indian libraries and information centres. As most of the Indian students will not be able to have this facility at their homes, the university libraries can start this facility which will prove a good source of income even if the minimum charges are fixed.

University library can also start computer training programme for the college and school librarians. It can also be a source of income as well as an excellent library service.

Keeping in view the above situation in India we can conclude that every library service can not be priced. However, only a few services if priced can fetch some amount. The way in which prices of the books, journals etc. are rising day by day, only the grants from Central and State Governments can make library services survive.

MARKETING STRATEGIES FOR LIBRARY AND INFORMATION SERVICES

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Abstract Present days have been witnessing structural changes in the working condition of library and information sector. Various forces that are shaping the new kind of atmosphere are identified and discussed. In the event of changed scenario, the need for introducing the marketing concept for library and informatin services have been felt as it is picking up in India. An attempt has made in this paper to present the various steps and strategies involved in the marketing of library and information services. And it also poits out that how it will help the professionals to survive in the otherwise highly competitive environment.

INTRODUCTION

The recent days witness increased competition and sophistication in several aspects of human life. Library and information services become more complex and more difficult to manage. The things are in constant change. It is essentially important for one to sustain one's identity in the highly competitive market. The library and information professionals are required to face the challenges posed by the changed working environment. Surviving and securing a future is need of the hour. The changes that are happening are forcing professionals to re-examine their library and information centres, management practices, and working strategies. The emerging trends clearly indicate that strong competition and information technologies have blurred the traditional library practices. The paper identifies the forces that are responsible for the changing environment and discusses the various marketing strategies and their usefulness for library and information centres.

WHAT ARE THE FORCES?

Several factors are responsible in reshaping the library and information services. It is more than a mere contention that the position of permanence and solidity enjoyed by library and information services is now under a bombardment of threats from variety of factors, services and systems which have come to the fore on widespread technological, social and economic levels[1]. The following forces have been identified and discussed in brief.

1.1 Competition

Recent structural changes which are the outcome of globalisation and liberalisation coupled with the information technology to compete across have provided for intense competition in the information industry. For instance, in the field of financial industry we find so many private vendors like Praxis, CMIE, Vans, Knight-Ridder's, Credence, Ecoscan, and so on have been offering various types of services both in print and electronic media as well.

1.2 Manpower Cut

One of the problems faced by the library professionals is steep cut in the staff size. Further, the vacant posts are not being filled in, due to the fact that costs associated with personnel and staffing account. This has resulted in more workload among the existing personnel and affected the services of high standard. A scientific approach towards analysing and determining appropriate staffing levels is essential so as to convince the library authorities. This calls for predicting optimal staffing level, determining key outputs for each department, gathering information for analysis, and developing specific standards for each position. Leadership qualities should be stressed upon in the development of manpower.

1.3 Financial Crises

There has been a tendency that in many organisations library budget gets least priority compared to other departments. Further, libraries and information centres are faced with the pressures of limited budget provision leading to minimise in the building information resources. This serious factor forcing the professionals to think alternatives that are available for resources mobilisation.

1.4 Increasing Costs

The costs of various library materials are growing substantially. In

Indian libraries, with few exceptions, more than 75% of their information sources like books and periodicals come from abroad. The costs of these books and periodicals are quite high (they continue to rise) and also the costs of various equipment and information technology are making the professionals to struggle. Since the benefits associated with the library and information services are not tangible, there has been a feeling that these have become the burden for the parent organisations.

1.5 Rupee Fluctuation

The Indian rupee has been continuously fluctuating against most of the foreign currencies. Ever since the Government introduced economic reforms in 1991, the rupee has lost its purchasing value in the international market. Since major portion of the library collection is contributed by the foreign publications, the depreciating rupee has further put the libraries in difficult position. We are required to tackle the problems generated out of rupee fluctuation, budget cut, and increasing costs of the publications with finding the alternatives to cope up.

1.6 Information Revolution

The recent days have witnessed the tremendous amount of information growth. The rapid growth of information coupled with the communication media has posed several problems for the professionals making their task more complex and difficult. The sudden emergence of these unprecedented problems are posed several concerns in managing the information effectively. Virtual libraries and information centres are widely predicted.

1.7 Information Technology

Information technology is fast changing and has direct impact on the libraries and information centres as they are basically communication centres and largely depend on various communication technologies available at their disposal. Information technology is so sophisticated that professionals have to update their skills and knowledge on a regular basis to design and deliver services effectively to meet the requirements of their clientele. The availability of information on various electronic media and the very character of instantaneous communication has posed several problems to the libraries and information centres and their managers and users.

1.8 Information Superhighway

Internet which is in full swing all over has been picking up in India.

Information superhighway is relatively a new phenomenon. It is the world-wide connection of on-line services, intranets, off-line analytics, electronic databases, telecomunication networks, computers and many more. The advent of information superhighway which is emerging has posed several problems to the professionals. We need to understand it clearly in terms of its scope, pace, and utility for the library environment.

1.9 Increased demand for Information

The information technology has brought in changes in the behaviour of the library and information users. Library users are becoming more sophisticated due to the fact that availability of various alternatives. They are better equipped to seek, evaluate, and select the information and information services. There has been increased demand for information on electronic form rather than print. Furthermore, they seek tailored information as they are facing the problem of time in the information flooded environment.

The above factors are making the professionals to rethink on the various issues concerned with the information industry. This calls for the professionals to adopt technological changes to develop new products and deliver them in alternative systems with a minimum time and cost. Managing the change and taking the advantages of the information technology are the important priorities before the librarians. The introduction of marketing concepts and techniques can contribute a dynamic approach to total strategy development which will ensure effective management, the achivement of goals and the creation of confident blueprint for the future[2]. Despite the above constraints, there is a need for offering value added services by the professionals within the limited resources. Using the below discussed strategies, if carefully planned, can provide avenues for mobilising the additional resources and carrying the image of the libraries.

MARKETING STRATEGIES

Kotler[3], the pioneer of introducing the marketing concept for non-profit organisations, defined that marketing is the analysis, planning, implementation, and control of carefully formulated programmes designed to bring about voluntary exchanges of volues with target markets for the purpose of achieving organisational objectives. It lies heavily on designing the organisation's offering in terms of the target markets' needs and desires, and on using effective pricing, communication, and distribution to inform, motivate, and service the markets. The concept of marketing in libraries and information centres in gaining momentum. Adopting the marketing concept by the library professionals gives them positive direction towards surviving and serving their

clientele in better means. In the fast changing environment, the libraries are required to manage and establish as Cronin[4] opines "prevailing economic thinking is no respecter of tradition (however long and venerable the tradition), and libraries will have to defend themselves in the face of monetarist values". The crux of the concept of marketing is `user' not the profit.

2.1 Ready to face Challenges

The professionals should make themselves ready to face the challenges and succeed. Information has been accepted as tradable commodity like any other commodity. Library and information professionals should respond positively and adopt the changes that have occurred in their working environment. Increased competition has forced the professionals to understand and evaluate the competition and its pace, the impact of the emerging technologies on library and information products, and what it will take for a professional to survive in the highly competitive environment.

2.2 Setting Objectives

It is required to set and define the objectives of library and information services in the event of changed scenario. Specific objectives of the library and information centre within the framework of the objectives of the parent organisation be laid down and understood. And all the efforts in marketing information products should be derived from these objectives. Given the objectives are set up it is then easier to adopt the suitable strategy that are available.

2.3 Creation of Value

The biggest question remains untouched is how to provide value added service to the library users. What is value? is the issue to be addressed to. Value according to the professionals may differ from the value perceived by the users. What we need is matching the gap so as to bring in acceptability by both. Maximise the value of our services and the presence of our staff. Realise the performance potential of our staff and equip them with maximum understanding in a minimum amount of time about the developments that have taken place, thereby achieve success and accomplish goals.

2.4 Upgrade and Develop Skills

Job security is no longer guaranteed and employability demands a continual upgrading of skills and knowledge. To secure a profitable future, one need flexible learning aids that provide problem-solving skills. Adding value

to our career and increase our employability in the new world of library and information services is required. Library and informatin education curriculum in India needs to incorporate the latest developments in order to produce manpower to face the current developments. Many universities have included information technology in their syllabus. Seminars, training programmes, professional journals, etc. will bring us up-to-date with current trends in information services practice.

2.5 Quality is the Key

Achieving high-quality and consistency in the library and information services is the key aspect. There is always demand for qualitative services with a competitive price. Quality is very difficult to measure in library and information services, as these are not tangible in nature. Quality can be achieved with strong commitment to profession, maintenance of accuracy and reliability in the services, adopting high standard practices, and communication skills.

2.6 Resource Sharing

The possibilities of sharing the information resources among the libraries and information centres through networking should be maximised. Effective networking may well facilitate optimum utilisation of the resources and achieve economy in terms of money, time, space, and personnel. Technological developments have made the library networking more effective than ever. Sincere efforts in integrating various libraries — special, academic, and public and their resources with the modern technology towards optimum utilisation is required to be done on the warfooting basis.

2.7 Public Relations

Public relations in the context of libraries and information centres, like any other organisation, have important role to play in building up the 'image' across the public. Public relations is, at its simplest, the way in which an organisation manages its relations with its publics[5]. Good relations with users, organisations, personnel, libraries and information centres, media, vendors, and society will help in creating good opinion about the products and services. Library can flourish and sustain through the active support of the public which can be achieved through public relations.

2.8 User Focus

Library users are responsible for our existence hence all our efforts should be towards users satisfaction. Regular interactions with the users is es-

sential. Proper system for understanding the users needs and their behaviour, feedback be formulated and implemented. User focus in respect of marketing, innovative products and services, and effective dissemination strategies be incorporated and prioritised. The concept of marketing services is customer driven, hence all the efforts should be user-oriented.

2.9 Differentiation

The products and services should be developed and offered in such a way that they are quite different from the one that is offered by other competitors in the area of our interest. Successful differentiation should : (1) be based on what the target customers value; (2) be perceived as providing superior value; (3) derive from combinations of "tangible" and "intangible" attributes of the vendor's products and services; and (4) be priced competitively[6].

2.10 Innovation

Innovation is key to the success. It is a continuous activity and therefore needs to be inculcated in all the fibres of library and information system. Innovation process, according to Fred Wiersema, has three major components, the first is invention — getting ideas, the second is development — turning ideas into reality, and the third is getting the product on the market and making it a huge success[7]. Innovation in product and services, alternative delivery systems, communicating with the users, etc. will enhance the capabilities in surviving in the highly competitive market.

2.11 Professionalism

Professional commitment towards high quality products and services towards meeting the information requirements of the users is to be addressed. The practice of professional ethics, standards, and code tend to get value to the users and the profession itself. Protecting and building our career by guarding against professional obsolescence is an important task. Striving with positive approach towards innovative skills, reputation, enhancing the capabilities, strong relations with users, familiarity with the developments, facilitate to achieve the social obligations.

2.12 Reengineering

Reengineering the library and information systems has become increasingly important. Reengineering is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical,

contemprary measures of performance, such as cost, quality, service, and speed[8]. Reengineering process, which involves management of change, facilitates in achieving competitive advantage over the competitors and to survive.

2.13 Segmentation Analysis

Segmentation is a process of grouping the library users based on the characteristics of their needs and behaviour Segmentation analysis will help in understanding the nature of information needs of various segments. This process facilitates careful development of products and services and offer them effectively. This will serve the objective of identifying the nature of each segment so that the marketing programme can be formulated and implemented. Segmentation analysis forms an integral part of marketing and it is done based on the factors like geographic, socio-economic, psychographic, product usage, and benefits perceived.

2.14 Marketing Mix

Marketing mix consists of four important aspects viz., product, place, price, and promotion which provide planned package to market products and services effectively. Product, the first element of the mix, deals with designing the various products and services to meet the requirements of the users; Place, the second element, is concerned with how to make available the information to the users; Price, the third element, gives the framework for pricing the products and services; and Promotion, the fourth, deals with various promotional tools and their importance in marketing.

The understanding subscribing to the above concepts and strategies enable professionals to improve their analytical skills, and give an insight into strategies and planning. The issues in adopting marketing concept may be debated before they are implemented. Evaluation method to find out the effectiveness of these strategies be evolved and applied. The success however, depends largely on the commitment and dedication of the professionals.

CONCLUSION

In India the marketing concept in the library and information environment is catching up. A workshop on marketing of information products and services was organised on 27 November -01 December 1989 at CSIR, New Delhi by Unesco, Nissat, and Aglis. IIM, Lucknow, has been offering training programmes on the same topic and on 26th April, 1997 a one day seminar was organised by UTI Institute of Capital Markets in association with Bombay Science Librarians' Association at Navi Mumbai to discuss the issues involved.

The libraries attached to IIMs, IITs, TISS, ICRISAT, Media, and many others have introduced the marketing concept. The concept of resource sharing through networking yet to take its course. The tools of marketing discussed in the article are useful in introducing the marketing concept for library and information centres. It is hoped that this step coupled with the support of information technology will go a long way in popularising the libraries and securing the status for professionals.

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PROVISION OF FINANCIAL RESOURCES IN THE PUBLIC LIBRARY SYSTEM OF INDIA : A STUDY

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INTRODUCTION

Public library is a social organisation and also an institution for self - education. The UNESCO menifesto defines public library as `living force for popular education and for the growth of the intellectual understanding and thereby for the promotion of peace.' It is described as a democratic institution, which serves one and all in a community without any descrimination.

CONCEPT OF LIBRARY LEGISLATION

To establish any organization or institution, financial resources are essential and pre-requisite. Without the proper and adequete suport of finance no institution can be established properly. Therefore, finance plays an vital role in the overall development of public libraries. The public library stands as a sort of beacon for the community as a whole. It is of paramount importance to put the public library on a sound and sure financial footing and to allow it to run smoothly without any bureaucratic binding. The ultimate goal is to create necessary library agencies and to define their functions in such a way that the public library service may run along the most effective and economic lines. All these imply legislation which id capable of regulating various organs of public library services. It is an instrument for development of public libraries in a planned manner. Library legislation, therefore, ensures establishment, development, and maintenance of libraries uniformly. Legislatin alone can help promote a sense of self consciousness among people who would feel it obligatory on their past to use services offered by the library.

FINANCIAL RESOURCES

It is a well known fact that the public libraries are established and maintained in order to cater to the information needs of the peoples. To fulfill this condition, there must be continuous supply of finance to organize the services scientifically, effectively and efficiently. No doubt finance played an vital

role in the growth and development of public libraries. It is one of the governing factors, on which dependsits future plan and development. Mainly the traditional source of finance for public libraries are Library cess, Government grants, Endowments and Donations from Philonthrophists and amount collected by the authorities under the rules and by laws.

PROVISION OF FINANCE IN PLS IN INDIA

In 1850 the first public library act came into existance in UK, which introduced library cess to raise finance from the public for promoting the library services. The same pattern if followed in almost all countries of the world with slight modifications. As for as India is concern the Madras Public Libraries Act, 1948 is the first act and which is a brain child of Dr. S.R. Ranganathan.

4.1 Madras Public Libraries Act 1948.

4.11 Library cess on Property or House Tax,
4.12 Contribution, Gifts, and Income from Endowments,
4.13 Special grants from Government,
4.14 Flne and others, and
4.15 State Government shall contribute to DCLS, a sum not less than the cess collected.

4.2 Andra Pradesh Public Libraries Act, 1960.

4.21 Library cess on Property or House Tax,
4.22 Contribution, Gifts and Income from Endowments,
4.23 Special grants from Governments, and
4.24 State Government shall Contribute to Zilla Granthalaya Samsth a sum not less than the cess collected.

4.3 Karnataka Public Libraries Act, 1965.

4.31 Library cess,
4.311 Tax on Land and Buildings,
4.312 Tax on entry of goods (Now with drawn by Govt)
4.313 Tax on Vehicles (not implemented)
4.314 Tax on Profession, Trades, Calling and Employments (not implemented)

4.32 State Government shall make annual 3% of the Land revenue collection of the district to DCL's,
4.33 Contribution Gifts, and Emdowments,
4.34 Grants from Government, and
4.35 Fines and others.

4.4 Maharashtra Public Libraries Act, 1967.

4.41 State Government shall contribute the library funds every year a sum not less than 25 Lakhs,
4.42 Special grants from the State Government,
4.43 Any Gift by the Government of India, and
4.44 Contributions, Gifts, and Endowments.

4.5 West Bengal Public Libraries Act, 1979.

4.51 Grants from the State Government for general maintanence,
4.52 Contributions, Gifts and Endowments, and
4.53 Any amount collected by LLA Rules

4.6 Manipur Public Libraries Act, 1988.

4.61 Grants from State Government for general maintenance,
4.62 Contributions, Gifts, and Endowments, and
4.63 Funds collected through LLA Rules.

4.7 Kerala Public Libraries Act, 1989.

4.71 Grants from State Government for maintenance of Public Libraries,
4.72 Library cess.

4.8 Haryana Public Library Act, 1989.

4.81 Library cess may levy every local body,
4.82 Grants which the State Government may make for maintenance and developments,
4.83 Special grants from Government,
4.84 Contributions, Gifts, and Income from the Endowments, and
4.85 Any amount collected by LLA Rules.

4.9 Mizoram Public Libraries Act 1993.

4.91 Grants which the State Government may make for establishment and maintenance.

4.99 Goa Public Libraries Act, 1993.

4.991 Library cess,
4.992 Special grants from Governments and
4.993 Contributions, Gifts and Income from Endowments.

OBSERVATIONS

The Public Libraries Acts of Tamil Nadu and Andhra Pradesh prescribe the collection of cess as well as State Government Grants. With regards to the financial support for the establishment and maintenance of Public Libraries in Karnataka the provisions in the state's act are more realistic, and practicable in their scope.

The Fourth Act in India, i.e., Maharashtra Act is most important as for as Financial resources are concerned. The Act clearly states that the State Government shall provide the funds for the establishment and maintenance of the Public Libraries in the state and discontinued the traditional pattern of collection of cess. Further the West Bengal Act, 1979, the Manipur Act 1988 followed the same pattern where as in Kerala Public Libraries Act, 1989, includes both clauses i.e., State Government, shall make provision of funds and also to collect the funds in the form of cess. Which followed by the Haryana Public Libraries Act, 1989. Again Mizoram Public Libraries Act, 1993, clearly state that the State Government shall look after the establishment and maintenance of Public Libraries in the state. Where as in Goa Public Libraries Act 1993, has imposed the Library cess as well as the special grants from the Government.

It is an established fact that the cess is not only in adequate but also decreasing year by year. Public Library is a growing organism and as such it requires continuous flow of finance and should increase every year for providing modernised library services. Maharashtra, West Bengal, Manipur, Kerala and Mizoram Public Libraries Acts have removed the library cess and the State Government has taken the responsibility of providing necessary grants required by the Department of Public Libraries.

REASONS FOR INADEQUATE FINANCIAL SOURCES

There are several reasons for the inadequate of financial resources in Public Library system in India in general and Library Acts states in particular. A few of them are listed below :

6.1 Library cess in inadequate for the development of PLS but also decreasing every year,

6.2 Tax payer are not promptly paying the taxs,

6.3 There is a provision for enhance the cess rate from time to time, but the authorities were not mind to amend the existing Acts to suit the present day needs.

6.4 The granting of concessions to the farmers who are subject to natural calamities, draughts and floods.

6.5 The concern Government may not paying promptly the matching grants from the land revenue,

6.6 The State Government is not providing special grants to public libraries for pvodiding proper services to the community.

CONCLUSION

All the points discussed above reveal that the cess pattern should be discontinued as it is not helping to develop the PLS in the state, and hence modified accordingly in the existing acts. In short, the ensuring act should have a clear clause stating that the State Government should make necessary budgetory provision for establishment, maintanence and development of Public Library system and also raise the funds from Philanthropists.

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RESOURCDE SHARING IN AGRICULTURAL UNIVERSITY LIBRARIES IN MAHARASTRA: AN ONLINE NETWORK MODEL

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Abstract Discusses the need for sharing of information resources in Agricultural University Libraries in Maharastra through an online network. This paper deals the meaning of resource sharing and design and development of Maharastra Agricultural University Libraries Information System (MAULIS) as an online network model based on ring like system of resource sharing would be appropriatefor (i) improving research and planning (ii) reducing duplication in research efforts (iii) encouraging dissemination of research findings and (iv) sustainable agricultural development in Maharastra

INTRODUCTION

The idea of resource sharing is very old. The two elements of "resource" and "sharing" in the term "resource sharing" have been best explained by Allen kent. According to kent, the word "resource" applied to anything, person or action to which one turns for aid in time of need. WShen the term is used alone, it is not necessarily seen as implying reciprocity. The word "sharing" entails opportioning, allotting or contributing something that is owned to benefit others. "Resource sharing" in its most positive aspects entails reciprocity, implying a partnership in which each member has something useful to contribute to hters and which each is willing and able to make available when needed (i).

In the context of libraries, resource sharing exists where tow or more libraries by a mutual understanding are willing to contribute something that can enhance the quality of library service. Resource sharing becomes neces-

sary for the agricultural university libraries in Maharastra, as indirectly they have been sharing central funds and these libraries have remianed poor individually. The shortcoming in their resources have resulted because there are four university libraries in Maharastra in place of one elsewhere. The central aid received by the state as such does not seem to be less than what other state universtieis receive more. If therefore the four University libraries want to make the most of what they collectively receive, they must adopt some viable resource sharing programme.

It is needless to emphasise the importance of agricultural research, teaching and extension education fro the improvement of Indian agriculture in a broad sense. Agricultural research is undertaken for increasing the food production through better cultivation methods and plant protection programmes and also improving the animal life and animal products, which in turn gears up the development of agro-based industries. For achieving better results in the above system it is equally essential to develop library resources and facilities. To achieve the latter the sharing of resources among agricultural libraries in Maharastra is essential in the face of the situation explained.

A need for co-operation among agricultural libraries is great. As Indian Council of Agricultural Research Review Committee on Agricultural Unviersities (1978) was of the view that "no library could ever hope to buy to every book it needed. They should develop their resources in co-operation and in co-ordination. A co-ordinated procurement on a regional basis should be developed with area and subject specialisation and only core material needs to be duplicated by the libraries." This committee further recommended that "There should be increased sharing of resource amongst all agricultural libraries. All of them have to operate as a nation-wide network as envisaged in the Agricultural libraries Network (AGLINET) programme of the Food and Agriculture Organisation. The ICAR should also initiate steps for adoption of uniform standards of documentation by all agricultural libraries, as prescribed by the International Standards Organization. All agricultural universities should be encouraged to follow one code of cataloguing practice which should be amenable to computerization.

"Facilities for reproduction of documents should be available at the campus library in all universities. This should include an electrostation copying machine and microfilm reader and development of a computerised satellite-based information network was recommended with on-line terminal connectivity to ICAR scientists and state Agricultural Universities (SAUS) (2). There is need to develop a separate network for Maharastra Agricultural university Libraries resource sharing on the lines of (AGLINET) for optimum use of the available resources for providing better information services at low cost.

FACTORS OF RESOURCE SHARING

The sharing of resources of agricultural libraries is possible only if the resources of the participating libraries are known to all participants. Their willingness to accept the policy of resource sharing as a compulsory creed should also be evident. Effective resource sharing cannot be satisfactorily achieved unless the resources of the participation libraries are first properly surveyed. It was also ascertained through the questionnaire that these agricultural libraries were willing to share the resources amongst themselves for mutual benefit. The survey also revealed that these libraries would willingly include in the programme all their resourcs such as books, periodicals, reports, conference proceedings, these microdocumetns and pamphlets.

On the basis of the size of their holdings the agricultural libraries in Maharastra are grouped into two classes, viz, those having 50,000 and more items and ther others having less than 50,000 items. The university libraries, of course, fall in the former class. While the college libraries belong to the latter. The possible channels of co-operation in this case are inter-library loans and supply of photocopies (xerox). Even in some cases, certain collections could be transferred on the basis of specialisation. For example, MPAU specialises in agricultural engineering and MAU in food science and technology. They can exchange these collections.

The next factor in resource sharing in agricultural libraries is the sharing of services. As regards technical services, co-operative classification and cataloguing of documents can be effectively attempted especially when most of these libraries are wanting in adequate staff. They can distribute bibliographes or checklists on a reciprocal basis. The present survey revealed that services in agricultural libraries in Maharastra at present are not well organised to make the beginning in centralised classification and cataloguing. For example, on uniform classification system and cataloguing code are followed. Further, no regular biblioguing and documentation services are regula bibliographical and documetnation services are offered. Agricultural university libraries in Maharastra have reporgraphic facilities only to meet the demands of their local users. If these facilities are strengthened, inter-library document delivery system can be operated.

AREAS FOR RESOURCE SHARING OF AGRICULTURAL LIBRARIES IN MAHARASTRA

At present, in Maharastra, research teaching and extension activities in agriculture are being carried out by agricultural universities and their affliated colleges, research centres, and institution of lower agricultural education. The scope of the present study is restricted only to the agricultural Universities and

college libraries in Maharastra. Apart from Agricultural Universities and colleges in Maharastra, central Agricultural Research Institutes of Indian Council of Agricultural Research are also conducting research. Maharastra is the only state in India where there are four agricultural universities. Every university has got its colleges, research centres, and schools of lower education. In Maharastra, three agricultural universities, viz., Mahatma Phule Agricultural University, Rahuri; Konkan Krishi Vidyapeeth, Dapoli and Pujabrao Krishi Vidyapeeth, Akola, have multi-campuses.

Agricultural University and college libraries in Maharastra are spending 1 to 2 per cent (3) of the institutional budget. This is not sufficient to meet the acquisition of reading materials and services. As stated previously, norms to provide library resources and services have been laid down by ICAR, but these are not implemented in proper spirit.

The expenditure on journals and other serials is a recurring one. Subscription rates increase on an average by at least 17 per cent per annum. on the availability of foreign journalis in Maharastra libraries vis-a-vis the IARI library and the resultant duplication. CAB serials, advances, translation journals and secondary services not held by the libraries in Maharastra. Thus while planning a co-operative acquisition programme, a care should be taken to ensure availability of at least one copy of these non-available titles (journals, advances, etc.,) in some library in thestate.

Thus, the following consideration exist for forming aviable co-operative system of agricultural libraries in the state.

1. Agricultural libraries are facing the problem of paucity of funds and technical manpower.
2. Increase in the cost of literature
3. Wide range of subject specialisation in agricultural sciences
4. Increases in the literary output in all sciences including agriculture

Aware of the necessity for resources sharing in agricultural libraries in India, the AALDI organised two seminars (first at Ludhiana from 2nd to 5th February, 1977 and second at Hyderabd from 29 to December , 1980 to Ist January, 1981) with the assistance from ICAR and made elaborate recommendations which include; There is an urgent need for willing co-operation among the agricultural university and institute libraries for sharing their sresources for mutual benefit.

And prof. Eswara Reddy has opined that short term in-service agricultural library managemenent courses may be conducted by National Academy of Agricultural Research, for ensuring better services and optimum co-operation amonst agricultural libraries (4).

Of particular interest in the present context is the paper read at the ICAR-PAU Seminar at Ludhiana in 1977 by R.Subbaiah. Subbaiah's concern was for Maharastra and he emphasised that

The necessity of setting up a mechanism for co-operation in the agricultural oibraries in Maharastra, as this is the only state in India which has four agricultural university that share a common fund creating a situation where there is greater scoper for co-operation (5)

Hence there is a very valid need for sharing the resources of agricultural libraries in Maharastra in the spirit of "Comon work done for common goal". The following activities should be immeidately initiated to promote and strengthen a resource sharing programme of the agricultural libraries in Maharastra through online network.

1. Co-operative acquisiton (2) Inter Library Loans (3) Exchange of Publication & exchange duplicaiton (4) Co-operative bibiliographes, documentation & reprographic services (5) Computation of union catalogue and register of research completed and in progress (6) Co-oprative in training.

The areas earmarked for research sharing are (1) acquisition 2. interlending 3. exchange of publications and duplicates, 4. bibliographical services, and finally 5. training.

1. Co-operative acquistion was thought of as a nececessary step because these libraries have remained poor in resources. Their poverty in resources has resulted from the sharing of finances among the four what should have ideally gone to only one.

It is suggested that Co-operative acquisition should be planned according to subject allocation based upon the existing specialities. The journals and serials that are essential but not available in any of these libraries at present have been identified using the IA-RI list. Efforts should be directed in a concerted manner towards acquiring theses. This can be achieved to a great extent, if not completely, by avoiding the present the duplication and even replication.

2. Co-operative acquisition based on subject allocation results in specialisation which entails interlending between libraries. For smooth and effective interlending an as-exhaustive-as possible code for practice has been suggested. This code, as stated, is based upon an existing code to make it easily acceptable to all.
3. Co-operative acquisition and interlending demand two ancillary co-operative activities: 1. Union catalogues and 2. reprographic services. The former will have to be undertaken and completed as a prerequisite of the total programme. these may be created and subsequently updated

by exchanging between the articipating libraries bibiliographic records of their holdings. The existing in-hosue reporgraphic services will have to be geared up for the success of the proposed resources sharing programme.

4. The suggested exchange of publications and duplicates will obviously be mutually beneficial for strengthening collecions and filling up gaps in serial files.
5. It is also suggested that products of bibiliographical services-documentation lists and bibliographies - should be exchanged to enhance the quality of information service. As a sequel to bibliographical services, all libraries should undertake to supply photocopies of documents that arouse user interest.
6. The last activity included in the proposed resource sharing programme is staff training which should result in staff development. In this respect, two libraries have been identified as resource centres. This was done on the basis of the availability of resource persons, however small in number they may be.
7. It is hoped that the proposal will be workable, as it is based on existing conditions and identified potentials. If this become operational, a regional inforamtion centre can ultimately be established. A note on such a centre appears as follows.

NETWORK ORGANIZATION

For Maharastra Agriculture University Libraries resource sharing, network of computers of four univeristy libraries is a appropriate task because these libraries are in one state, a suitable model for online MAULIS resources sharing network may be selected.

In the case of loop or ring (fig. 1) network all member holds the resources as given the particular area on specialized subject based & co-operation to each other from different adopted technological sources.

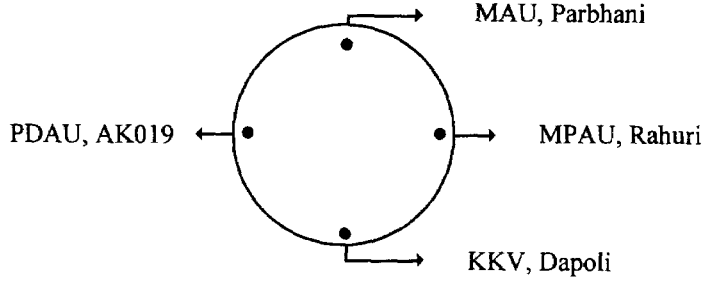


Fig.1. MAULIS

Loop (fig.1) structure works very well when the distrances among the network in remember are short.

CONCLUSION

Thus, the suggested resource sharing programme for Maharastra Agricultural University Libraries are quite rich in information sources, Bibliographical and Technical co-operation among libraries is being attempted manually. The network programmes providing necessary scientific research and training support for the agricultural development through MAULIS and for better information service at low cast by making optimum use of resouces available in different libraries situated in Maharastra.

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RESOURCE SHARING IN CONTEXT OF COST EFFECTIVENESS IN ACADEMIC LIBRARIES

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INTRODUCTION

Libraries of the pat were merely the reservoir of books and pamphlets. Slowly and gradually the readers become aware of their growing needs leading to the development of libraries.

Libraries marching towards 21st Century have to cdope with the information explosion, since a lot of literature is being published all over the world, Sustainability is the need of the hour and refers to the development that can be continued either indefinitely or for the implicit time period of concern. this concept pertains to all aspcets of libraries such as budgeting, personnel, facilities and services. In this paper, we wooould stress on the substainable development of library finances and how to maximize the availability of materials and services at minimal expense.

CONCEPT OF RESOURCE SHARING

With the ever increasing literature, it has become impossible for each and every library, howsoever large it may be, to be self sufficient to cater to all the needs of its clientele. A need was felt among the libraries to share their resources with other libraries because of budgetary curtailments, an excessive amount of published literature, reader's diversified needs, storage problems and above all the inflationary prices of both documents and audio-visual resources.

"Resource sharing" implies a partnership in which each partner has something useful to contribute to other, when needed. It includes any or all of the following presequisites.

a) Materials - Reading materials of all types of formats.

b) Functions - Selection, acquisition, organization and taking care of the collection.

c) Services - Old and new techniques employed in libraries to establish the link between the reader and the reading materials.

It also includes the personnel who run the services and funds that library has for its maintainance.

NEED TO SHARE

The patterns of library services are subject to change in response to the demand from the new dimensions to library methods, techniques and application of technology. The institutions engaged in information services are, there-fore in constant need of information about the latest trends and developments of all concerned disciplines. Information processing and repackging is expensive and so is the creation of information channels. Libraries with their limited resources, face serious difficulties in managing information flow, generated in the printed form alone. As in the case of every other library, it has become imperative for the academic libraries to share their resources and organize services on a cooperative basis to satisfy collectively the information needs of their respective users communities.

OBJECTIVE OF RESOURCE-SHARING

Today, the primary concern of all the academic libraries is to provide, best possible services to its clienteles, which can be done by sharing of available facilities such as technology equipments, man power skills, services, thus maximizing utility of materials and eleminating the wasteful multiplication of printed and non printed information.

RESOURCE-SHARING APPROACH LEADING TO COST EFFECTIVENESS

As stated earlier, this paper emphasises on the study of areas of resolurce sharing from the cost-effectiveness point of view making optimum utilization of library services and resources and to evaluate how for the library budget can be successful in terms of providing level service at less cost, increased service at level cost or much more service at less cost if undertaken individually, without harming the missions of the participating libraries.

No academic library can possess substantially all of the world's literature or any exhaustive part of it. The inability to possess it is understood by expanding mass of printed material being produced and the increasing cost of

acquiring any one of it. To solve this problem, the budget demanding foresight, thorough awareness and understanding of th objectives, setting up criteria for the evaluation of measures to achieve those objectives and suggesting alternative programmes to accomplish goals with the highest benefits and minimum expenses should be formulated. So the librarian should compile a list of priorities underlining the areas wher relatively more finances are needed and point out those where possible reductions can be made. In any case, a reduction in process must not have any impact on the quality of service rendered. He should also balance the limited funds, against the variables of cost, rate of inflation and user needs. This would help in the continuing of the flow of budget smmothly and satisfy the demand of the user.

AREAS OF RESOURCE-SHARING

5.1 COOPERATIVE ACQUISITIONS AND STORAGE OF BOOKS AND PERIODICALS

Depending on the t\strength of existing library collections and the present and future teaching research and training programmes, it may be appropriate if the participating academic libraries develop their existing acquisition policies to ensure consistent and comprehensive development of resource material in their preferred areas. The participating libraries must be concerned about the periodicals and must ensure the reliable supply of currently purlished works. It was found that with the introducting of such a financialy beneficial project, there was enormous increase in the reading material. In view of this the participating libraries will have to keep each other updated with the latest additions of their library collections. Besides optimizing the use of limited financial resources, thus service is bound to help the participants to avoid unnecessary duplication in acquisitions as also in their processing. The success of this service depends upon the fast document delivery.

5.2 COOPERATIVE TECHNICAL PROCESSING

The processing data (classification number, catalogue data and the subject headings) are made available on line or off line to the participants as and when any new document is added to their respective databases. During such an activity not only the duplication would be avoided by the participating libraries but will also ensure uniformity and standardization in processing.

Talking about classification and cataloging, in order to make resource sharing programme, the participants will have to agree to follow the uniform and standard methods. For instance, INFLIBNET has recommended the use of

Dewey Decimal Classification scheme for classification; Anglo-American Cataloging Rules for Cataloging, and the Sears List of Subject Headings or the Library of Congress Subject Headings for deriving subject headings. Similarly, there are other onsiderations in terms of bibliographical descriptions, standard identification numbers. Transliterations etc. that have to be kept in view while deciding the common standards by the participating libraries.

5.3 INTER-LIBRARY LOAN SERVICES

Inter-Library loan service is considered to be a means of borrowing a needed publication which is not available in the library's own stock. The make the service more efficient, the mode of document delivery needs to be expedited. Such services as speed post, courier, Fax, E-mail service etc needs to be introduced for the purpose of quick ducument delivery. Aslo, for documents, availability of localational tools like union lists is more critical.

5.4 PHOTOCOPYING SERVICES

Efficient photocopying facilities and services backed by fast and reliable means of photocopy delivery system as per mutually agreed terms and conditions will also add to the success of resource sharing programme.

5.5 BIBLIOGRAPHICAL SERVICES

Union catalogues are indispensable items for the proper functioning of any inter-library loan network. Union lists of serials, union catalogues of books, are forms of co-operative bibioliographics and help the feaders in locating required material. Depending upon the individual library interest, strength and specialization, these can be taken up by the participants for mutual benefit.

5.6 EDUCATION AND TRAINING

Library being a man-intensive and service-oriented organization, needs a trained and motivated workforce, very essential to the success of cooperative programmes like resource sharing. considerable amount of budget should be allocated for the training of library professionals with adequate skills and right attitude. Library resource sharing and networking programme should also, therefore design and conduct various programmes for the developing of the staff of participating library.

5.7 DATA BANKS

Data banks can be of two types.

a) providing bibliographic information only and,
b) providing the documents themselves.

As libraries becomes more commonly involved in acquiring and manipulating machine readable data, and as direct data transmission facilities are available, data banks will assume an increasing role in interlibrary exchange of information.

5.8 COMPUTERZED NETWORKING

Computer has been an extremely effective device for processing and locating materials quickly and conveniently regardless of distance. The development of the computer has helped to revolutionize the concepts and practice of resource sharing both through making possible bibliographic information networks and actual data networks. The Library of Congress Machine Readable Cataloguing Project has speeded up and enlarged the Netional Union Catalogue that form the basic directory for enter library loan.

On more way of transmitting large amounts of computer data over long distances is by physically transporting tapes or other memory devices from one processing centre to another.

The International Nuclear Information System is an axample of a subject-oriented plan for an international information network. The most well known of the internatinonal networks is the UNISIST, UNESCO and ICSU.

BARRIERS TO THE EFFECTIVE RESOURCE-SHARING

With improvements in international relations, on the one hand and higher economic pressures, on the other hand, there is a greater demand of cooperation at many more levels. Now vastly different world entities, including both newly amerging and already emerged, recognizes a greater need for international interaction and parceive their potential of being able to bring a unique contribution to the world's information access bargaining table.

Several barriers to international cooperation are gaining attention as major issues are considered. They are as under:

i) Lack of the technological sophistication

Resource sharing among the participating libraries have been delayed because of network unreliability and erratical power supply, limited reprographic equipment with concomitant insufficient maintenance and inadequate climate control etc. The lack of equipment to use microfilms, audio-visual media and computerized services cause frustration.

ii) Physical and economic barriers

Distance and costs have limited these services and even hours of opening have prevented full utilization of resources. Shortage of resources human, financial and material are some of the other constraints.

iii) Sociological/cultural/educational impacts

High illiteracy and poor motivation to use services produced, varying service objectives, poor presentation of information, language barriers and the intagibility of many of the benefits of information access were detractore.

iv) Legal Considerations

Copyright censorship restrictions are also a barrier to information resource sharing.

v) Information policies and plans

Lack of available infrastructure and estblished national information policies produced conflicting ad-hoc decisions. Both book trade and libraries presented major barriers.

SUGGESTIONS FOR THE IMPROVEMENT IN RESOURCE SHARING IN ACADEMIC LIBRARIES

7.1 Academic libraries should enter into resource-sharing agreement with other institutions. The resources that can be shared and spared are collection of materials, bibliographical records of various kinds, skilled personnel etc.

7.2 Reciprocity is an important aspect of resource sharing and hence every participant in the network should have something useful to contribute to other participants. It is possible only through two ways.

a) Bibliographic access

Participant libraries should compile and circulate the bibliographies of new acquisitions at regular intervals and annual lists should be prepared to identify the materials, their existence of location.

b) Physical access

Every participating library should have resource sharing deptt. to see that the document is delivered in original or its copy to the needy person as fast as possible. The perfect circulation records should be maintained and the rules should be followed strictly by all the participants to make the system successful.

CONCLUSION

To sum up, it can be said that despite the constraints in the resource sharing among various libraries, the latest developments in field of information technology, are changing the lives of librarians and the profiles of the libraries. New information technology now makes possible the development of a truly working electronic library, an institution that is committed to basic principles of the widest possible access to information; and the use of electronic technology to increase and manage information resources.

Libraries are committed to play partnership role in developing international scholarship and humankind. Concerns for shared information, knowledge and wisdom are intented to emphasize that international planning must be effected, to help avoid expensive mistakes and duplication of efforts. It is a rich, challenging agenda which will carry international and comparative librarianship solidly into next century.

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SPECIALISED MANPOWER FOR SUSTENANCE OF LIBRARY AND INFORMATION SCIENCE PROFESSION

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Abstract Enunciates the sustainable librarianship. The Library's active participation depends upon the active participation of the Librarians. To perform this responsibility meaningfully they need to be trained and the sustainability of library projects is closely linked to the sustained interest of the library staff.

Describes the concept of sustainable development and the role of a moderm librarian in the process of communication in the contemporary social, educational technological and institutional changes.

Explains the necessity of curriculum re-orientation and re-structuring with a view to provide the students with the basic knowledge and experience in the specialised areas.

States the importance of specialisatin in LIS education and need for specialised manpower in the library and information profession to meet the demends of the user community.

Reflects the sustenance of LIS education programmes in producting the specialised manpower capable to function in the contemporary information environment.

INTRODUCTION

"Sustainable librarianship means the combinatin of Philosophy, principles and practics that ensure the continued growth of stock, staff and services in libraries in the changing senario". [1] The library draws its Sustainace from the community it serves. Goodwill and approval of the community is not enough, its active participation in the programme is essential. The library's active participation depends upon the active participation of the librarians. They must act as 'agents of change' in the process of social transfermation through knowl-

edge/information. To trained and the sustained interest of the library staff. The concept of sustainable development has emerged the hope for librarianship to survive and grow. As the information explosion doubling itself in scientific fields, the traditional methods of librarianship are not able to cope up with the volume and variety of information. In the option of Shera[2], a librarian is a metiator between man and the graphic records that his and previous generations have produced and the goal of the librarian is to maximise the social utility of thsese records for the benefit of humanity.

As such a modern librarian has to play a very important role in the process of communicatin in the contemporary time for which he must be well ducated, highly qualified and professionally competent. In S. Saunders opinion "a ful professionally education, infact, should be seen as a partnership between the world of practice and the world of educatin with each having its own distinctive contribution to make.[3]

The changing information environment where information is generated at a faster rate both in traditional print as well as the new non-print media, rising costs and shrinking budgets; growth of telecommunication channels thata disseminate information more widely and rapidly; variety of technological tools and systems replacing the traditional once and user needs becoming more sophisticated, demanding fast, efficient and precise information services, have mede the functioning technology has revolutionalised the activities of humanity. The 'hi-tech' enables the user to access the required information in no time.

The LIS educators in India, giving an objective thought responded with harmonious propocals of curriculum, deleting the outdated areas, and enlarged the dimention of the curriculum paying attention to teh effects of changes onlibrary service and to use the development of information technologies which has extended an immense impact on the LIS profession. The present day library and information professional should be aware of the non-conventional information sources, the required hardware, planning and design of database, how to handle them and get access to the information recorded in it. Hence emphasis has been given in the curiculum on these aspects. Further in the present circumstances it is important to give due attention to the need for developing manpower capable of carrying out evaluation and research on information problems. For this a thorouth knowledte of research mathodologies including the emerging area of quantitatige techniques in the information are necessary. To provide such qualified personnel, about 84 universities in India area offering library and information science education courses. To review the courses in the light of advanced information technologies, curriculum, Development Committee (CD 1992)[4] was constituted by development by UGC (India) under the chairmanship of Prof. P.N.Kaula to develop model cirrucula to improve traditional library and information science education.

The advent of contemporary social, educational technological & institutional change have a significant impact on the activities of libraries and in turn on LIS education. Hence LIS curriculum has been re-oriented and restructured with a view to provide the students with the basic knowledge and experience in basic as well as specialised areas. Steps have been taken by the library schools to introduce two kinds of courses in their MLISC programme as core subjects and elective/specialisation.

OBJECTIVES

Library and Information Science Education is a professional education and it is a specialised area of human training. The objective of the present paper is to asses the sustenance of LIS education programmes in producing specialised manpower capaaaaable of functioning in the contemporary information environment.

SPECIALISATION IN LIS EDUCATION:

Oxford English dictionary defines the terms 'specialize' as to limits oneself to one particular area for intensive study whereas 'specialist' is one who devotees himself to a particular branch of a profession and 'specialisation' stands for the 'application to a special function'. Specialisation means to concentrate on a specific field which would result in the intensive study of it.

As the society is becoming more complex, competitive and dependent on Science and technology, the need for timely organisation, communication and disseminatin of information is growing. Informatin is the key element that marks the diference between the highly developed and developing societies of the world. With the growing international trade, globalization of markets and economic liberalisation, information has required much more importance. there is need to organise, coordinate and fully utilse the vast information for socioeconomic development of nations. This calls for a more broadly-based profession with all its limbs strenghened by way of specialisations to meet the field of information service, the spphistcated techniques and diferenttypes of skills required by information Industry which are not readily available, necesitate such specializations in the field of library and information science. The growth and development of any subject is mostly depending on the identity of specialization. It leads any discipline to grow in all its extension and intension. The specializatin lays foundation for progressive search and development of a subject in a systematic way.

The present LIS education in India Universities is of two tier type each of one year i.e. BLISc and MLISc. How ever, few universities have shifted

to 2 years integrated MLISc course for eg: Madras University, Nagarjuna University Andhra University. The present MLIS syllabus offers seven to eight papers, each of hundred marks and dissertation or project reports ranges between 100 to 300 marks including via-voce. 400 to 500 marks are devoted to the papers like classification theory and practies, cataloging theory and practice and universe of knowledge as 200 to 300 marks are devoted to library systems and information science. It reveals that the present syllabi of MLIS aims to produce more theoreticians rather than the practician librarians. Whereas in America, from their beginnings, library educatin programe have confronted the problem of preparing professionals for work in subject oriented, or special libraries.

The library technology programme (LPT) started by ALA explores the ways and means by which modern technology and latest scientific management principles can be used for improving the library services.

The post world war I years brought about an unexpectedly large increase in the number of business and industries that recognised their need for effective management of information. SLA grew accordingly and grew bolder in its representation, of the training needs of special librarians. In 1926 it appointed its own Committee on Training and directed specific recommendations to Wiliamson. The proposal admittedly radical, called for a complete and separate program for special librarians, to consist of 18 topics (or courses), theory, business economics, statistics, aplied psycholoqy, typing etidint, special bibilographics, principles of clasification, subject indexing, filling, information sources, research, public relations, acquisitions and administration of special libraries. The Committee assumed that this would be an undergraduate curriculum as part of which ect student would take courses in related business or industrial subjects "In 1972, SLA issued a "Minimum standards" to all the academic library training programe". By the early 1950's the accredited schools appeared to have accepted an orientatin to graduate study, thouth not the proposed extended time frame, and by 1957 the BLS degree had disappeared. With the movement to graduate programmes the debate switched to the nature of the "core" curriculum and the extent to which specialisation could be accommodated in an year. The present masters degree programme, which forms the basic for most educational prenaration, is constrined in length. With only a few exception in the United States, the MLIS programm is consicered as one year master's degree with a curriculum which normaly ranges from twenty-seven to forty five credit houre, or from nine to fifteen courses.

In UK, Aslib contributes for special education. The two maincompoinents of this organisation 1) subject groups and 2) Techniques groups cover most of its activities. Subject groups have been formed in biology, chemistry and chemical engineering, computers, economics, electronics,

engineering, social sciences and transport. The technique groups cover translations, informations and computer applications, ALISB and its various specialist groups regularly organise conferences, seminars and professional meetings to discuse issues confronting the library and informatin specialists.

NEED FOR SPECIALISED MANPOWER IN LIS PROFESSION:

Manpower planning in relation to library and information has become an issue of concern. The present day information society calls for specialist professionals. The factores that demands for specialisation can be listed as follows:

1. The effective exploitation of the information/knowledge embodies in any form depends on a librarian's knowledge regarding the scope of the subject and dissemination mechanisme, and also on his ability to search.
2. He requires a specialisd knowledge with rapid advancement in information and communication technology.
3. The librarian can ill effort to ignore the emerging development of electronics media involving satelite communication, interactive television, computer conferencing and electronic mailing which offer information, transfer to meet the needs of informatin seekr. This requires specialised indepth training.
4. The IASLIC thematic sessions on the theme "Manpower planning for library & Information system in India[6]" were hold in December, 1989. The main propositions are: The growing demand for specialised information service in all the fields of national endeavour, necessitates the provision of library and information personnel of high calibre, both in academic and professional qualifications and in personal qualities.

PRESENT SCENARIO

The Professional specialisation seemsto be the necessity to meet the present day challanges. The need of specialisation in LIS education is also feld now a dyas because of increasing complexity in the library cervices and demands of the user community.

The LIS schools are offering specialisation according to the demand and the available resources, classification and subject indexing in management, Information sources and services, INformation technologies have beencovered core subject areas. Traditionally, in India, Academic, Public and special librarian ship are offered as electives.

Report of the curriculum development committee in Library and information science (1992 of UGC India) recommended the special courses and

the following subjects are also sugested.

1. Agricultural Library system
2. Medical LIbrary system
3. Community LIbrary system
4. Law Libaray system
1. Marketing of Information
2. Reporgraphy and imcrographics
3. Financial Management
4. Resources Management
5. Evaluatin of library Science
6. Applied research in LIS
7. Information science
8. Informaton technology
9. CDS/ISIS
10. Operating systems (MS-DOS-UNIX)
11. Information and applications
12. Systems analysis
13. A.V. LIbrarymaterials etc.,

A modular curriculum in Information studies prepared by J.a. Large for the General Information programme and UNISIST Paris: Unexo, 1987 (PGI-87/WS/5), considered the following subjects which could be offered as electives (E13-E20).

1) Design of Computer-Assisted Information systems
2) Sectoral/subject oriented information sources and systems
3) Planning and Design of Buildings and facilities for information centres and libraries
4) Online searching
5) Health and welfare library and informatin services
6) Agriculatural library and Information services
7) Audiovisual studies
8) Printing, Book binding and conservation.

The American librarians and library and Information scientists have been dealing with such specialisatians as

a. management techniques
b. collection development
c. information systems, information storage and retrieval
d. non-book materials, acquisition and processing
e. computer and information technologics
f. Micrographic production, storage and organisation

g. LIS education
h. data bases, generation, management and services
i. bibiliometrics, scientometrics and informatrics
j. public services, including reference and information services

The following special topics have been generating interest among the British library and Information professionals

a. design of information systems
b. application of new technology
c. management ot operations
d. range and quality of services
e. promotion of more effective use of library resources
f. databases: generation and management
g. LIS education
h. subject indexing
i. user education and informationeeds
j. cost-benefit and cost effective studies of library operations and library services, etc.

The present syllabus offers one elective paper on any one library systems which fails to give justice to the particular library system et: academic, public, special etc. Various library techniques, systems and operations cannot be covered in only one paper. Furthier, qualified staff must be essential to tech .new methods and techniques in specialised areas of the study, the teaching imported now on information technologics in defient to develop dynamic and capable perconalities.

The Madular curriculaum in Informatin studies propared by J.A. Large in 1987, enunciated that the teaching staff of a high quality are required to cope with this complex and wide ranging discipline. Staff should ideally posses a firest degree of a high standard as well as post graduate qualification in Information studies, computer science librarianship or other related area, together with relevant operational experience. Proven research ebilities and a publication record would be advantageous.[9]

The LIS schools should offer specialisatin within the curriculum which will cater for widen employment opportunities. At present the computer knowledge is required in all cadres of appointments and the qualifications and scale to pay do not have any significatins and scale to pay do not have any significaance on the demand. Students admitted to a post graduate programme in informatin students Should be ideally possess a first class degree. Every effort should be made to maintain high academic admission standards. Intelligent and enquiring minds are needed to become Information Scientists.

SUGGESTIONS

For effective utilisatino of the library facilities, the performance and productivity of library professional are vital. The professional education courses have not kept pace with the fast changing information environment influenced by new technology.

I (a) A typical University coursed based curriculum is probably the best way to develop an information professionan with enhanced skills for acting on specialisea knowledge.

(b) He must possess scienfitic and scholarly knowledge about a subject domain of interest to his clientele and he knows about the sources and characterists of that knowledge.

II. The Professional associations like IASLIC, ILA, GILA, MLAI etc may offer programmes for special education in their fields for eg: National Medical library offers 4-6 weeks programmes on Medical libraarianship. MLA has a proposal to conduct a fullfledged course on Medical librarianship. On similar grounds the professional bodies can offer special education programmes.

III: (a) In service training is an important component of staff development programmes and constitutes on integral part of manpower planning. (b) profesional development programmes like referesher courses, seminars, work shops, study circles etc. have a vital role in bridging the gap and revising professional skill and competance. However a number of professionals are being sent for advance training to developed countries like United States and countries in Europe though the benefit of fellowships as countinuing education programmes.

CONCLUSION

The concept of an information professional carries with it several implications for his education. He must be steeped deeply enouth in the information handling of specific areas such as Science and Technology Social Science and Humanities. this requires specialised education and training in order to understand his clinents needs and the nature of the information generated and required. He must master the special informatin collection, handling and disseminating methods of his particular information profession, and he must have an understanding of the current and potential technologies that may be used to execute his duties.

The LIS schools in India are striving to develop specialised manpower and accordingly they are offering a variety of electives. However, it is onvious that ht intentions are not carried out to reality. It is high time for the

LIS schools to consider the realities and find colutions to overcome the existing drawbacks in offering specialisation. On the other hand, the employees also should insist on specialisation in a specific field at the entry level which will help them to improve the services of their information centre.

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SUSTAINABLE CLASSIFICATION WITH SPECIAL REFERENCE TO COLON CLASSIFICATION

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Abstract There are great challenges to the sustainable librarianship in the coming 21st century e.g. Crisis of identity, information explosion, information demands of the users, limited resources with the libraries, inadequate grants from the UGC and other funding agencies. But, there is also a great challenge for 'sustainable classification'. Various classification systems e.g.DDC,UDC, CC, BC-2 BSO etc. are struggling for their existance. Colon Classification, a faceted classification system, one of the most scientific one, lacks institutional support for its sustainalbility in future. It stheory in the form of various principles and canons has revolutionized, the concept of classification. The concepts Facet Analysis and Fundamental categolries have helped to a great extent in the computerized storage and retrieval of information. Knowledge Organization and Knowledge Representation have been benefited by the various principles and canons of classification given by Dr.Ranganathan. Further Work has been done on these by various persons. There is further need to explore these principlf for their more usefulness for Knowledge Organization in various databases.

INTRODUCTION

The idea of 'Sustainable Librarianship', the theme of this 43rd ILA Conference (1997), has come from the concept of 'Sustainalbe Development' which has its deep roots in the theories given by Adam Smith (1723-1790) and Thomas Robert Malthus (1766-1834)2 in the 18th century in ralation to economic growth, limited resources and continuous growth in human population.

SUSTAINABLE DEVELOPMENT

The dictionary meaning of 'Sustainalbe' being able to 'keep up' or 'maintain' or 'to continue in future' leads to mean 'Sustainable Development' as the "continued development now being fair to the future or the development capable of being maintained at a certain rate or level."3 Brundtland Report (1987) defines it in a bit detail as the "Paths of human Progress which meet the needs and aspirations of the present generations and without compromising the ability of future generation to meet their needs.4

Today, sustainable development is not only the concern of economists or the sociologists, but, the biologists, ecologists, geologists, environmentalists, library and information scientists all others related directly or indirectly to the information industry are equally concerned with this phenomena undergoing a rapid change.

SUSTAINABLE LIBRARIANSHIP

On the basis of the above discussion on sustainable development, A.T.Sethi has defined 'Sustainable Librarianship' as "the combination of philosophy, theory and practices that ensure the continued growth of stock, staff and the services in the libraries in the changing scenario of technological and social change"5. According to Sethi, its five premises are:6

2.1 'Better' not 'More';
2.2 'Dependence No', 'Participation Yes';
2.3 Global Thinking, Localized Action;
2.4 Involvement of Beneficiary and Agents of Change and
2.5 Assimilate the 'New' hold to 'old'

With the technological and sociological changes which took place in the 20th Century and are going to take place in 21st Century, we are going to step in, there are great challenges before the librarianship to sustain in future e.g., Crisis of Identity, information explosion, information demands of the users, limites resources with the libraries, attitude of the professionals etc., Another 'Sustainable classification' is of great concern, as some people think that with exhaustive indexing of the computerized databases and knowledge bases, there will be no need of classification in the conventional form. But, on the other hand the opposite view is that so long as the documents are there, classification will sustain in the conventional form. Moreover, indexing is nothing, but classification without notation.

SUSTAINABLE CLASSIFICATION

Classification used in the conventional sense of grouping entities (objects) to form classes. The objects in a class share properties in common. The purpose of classification is to organise the knowledge (documents) in a library in a helpful sequence for easy retrieval to the users. According to John. P.Comaromi (1937-1991),7 a classification system is expected to perform three functions:

i). Organization of ideas i.e, filiatory sequence representing the structure of knowledge (The cogonitive function)
ii). Organization of document surrogates (the bibilographic function)
iii). Arrangement of documents on shelves (The library function)

The documents in library are arranged according to the main-classes of classification scheme which gives them a particular sequence (subjectwise). The users find this arrangement helpful while locating documents of their interes, as all the correlated documents are put on the shelves.

The most fundamental paradigm shift in classification is the twentieth century has been from largely enumerative to largely synthetic classification. The shift continues to be strongly supported by economical and technical forces.8. The concept of 'Facet Analysis' also knowns as 'Conceptual Analysis of subject matter'9 gave rise to faceted classification schemes. The first International Study Conference on Classification for information retrieval organised in Dorking (england) on May 13-17, 1957, accepted 'Faceted Analysis' as the basis of classification for retrieval of information.10

Classification is not merely giving classification numbers to the books and arranging them on the shelves, but now, it is known under the new names of Knowledge Organisation and Knowledge Representation due to change in the nature and means of storage and retrieval of knowledge. Knowledge has become now multi-dimensional, inter-disciplinary, dynamic and unlimited.

3.1 USE OF THESAURI IN KNOWLDEGE ORGANISATION AND REPRESENTATION

Various thesauri have comeup for the use of broader terms, narrow terms and related terms for storge of information in the computes. some of these have given class numbers to the terms so as to minimise the 'noise' while retrieving similar terms with different meanings. No two terms with same spelling will appear if these are classified. The 'classaurus' is the best example of usefulness of classification numbers alongwith the indexted terms in the com-

puter databases. There are typical articiles by Devadason11 and Biswas and Smith[12] on the development of 'Classarus' and its usefulness in vocabulary control. A few experiments with UDC have been carried out.

3.2 UDC AS A TOOL FOR KNOWLEDGE ORGANIZATION

The UDC has been projected by the FID successfully for the storage and retrieval of information at the international level, as according to Jean Perreault, the UDC, being both hierarchical and general-categoric, provides the desired structurality. At the same time the defect of the UDC from the standpoint of faceted classification is the symbol for general relationship, the colon (:) gives no guidance as to the specific relation existing between the terms linked.[13] However, the consideration of the means for increasing the applicability of UDC to mechanized retrieval are present and are being exploited.

UDC is attempting to meet the needs of its users in different circumstances, and area san dit is also provides a good tool for information retrieval. It sees its future as a tool for processing information accross langauge barriers, but at the same time it realizes that in order to do this effectively, it will have to introduce a great mueasure of standard practice than has been the case in the past and it will have to submit all its tables to a rigorous editorial process in order to eliminate ambiguites.[14]

Apart from UDC, other classification scheme like DDC (Ed.18 onwards) and BC-2, BSO and special classification schemes of the CRG(London), have also come in the computerized from 'Dewey for Windows', a Microsoft WindowsTM, based version of DDC (21st ed) has also been released in August 1996.[15] Diance Vizine-Goetz has used the capabilities of UDC and DDC classification notation to improve document accessibility in the WWW.[16]

SUSTAINABLE COLON CLASSIFICATION

Colon Classification (CC) was published in 1933, though the preliminary work on this faceted classification was started by its originator Dr. S.R.Ranganathan (1892-1972) about nine years ago in 1924. By that time, Dewey Decimal Classification (DDC), Universal Decimal Classification (UDC) and the Library of Congress Classification (LCC) had already established themselves. The CC was different from these classification systems although, being a faceted classification it was somewhat similar to UDC. But the UDC could not get out of the main class strucutre of the DDC, of which it was an adaptation. The subsequent revisions of CC came in 1939, 1950, 1952, 1960, 1963 and 1987.

The theoritical basis were crystalized for this classification system in the first edition of Prolegomena to Library Classification (1937) 17 and were incorporated to a limited extent in the second edition of CC (1939) and third edition (1950). The concepts of 'Facet Analysis' and 'Five Fundamental Categories' were applied practically in the 4th edition (1952), Four distinct symbols Comma (,), Semicolon (;), Colong (:) and Dot (.) were assigned to the different five fundamental categories- Personality, Matter, Energy, Space and Time (of course same symbol of Dot was give to two categories Space and Time, which were later distinguished by two symbols Dot (.). and Single Inverted Comma (') in the sixth revised edition (1963).

The First International Study Conference on Classification for retrieval of information, organised in Dorking (England) during May 13-17, 1957, discussed Ranganathan's contribution to classification extensively and accepted the 'Facet Analysis' as the basis of classification. However, there was difference of opinion among the participants over the Five Fundamental Categories (P),(M),(E),(S),(T). According to the members of CRG (London), their number could be more or less depnding upon the subjects of classification. [18]

4.1 Colon Classification and Computer Technology

Observing the emerging use of modern information technology in processing bibilographic data, Ranganathan understood the importance of depth classification in relation to the powerful capacities of computers in creating multiple access points and dynamic search procedures for identifying microscopic units of thougt embodied in different pieces of information. He stated that 'Electronic engineering has begun to throw a challenge to the theory of classification'. [19]

The emergence of new technology gave him a sort of intellectual stimulation for sharpening the his theory of classification in depth on the idea level as well as on the notational level. Commenting on the "Doc Finder", one of those days electronic aids for document retrieval he argued:

> *"...it is not going to enable the classificationist or the classifier to rest on his oars. On the other hand, it will make his work more than ever before.This should be realized by the library profession and particularly by its specialized branch called the professional documentalists"*[20].

According to Peter Ingwerson and Irene Wormell:

> *"His theory and the application of scientific principles in analysing and synthesizing a specific subject and to indi-*

vidualize it out of millions, can be seen as a phenomenon similar to those research interest that have guided other scientific areas too. For example, in Physics, where the atom was split and the Bohr-Rutherford Model of the constituents of the atom served as theoroetical basis for the explanation of its propertiesl; and in Biology, where DNA and RNA were observed in cells and research got a step closer to the understanding of the micro world of genetics".[21]

4.2 COMPUTER AND INDEXING

Computers are able to help syntesize fragmented discipline through post-cordinate indexing. When used in conjunction with systems of classification, it becomes possible to create new knowledge implicit in studies that have already been published, but from which no in inferences have been drawn. This new knowledge is created by generating new combination of concepts there by giving information system a role in the stimulation of creativity.[22]

4.3 USE OF RANGANATHAN'S PRINCIPLES

Ranganathan's principles used in the Chain procedure became helpful in evolving the computerized indexing systems like POPSI and PRECIS.Devika Aptagiri, Gopinath and Prasad have evolved a system which tackles the different steps in indexing after the formulation of the expressive title, which is only step done manually. The frame-based knowledge representation system assigns the indicators according to the categories DEPA (Discipline, Entity Property and Action) prescribed by POPSI and automatically generates the subject strings.[23] Bhattacharya has reviewed contributions of Ranganathan classification research rooted in his approach to verbal indexing based on facet analysis.[24] Fugmann acknowleges the importance of Ranganathan's work to his theory of information supply and indexing.[25]

Neelamagham has practically shown that the process of dividing the information/subject content of a database into fields and subfields is similar to the process of analysing and dividing the information about the given univrse of entities/subjects for which a classification is designed. Such a division is done by selecting appropriate common and differentiating attributes (characteristics) of the entities. The 'Cannons for Characteristics' and 'Cannon for Succession of Characteristics' are helpful in this process.26. According to him:

"Specialized databases of the object oriented type forming the basis for preparing value-aided products, and knowledge

bases for use in expert systems intelligent information systems, decision support systems etc., can be developed with some of the widely available low cost software and the applicaton of the analytico-symthetic methodology and the principles and postulates of the General Theory of knowledge classification. Their application to machine readable databases, particularly to object databases, knowledge bases and expert systems are more recent."[27]

Concept categerization and knowledge organization are used in one form or another in knowledge bases. Such organization of concepts also helps in recognizing the types of inter-relationship that may exist among concepts in the particular subject domain and linking them accordingly with a view to assisting uses browse and navigate more conveniently in the new knowledge base.

Neelamaghan has shown the application of Canons of classification of 'Canon of Differentiation', 'Canon of Relevance', 'Cannon of Ascertainability',and 'Canon of Permanence' successfully in the preparation of databasis for Chemists Motor Car Production and for Coal Supply System in his paper on S.R.Ranganathan's General Theory of knowledge classification in designing indexing and retrieving from specialized databasis.[28]

Earler, Venkataraman and Neelamaghan successfully formed isolate numbers by computers using devices of Colong Classification. The experiment was performed in late 1960's, when computers were just in the beginning of their use in a country like India. They prepared various Flowcharts and tried these on the computer using various devices of CC like 'Alphabetical Device', 'Numerical Device', Geographical Device', 'Environemnt Device' and 'Chronological Device'.[29]

Ranganathan has projected his de facto national scheme of CC as the 'Self Perpetuating Scheme',[30] which it could not be, as according to Dr. Satija "No social institution or Man's creation can be self-perpetuating in this sense"[31]. However, its theory in the form of various canons, principles and postulates has been successfully used in organisation of knowledge in computerized form, for the preparation of various databasis, expert systems and knowledge bases.

4.4 FUTURE OF COLON CLASSIFICATION

The CC scores high because of its creator but, unfortunately it has virtually no institutional back up as is the case with DDC, UDC, BSO and BC-

2. Due to this reason, the seventh edition of CC has come after a long gap of 24 years in 1987 (after 15 years of death of Dr. Ranganathan) and that too, without the Index, which is a great handicap in using it in the libraries. Prof. M.A.Gopinath edited it almost single-handedly. No Editorial Board was ever constituted for the revision of the CC, though Dr. Ranganathan once talked about it in a seminar on Classification in USA. 32. The 7th edition of CC has been criticized by many persons because of its inadequacies. The system is dying a slow death due to its non-revision. Dr. M.P.Satija 13 has made some suggestions for revitalizing this system which include:

i). A Colon Classification Association be formed to propagate Colon Classification.
ii). Some Institutional support be sought for the system, since some national library organization must be responsible for the upkeep and spread of the CC.
iii). Prof. M.A.Gopinath be requested to form a broad-based Editorial Board to assist him.
iv). A new revised edition be brought out updating and correcting the erros of the CC-7 (1987). The CC-6 and CC-7 should be merged.
v). A CC bulletin be started to keep in touch with the CC users and researchers.
vi). A directory of CC users be compiled
vii). The use of the CC on Online system be studied and CC be broughtout in a CD-ROM version.
viii). Periodical conferences and refresher Courses on the CC and faceted classification be organized.
ix). An official manual on the use of CC schedules be prepared (On the lines of the DDC manual). This will be a device whereby the CC classificationists and classifiers can understand each other.
x). Public relation of the CC with the library professionals be sprued up. Librarians at large should be educated about the high and peerless qualities of CC.

The Colon Classification can be sustained only by acting immediately on the above suggestions. Instituional support is must for a system to sustain as no individual effort can accomplish this huge task. Major schemes are coming on the On Line and CD-ROM versions. CC should also be available in the electronic media in order to complete with other schemes. Public Relations (PRO-ship) plays its own role in advertising a system. More PRO-ship is required to popularize CC.

CONCLUSION

No doubt, there are great challenges to the sustainable librarianship in the coming 21st century e.g. Crisis of identiy, information explosion, information demands of the users, limited resources with the libraries, in adequate grants from the UGC and other funding agencies. But, there is also a great challenge for 'sustainable classification'. Various classification systems e.g, DDC, UDC, CC BC-2, BSO etc are struggling for their existence. Colon Classification, a faceted classification system, one of the most scientifc one, lacks institutional support for its sustainability in future. Its theory in the form of various principles of and canons has revolutionized, the concept of classification. The concepts of Facet Analysis and Fundamental categories have helped to a great extent in the computerized storage and retrieval of information. Knowledge Organization and Knowledge Representation have been benefited by the various principles and canons of classification given by Dr. Ranganathan. Further work has been done on these by various persons. There is further need to explore these principles for their more usefulness for Knowledge Organization in various databases.

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SUSTAINABLE LIBRARY & INFORMATIN SERVICES : SOME OBSERVATIONS

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CONCERN FOR TOMORROW

'Concern for tomorrow' has haunted human king through our. While the sense of 'survival' is common to all living being, the sensibilility if 'sustenance' is unique of manking alone. To-day, when the human society is at the pinnacle of material progress, the 'concern for tomorrow' has not deserted it. There is a concern all over the world that our current organisation of society is not sustainable and that we need to undergo a transformation to save our tomorrow.

SUSTAINABLE DEVELOPMENT

i) It is this concern which led the General Asssemby of the United Nations it constitute a group in 1983, under the chairmenship of the Prime Minister of Norway, Mrs. Gro Harlem Brundtland, to suggest a blueprint for th future development, resulting in a path-breaking report, entitled 'Our Common Future', more popularly known as the Brundtland Report. This report gave the term 'Sustainable Development', defining it as "the paths of human progress which meet the needs and aspirations of the present generetion without compromising the ability of future generations to meet their needs".[1]

ii) An important implication of this seemingly simple but depth-concealing definition is that it does not place 'sustainable development' in the exclusive zone of any one subject-field. As explained by Pearce, "what is being sustained can be anobject of choice - an economy, a culture, an ethnic grouping, an industry, an eco-system, or sets or eco-systems."[2] Sustainable development is the concern of all those who are engaged in 'paths of human progres'. Librarians are in no less measure engaged in this pursuit; hence their claim to discuss and debate the sustainable development of library and informatin services, or, in short 'Sustainable LIS'.

iii) Sustainable LIS should meana ian the light of above discussin, the combinatin of philosophy, principles, and practices that ensure the perpetual growth of library and information services.

CHALLENGES TO SUSTAINABLE LIS

Amont the threats faced by the LIS to its continued growth are the i) decline in sustainable reading due to audio-video proliferatin; ii) increasing digitisation of textual and graphic material rendering the print material costly in terms of its productin, acquisiton and storage; iii) increased cost of developing and maintaining libraies; iv) decreasing State patronage to libraries; and, above all, what Crawford and Gorman[3] name as, v) enemies of the library, including librarians themselves, library educators, informatino specialists, dubbing them as 'new barbarians', and 'techno-junkies'.

PILLARS OF SUSTAINABLE LIS

Librarianship has had its hey time, from the last quarter of the 19th century to the last quarter of the 20th. This edifice, built up and nurtured so lovingly by a strig of libray pioneers all over the world, is today shaky and needs to be supported by pillars of

a) sustainable education (E)
b) sustanáble sources of finance (S)
c) sustainable technology (T)
d) sustainable management methods (M)
e) sustainable philosophy/principles (P)

a) sustainable education

Library educatin and practical librarianship are not marching together in our country. While the former is neithe current nor relevant, the latter is devoid of theoretical updating and is engulfed by ingulfed by ignorance. Thanks to the schism between the two, both stand to suffer. Links have got to be reforged between the two to bring them closer to each other once again. Let the two sustain each other. In brief, the sustainable LIS educatino should hav the following components:

i) inductin of properly qualified persons, with a bent of mind for librarianship, at the stage of admissios;
ii) uptodate and continually revised syllabi, with a substantial component of practical training in library aenvironment;

iii) continuous updating of LIS teachers;
iv) continuous education of library staff; and
v) closer collaboration between the LIS teachers and the library staff.

b) Sustainable sources of finance

Sustainable LIS would require:

i) institutional support for library stock, services and staff;
ii) provision of special library services on nominal charge basis to regular library members;
iii) provision of special library services on full charge basis to business and industrial users;
iv) mandatory resource sharing among libraries; and
v) allowing libraries to raise finances from philanthropic associations, by providing rental services, or through any other yet untapped legal means.

c) Sustainable LIS technology

Paper is, and will always be, a preferred medium for general reading. However, for specific types of reading materials, appropriate information technology has got to be introduced in LIS environment. Two things have to be remembered in this connection. Information technology is in a state of flux, it will take quite some time for it to stablise. Meanwhile, the libraries should bot be allowed to be used as guinea pigs for It experiments. Frequent updating of technology would render the libraries as 'museums of failed technology'. Secondaly, libraries have to assimilate the informatin technology into thier functioning, not be overcome by it. Library 'Sanskritizatin' (in the sociological sense) of the terminology of informatin technology will have to be undertaken to bring it to our fold. This aspect of sustainable LIS is full of challenges and hence of opportunities.

d) sustainable LIS management/methods

i) Libraries, particulary the ones attached to universities, scientific and other industrial organisations, are increasingly being callaed upon to functin as independent managerial units, requiring their operators to have a proper mix of human, administrative and technical skills. Awareness of, and willingness to apply, management principle and techniques are sine qua non for a modern day librarian. The Total Quality Management (TQM) approach, presently largely oriented towards productin and profit-making venture, can with suitable qualifications, be successfully applied in service-oriented not-profit outfits including the libraries.

ii) LIS methods, such as collection development, cataloguing, reference service, documentation service, are and may remain principally manual operations requiring largely the application of human mind; information technology can only expedite their exectuion. Routitne LIS operations, such as serials control, charging and discharging, catalogue search, etc., should preferably by information machines for prompt disposal.

e) Sustainable LIS philosophy/principles

If we want to sustainable LIS succedd, it has got to be based on the rock of a solid philosophy, and linked to certain principles. No idea, or a subject, achieves recognition and respectability until it is backed by a set of principles, a theory, a philosophy.

The Five Laws of Library Science, propounded by Dr. S. R. Ranganathan (namely, books are for use; Every reader his/her book; Every book its reader; Save the time of the reader; and Library is a growing organasm) have the strength and the capacity to provide a philosophical framework for sustainable LIS. Writing about the sustainability of these Laws, G. Bhattacharya said, "These Five Laws constitute a fundamental contribution to the development of library science, documentation and informatin science. They are fundamental because they are relevant in relation to the present day developments of these disciplines, and they will continue to be so in relation to their future development".[4]

Principles are the guidelines to be followed for future course of action. Sustainable LIS would have to evolve its own principle or set of principles for future development. An exercise in this regard was done by the author[5] half a decade back, and is convinced by their steadfastness over the period. Sustainable LIS, according to these principles, will have to be based on the premises of:

i) 'Better' not 'more'.

The emphasis in libraries should shift from 'big collections' to 'better services'.

The aim should not be 'to have', but 'being able to have'.

ii) 'Dependence' no, 'Participation' yes.

Dependence creats uncrtainty and imbalances. Perhaps the time has come when libraries should shed their stance of 'No profit' organisations in favour of 'No profit, no loss' organisations. However, sharing of resources on

reciprocal basis among libraries is not dependence but participation, and must be encouraged.

iii) 'Global' thinking, 'Localized' action.

While developing and retaining a universal outlook in the matter of collecting information, a librarian has to operate in the sphare of service in a particular milieu. The immediate environs of the library, which sustain it financially and which provide readership, should guide his day-to-day decisions and actions.

iv) 'Involvement of the 'Beneficiaries' and the 'Agents of change' in the programmes and policies of library and informatin centres.

v) Assimilate the 'New', hold on to the 'old'. Holding on to its traditional philosophy, librarianship of to-day can atain the status of sustainble LIS by cultivating the capability of assimilatin of new thoughts, new technology, new practices.

EPILOGUE

No words can be more soothing, more concerning to us in a country - the U.S. - which has experienced both the best and the worst phases of librarianship and of information sciences, and published by that doyen of library associations - American Library Association - which knows what it is talking about: "It is vital that libraries remain true to their own standards, missions and goals. The surest path to irrelevance is to allow yourself to be defined by defined by someone else. Librarians who accede to being called 'information professional's and libraries who go willigly into a subordinate role, e.g. Information Technology Division, have lost control of their destinies. This is not, as it is sometimes presented, an argument about names and hence, a trivial matter. It goes right to the root of the identify of a profession and a centuries old cultural construct-the library - of great tradition, honour and usefulness. A library by any other name does not smell as sweet, and a library that distorts its collections and services to bend to technological facts is not realy library."[6]

Librarianship will die if librarians kill it off; it will thrive if they want it so. The decision is ours.

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SUSTAINABLE LIBRARY FINANCES IN SUPPORT OF THE PUBLIC LIBRARY SYSTEM IN ORISSA

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Abstract Library Finances in Orissa have been a matter a concern over the ages. The article presented seeks to trace the history of finance from the days of Ashoka period to modern days and suggest the library funding to be taken up under the care of a Library Act. A Library Act is in the process of sharpening in the hands of the legislatures of the State. It has suggested that 10 % of the education budget should be earmarked as a means of sustainable library finance so that the public library system can run efficiently without any fear or fatigue. It is suggested that a tax free library act should be the major device so that different sources of sustainable library finance could be acquired from the public instead of taxing them. Lastly the article provides the position of public library system in the State. These library should be netted into a coherent system for deriving finances.

Finance is the main cause of concern for any activity. Without finance, no activity can be taken up. Therefore, there has been various efforts to augment ways and means for a suitable library finance.

In this article, we are going to see a source on sustainable library finances for running the Public Library system in Orissa. Any Public Library in any area is a means to provide reading and reference services in respect of the available literature on any of the recorded media so that the reading public is not denied access to the sources of information. In this connection the Public Library does not prescribe any taxation for referring the documents. In turn, we may say that the Public Library is a service library for access to information without cost or payment for the services thus provided by the library.

The UNESCO manifesto and the objective of Public Library Act have been broadly based on the above objectives of providing a free and fair Public Library Service to every citizen, their right to access to information.

Orissa in the context of Public Library Services have been endeavouring through the ages to provide access to information by employing persons or group of persons to the seekers of knowledge. In the days of Ashokan, Kharvelas and later emperors of Orissa, the Public Libraries have been organised by appointing the Mahamatras, Amatyas or Ministers-in-charge of record rooms and public records.

During the days of Matharas, the Eastern Ganges and the Saioldhavas etc., Public Library Services have been strengthened by engaging Brahmins and priests with the support of subsistence from the royalties. This system has continued upto tghe days of the Suryavanshis, who have provided tungis with the contributions of the village folk. For the first time donations have been identified as the sources of revenues and finances for running the Public Libraries created in the Bhagabat Tungis.

Every village in the medieval period had therefore a Bhagabt Tungi as a village public library. Each family of the village was encouraged to donate materials and money needed for running the tungis. The Muslims and Marathas introduced Daptarkhanas with specific fees and taxes for seeking a source of information or copy any document kept in the Public Library. The Marathas and the Europeans lastly introduced various types of taxes for the seekers of a copy of the information or any document. Public Library therefore became a charitable organisation started flourishing with the contributions and donations, fees and benevolence of various groups of the people. With the passage of time the pattern of the finance has been changed.

Some of the ruling chiefs and the Maharajas of the Feudatory States introduced trust funds to run the Public Libraries and libraries donations were raised. Lotteries were drawn. Performances were shown to raise funds, later on grants were provided for maintenance. Still later, marketing or sale of printed books, publications became the source of library finances.

1) Library funding

Funds under the Departmental libraries of Govt. of Orissa have been the major sources of finance. In this connection it is to say that the fund for the Library Services is enriched with the contribution from Govt. of Orissa, Govt. of India, RRRLF and various other agencies like E.Z.C.C. National Book Trust of India etc., Similarly the fines, overdue charges, services charges, copying charges translation charges, endowment, subscription, sale of publications, bank interest on fixed deposits, donation, fees etc., are the sources of Public Library Finances. In a private sector, sale proceeds of various items, agricultural products, donations, subscriptions, grants etc, are the sources of different libraries.

All the sources of library finances are to be made sustainable. In order to make the system sustainable it is necessary to enact for provision of Public Library Services through adequate finances. In this connection the draft Public Library Bill of Govt. of Orissa proposes to provide library finances in the form of grant-in-aid, marketing of suitable library services, contribution of Non-Resident Indians, exemption through income tax, introducing membership charges, copying charges, consultancy fees etc.,

2). Sustainable funding

If 10 % of the education's budget is earmarked as a means of sustainable Library finance, then there is no fear to run the library system efficiently. The State Govt. if planning to introduce a tax free but sustainable library finance required for the Public Library Services in the State. Hoped this is being agreed to by Govt.

At present the State Govt is spending Rs.1.20 crores under the public library services. So far the below mentioned libraires have been provided:

1.	State Capital, BBSR	a)	H.K.M.State Library
		b)	Bhubaneswar Public Library
		c)	State Information Centre
		d)	A host of voluntary library services through Ramakrishna Mission, Town club & Godabarish Sahitya Parisads, etc.,
2.	City Library Services	a)	In the cities of Cuttack, Berhampur Rorkeal, Sambalpur, Puri, Public Relation Deptt.'s reading rooms.
3.	Dist. Headquarters	a)	Dist Libraries
		b)	Dist. Information Centres
		c)	Muncipal/urban local bodies or NAC libraries or reading rooms
4.	Sub-divisional Libraries	a)	Library services are provided by Muncipalities, Public

			Relation Dept. Industrial Houses and Civic administrations
		b)	Sub-divisional information centres
		c)	Libraries through the NGOs
5.	Block Levels	a)	Gandhi Pathagars & NGOs
6.	Panchayat Level Libraries	a)	Through the Panachayat Libraries (G.P.Deptt).
		b)	NGOs
7.	Village level	a)	The RRRLF aided libraries
		b)	NGOs

These libraries are to be net-worked so that a sustainable library finacne could be provided to the libraires followwing in the net-work. In order to watch and ward the above system, it is necessary to creat an authority with the powers to oversee the sustainability.

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SUSTAINING LIBRARY FINANCES THROUGH RESOURCE SHARING

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Abstract Libraries and information centres entrusted with the task of procuring, organising and disseminating vast amount of information being generated have to move within the budgetary constraints. Co-operation among libraries is required to strengthen services and as a means of cost-effectiveness. Union catalogues, bibliographies and indexes are the tools to help achieve sharing of resources among libraries. The task has become all the more easier with the adoption latest i nformation technology and telecommunication techniques by the libraries and information centres. Creation of computer based networks have facilitated resource sharing among participating libraries. Thus the libraries will have to go in for automation for adopting latest information technology. Library staff will have to be conversant and properly trained in handling latest techniques of information retrieval and dissemination. Streamlining of inter-library loan procedures through some draft code and standardization of library routines and services have also become necessary keeping n view the prevailing situation.

INTRODUCTION

In the present day world, there is an explosion of information and knowledge. The results of enormous research activities are coming in different forms and languages, which are documentary as well as non-documentary. Knowledge recorded n various documents is in the form of books, periodicals & so on. The non-documentary sources are microfilms, microfiches, magnetic discs, tapes, CD-ROMs, multimedia and on-line databases. All these sources are not available through regular book trade channels. To handle this vast amount

of information which is varying and of comples nature has become a difficult task for any library. Library and information centres are the formal sources of information. They have to provide the basic input so vital for any research and development activity. It is the library and information centres which have to make available nascent thought to the researchers by procuring, organising and disseminating information.

FINANCIAL CONSTRAINTS

No library or information centre in the world is self sufficient today in terms of materials and facilities. The have to move within the parameters of budgetary allocations. The cost of reading material is already high and ever increasing partly due to rise n prices and partly due to devaluation of India currency in terms of foreign currencies. The Table I shows a continuous increase in the subscription cost of some of the important research journals being subscribed by the Panjab University Library.

TABLE - I

Subscription rates of some select periodicals

Title	Year					
	1992	**1993**	**1994**	**1995**	**1996**	**1997**
1. Biological Abstract	$4925	$5225	$5670	$6050	$6500	$6900
2. Chemical Abstracts	$14660	$15860	$16350	$18775	$19530	$18484
3. Physics Abstracts	£1435	£1530	£1630	£1780	£1950	£2130
4. Inventiones Mathematica	$1987	DM3480	DM3485	DM3598	DM3835	DM3994
5. Biometrika	$110	—	£67	£67	£67	£124
6. Statistical Theory & Methods Abstracts	$135	—	—	£100	£128	£128
7. Modern asian Studies	-	£89	£98	£98	£106	£111

There is also gradual decline in the value of Indian currency vis-a-vis foreign currencies over the years as depicted in the Table-II.

TABLE-II

Conversion rates of foreign currencies in Indin Rupees

Year	US$	£	DM	DG	FFR	SFR	Yen
1992 (Jan)	27.30	50.70	17.80	15.70	5.20	20.00	21.00
1993 (Feb)	32.70	50.20	20.50	18.30	6.10	22.30	26.50
1994 (Aug)	31.60	48.90	20.20	18.00	5.90	23.90	32.20
1995 (Jan)	31.60	49.30	20.10	18.00	5.90	23.80	31.70
1996 (Jan)	36.00	55.70	25.10	22.00	7.20	30.60	34.60
197 (Jan)	36.10	61.90	23.50	21.0	7.00	27.00	31.80
1997 (May)	36.00	58.80	21.20f	18.80	6.30	24.90	28.80

The budget allocations to libraries, on the other hand, do not register proportionate increase, which in turn results in decline in the numbr of subscribed journals every year. Taking the case of Panjab University Library, the Table III shows increase in the periodicals budget vis-a-vis total budget of the Library and the number of journals subscribed during the corresponding year.

TABLE-III

Financial allocation and the number of journals subscribed each year

Year	Total Budget Provision (Rs)	Subs. for Periodicals (Rs)	No.of Journals subscribed
1987-88	60,93,500	25,00,000	1065
1988-89	66,96,00	27,25,000	914
1989-90	72,50,000	30,25,000	892
1990-91	82,44,600	33,25,000	892
1991-92	98,11,500	39,00,000	726
1992-93	1,06,66,100	45,00,000	429
1993-94	1,28,40,200	49,00,000	606
1994-95	1,31,39,300	56,00,000	605
1995-96	1,48,94,450	63,00,000	602

1996-97	1,59,35,750	68,00,000	602
199798	1,74,68,000	75,00,000	5728

The figures in Table III show that thought the budget for periodicals subscription registered a gradual increase alongwith the total budget of the University, the Library failed to maintain the number of journals it used to subscribe in the year 1987-88. The same situation is more or less prevailing in other university libraries. The developed countries are also facing a similar problem though of less intensity.

RESOURCE SHARING FOR SUSTAINABILITY

Resource sharing is an effort towards cooperation emong libraries to strengthen library services and as a means of cost effectiveness. It can be achieved in a numbre of ways like selection and acquisition of library material, storage, cataloguing and processing of material, and for improving library facilities and services. A group of libraries working together may be called a consortium of libraries, a library network or resource sharing library system. Such a cooperative systm can work with or without a central agency. In a decentralised system, the contact between the libraries is direct.

The pre-requisite for sharing of resources is the willingness of libraries and their parent institutions to cooperate. No library can be self sufficient. The urge for sharing of resources has always existed among libraries. The need for this has been felt all the more since the beginning of this century due to increase in the volume of printed material at an exponential rate. On-line catalogues like OCLC, MARC, Union Catalogues, IFLA's Universal Bibliographic Control Programme, UNESCO's UNISIST programme, international information systems like INIS (International Nuclear Information Service of U.S. Atomic Energy Agency in Vienna), AGRIS (Agricultural Information Services with headquarters at FAO, Rome) and creation of major networks like INTERNET are steps in this direction at the international level.

AREAS OF COOPERATION

One form of resource sharing is the acquisition and selection of reading material particularly research journals. The cooperating libraries can form a centralized acquisition programme. Union catalogues provide a record of the holdings of member libraries. Some core journals can be subscribed by each cooperating library. Rest of the journals can be acquired on a cooperative ba-

sis. Taking the case of Panjab University Library, such cooperation exists with the ICSSR Library housed in the same building regarding purchase of Social Science journals. But the other research libraries in this region like PGI Library, IMTECH Library, CSIO Library which also subscribe to scientific journals, have their own acquisition programmes independent of each other. Resource sharing among these local libraries will be beneficial to researchers of all these institutes.

Technical processing i.e. classification and cataloguing is the other area of cooperation. OCLC is an example of an on-line catalogue representing all the participating libraries. Standardization of cataloguing would be essential i such co-operative programme. MARC or UNESCO's Common Communication Format can be followed for this purpose. For uniformity in subject headings LC list can be used.

Separate storage libraries can be developed to house unused material to help solve the problem of space for shelving.

Providing information sources to member libraries is the most important area of cooperation. These include direct searches to inter-library loan and referrals to other libraries for some piece of information. A member library can request for loan or photocopy to another library for any reading material. Union catalogues, bibliographies and indexes will provide the potential sources to the users. Member libraries may develop current awareness or SDI type system for this purpose.

NETWORKING AND LIBRARY RESOURCE SHARING

The latest developments in information technology and telecommunication techniques have made the task of information handling much easier. Launching of NISSAT during Fifth Five Year Plan was a significant step taken by the Govt. of India for creating a national level information system through linking of major libraries and information centres. UGC launched INFLIBNET programme during 8th Plan to support and encourage sharing of resources among academic libraries in India. The use of new information technology will readily store, process and transfer information. Networking at the local level like DELNET, BONET, CALIBNET, PUNENET are some of the examples showing how the task of resource sharing has been facilitated with the member libraries entering into a computer based network. For an effective and economical resource sharing, there must be means to ensure compatibility of information between various network nodes.

Technology can thus roster the creation of resource sharing networks by offering users an expanded scope of services through their local library

node. The valuable collection of knowledge which the libraries represent can now be stored, manipulated and exchanged between libraries and users in ways which were impractical, if not impossible, before the introduction of new technology.

However, not all libraries are available themselves of the fruits of modern technology. The gap between conventional and often outmoded libraries and modern information systems must be bridged quickly. The challenge to libraries to keep pace with the growing volume of information has already been clearly stated. Many libraries have not met this challenge and many more will also fail unless we can give each library no matter how limited its scope, the opportunity to exploit the information processing potential of the computer and its concomitant technology.

Libraries will have to band together voluntarily to share resources, staff and know how. To facilitate cooperative resource sharing among libraries, the new technology will have to be exploited fully. The librarian will have to be aware of the relevant state of art in information storage, information processing and information transfer. The existing networks have demonstrated significant results. The hierarchy of a source sharing network will thus begin to form : first local, then regional, then state level and eventually national.

In Indian context, the libraries by and large function under different authorities and areas without any cooperation and coordination. There is no draft code of Inter Library Loan followed by libraries. No fruitful efforts are being made to exchange duplicate material.

To make the total book fund of the several universities and colleges go the longest way, the Library Committee Report of the UGC under the Chairmanship of Dr. S.R. Ranganathan published in 1965 has made the following recommendations- (i) Local, regional and national coordination of book selection, subscription to learned periodicals and acquisition of back volumes of periodicals among the several libraries; (ii) Cooperation in the fullest use of the holdings in the several libraries through a scheme of liberal inter-library loan; and (iii) Production and continued maintenance of a union catalogue of learned periodicals.

Thus to accelerate the cooperation, union catalogue of books and journals are to be prepared by each university. Resource sharing activities are to be carried out at local, regional and national level through networking of libraries with the application of latest information technology. Notwithstanding economic, administrative, educational and staffing problems encountered in mechanizing library operations, the libraries will have to go in for automation. For compatability, the libraries will have to evolve certain standards in their routines particularly technical processing.

To sum up, there is no other option than resource sharing in today's context. The library staff working in the libraries is not fully conversant with the information technology because they were trained in library science when information technology was in its infancy. So there is an urgent need to train the staff. There should be free exchange of materials of all kinds as well as information to make the library system sustainable to face the challenge of new information revolution.

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THE CHANGING ROLE OF RESOURCE SHARING IN SPECIAL LIBRARIES FOR SUSTAINABLE LIBRARY AND INFORMATION SERVICES

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INTRODUCTION

Authour is thankful to Sri.K.A. Raju (Director) CORD and Anil Takalkar Doc. Officer for giving opportunity to prepare this paper.

Resource Sharing in special libraries is the common and essential entity for providing sustainable library and information services in the present informatin explosion situation. The revolution in informatin technology makes the resource sharing aspect very easy and practicable. Inter 'library loan' the important traditional aspect for resource sharing gradually improving its scopes into so many other aspects like networking, ttrough telecommunication technology, establishment of digital libraries and application of internet facilties in libraries etc. The information technology is being implemented by so many special libraries slowly for the important motto of utilising their total resources in a sharing basis for reducing their expenditure incurred on duplicate subscribed materials or publications. The special libraries which are subscribing more journals and spending huge amounts are really thinking about information technology aspects like using resource sharing networks by changing their traditional libraries into digital library system. The revolution in launching of internet facility to almost big cities makes the information technology based special libraries very easy to retrieve the information from International databases in a very economical and comfortable procedures.

Establishment of library networks, and application of computer and telecommunication technology in information transfer and retrieval processes are the encouraging aspects for effective resource sharing.The scope of resource sharing has expanded its limitations in the present information age from inter library loan and document supply to sharing of m aterials, functions, services and expertise. The use of computer-technology and telecommunications has proved of tremendous help in this sphere. Library networks linking libraries through computer and teclecommunications are now a common feature. The libraries in India can no longer aford to be exception to the emerging

trend. They are required to move ub the durection by adopting and introducing computerisation and automation in their operations and functions.

The present Communication Technology has innovated so many advances in Library and Information fields. Internet, Digital Library System, C.D.Rom Technology and Library Networking System etc., are some of the latest developments which have come in-to existence for providing sustainable library and information services.

INTERNET

Internet is a network of computer networks in the world, linking more than 36 million people over 200 countries, which opens a global communication around the globe. It can serve as a powerful tool by communicating its commitement to the communities where it operates.

1.1 Internet Library Network Systems

The Internet Library Network System with reference to Indian environment may have the following proposals:

* To establish the core facilities of E-mail for communication among Indian Library Networks and generation of user services.
* To conduct user-education workshops for Indian Library staff
* To constitute expert committees to evolve the standards, compatibility and procedure for information science applications.
* To acquire and install the necessary hardware and software for the access of international databases through Internet.
* To provide and share the information among the experts of Indian and Internet Users community around the world.

1.2 Internet Services for Journals and Newsletters

Another important development is the emergence of electronic journals and newsletters on the computer networks. Many of these are available on various gophers, bulletin boards and anonymous FTP sites. The list of commerical databases is also expanding on the Internet. These databases can be accessed via NISS gateway and other routes also. But to get journals or newsletters and latest information on these databases, we have to send E-mail message to the approapriate publisher.

1.3 ERNET

Education and Research Network in India is connected to Internet via National Centre for Software Technology (NCST), Bombay. This network is cess to various resoruces and services available on the Internet.

1.4 Internet in Indian Libraries

In India internet is operated through VSNL. Presently, VSNL operates in seven major metros-New Delhi, Calcutta, Madras, Banglore, Hyderabad, Pune, and Bombay. The membership and networking rules is controlled by VSNL in India. VSNL has its own lease lines to America, where the Indian network is connected to main internet network. In India more than 180 universities and over 6000 colleges use the library services for their academic and research activities and depend on the resources available in their libraries. Currently the technical, scientific and management institute libraries are functioning in isolation and thre is no mechanism for the dissemination of valuable information available in these institues. Library network system will enable the universities and the higher learning institutes to share and electronically transmit the information resources among them. The information sharing through computer networks and document delivery in the form of electronic media are helpful to the researach scholars and the teaching faculties. Internet, the network of networks in the world referred to as the information superhighway, is growing at a very fast rate of 10 percent every month, connected with more than 500,000 networks, interlinked with approximately 2 million computers (hosts) having about 40 million users. Through the Internet one can access vast reservoir of information like the U.S Library of Congress. The Internet user can also send E-mail to various places, access remote servers and down load data and software from remote hosts. In India till recently internet was accessible to a small group of academic and government users through the Educational and Research Network (ERNET) and National Informatics Network (NICNET). VSNL (Videsh Sanchar Nigam Limited) has opened its flood gates of the Internet in India on August, 1995 for a drastic improvement in the number of Internet users. Internet connectivity will be handy to access the electronic journals, bibliographic and full-text resources and to answer the reference questions, which will help the Internet users in general and the Indian community in particular.

Digital information available on the Internet is expanding very rapidly. Scientific and Industrial Research Network (SIRNET) of INSDOC has been created with the objective to link S&T establishments throughout India. It has its network management centers at Delhi, Bangalore, Calcutta, and Madras. Scientific and educational institutions have already got to the Net through various dedicated networks like ERNET and NICNET. However, Videsh

Sanchar Nigam Ltd. (VSL) has done a great service now by opening its Gateway Internet Access Service (GSIS) to make the Net instantly accessible by providing E-mail, FTP (File Transfer Protocol), and Telnet modes of acanyone who has a computer, a modem and a telephone connection.

DIGITAL LIBRARY SYSTEM

The modern digital library will be a sleek array of computer based information systems. This library will be gauged by the number of access made rather than by the number of titles it holds. Weeding out of outdated information and adding of current information across continents would become a rule than an exception. The modern digital library will be tested for collecting quantitative statistics that will ultimately decide the quality and worth of information that the library possesses.

The stanford Digital Library Project States that the "Integrated digital library will create a shared environment linking everything-personal information collection to collection of conventional libraries to large data collection shared by scientists. Integrated virtual libraries provide an array of new services, uniform access to networked information collection."

As per the Scenario presently conceived by digital library proponents, the basic assumptions underlying such a system are:

* Digital library collection contains fixed, permanent documents.
* Digital libraries are based on digital technology
* Digital libraries are used by individuals working at their terminal

One clear difference between traditional libraries and digital libraries is that digital libraries offer greater opportunity for users to deposit as well as to use information.

A digital library is viewed as an electronic version of a public library. By replacing paper with electronic storage will lead to three major differences: Storage in digital form, direct communication to obtain material and copying from a master version.

The information will be available in digitized format and be accessible on world wide web. There will be a change in the management of copyrights in the electronic world. The introduction of digital libraries will affect the traditional functions of authorship, editing, publication, critical review, book selling, libraries, reader and customers.

2.1 Digital Libraries in India

India has to be in the Information Highway as a sea of information is knocking at its doors. India has the expertise to meet the challenge and to set up digital libraries in the country. We are at the threshold of breaking into Cyberspace and navigate through Internet and World Wide Web. Through Internet it has now become possible to be a part of "Global Village" and exchange information instantly. World Wide Web (WWW) is the most advanced browsing and searching system deployed on Internet based on hypertext paradigm. WWW allows one to explore a seemingly unlimited world wide digital "WEB" of human knowledge. With all these facilities it is possible to access hundreds of databases and make the information available to the user community in the country. Availablity of CD-ROM databases accessible through LAN and WAN is an added advantage.

A developing country such as India has the major barrier of economy in all its developmental activities. The Indian Society is labour intensive and total computerisation and total digitization is hard to find dull acceptability. The libraries a larger number of them are yet to be automated, and their holdings are not available in digitized form. The libraries (even large university libraries) have the problem of low availability of capital, especially, the hard currency foreign exchange. The severe budgetary Constraints forced on libraries may not absorb recurring costs and expenses of international competition in developing skills to cope with digitized libraries and to provide opportunities to implement them and sustain them.

CD-ROM

The first product in evolutionary optical storage of information is CD-ROM. It is a permanent optical based storage device, that in conjection with an associated drive becomes a powerful peripheral for the PC. The CD-ROM puts multimegabyte permanently stored data bases at user front end of a PC. Its only drawback is that the end user cannot put his own information on it.

The advantages of storing data on CD are:

a) high storage capacity (600 MB);
b) no head crash;
c) low error rate, correctable data;
d) long life ;
e) random access;
f) early transportable;
g) PS independent file system;
h) low cost;
i) reliable medium and
J) less shelf space.

The advantage that made CD-ROM practically atractive in today's competing information environment are:

i) Multi-media

The ability to deliver unlimited end users access to over 600 mb information delivered using ordinary post means. It can be used for text, graphics, data, audio and video in one simple purchase.

ii) Multiplatform

It is the first truly system independent media with appropriate SWI CD-ROM allows equal access to information regardless of the computer HW or SW platforms used by the end users.

iii) Multilingual

Sophisticated CD-ROM system today allow the end users to select the operating language at choice and change it on-the-fly.

The technology which will most characterise the 90's is multi-media. Multi-media technology integrates text, images, graphics, video, animation, sound or music. It is interactive on the lines of hypertext and hypermedia. The multimedia has a number of technological barriers for example, extra disk space required to store multimedia formats and broad bandwidth to transmit the text.

3.1 CD-ROMs in Indian Environment

The Indian Science and Technology and Social Science Indexing and Abstracting databases coverages found to be very low in CD-ROM bibliographical databases compared to western countries. Out of 620 periodicals published in sociology, Economics, Library and Information Science and Psychology in India, 489 (78%) of them are in English language. Among these 489 Indian English Periodicals only 45 (9.2%) are covered in International Bilbliographical databases.

So the publishers from Govt as well as private enterprises to ensure promptness in publication of indexing and abstracting services of Indian literature in other western part bibliographical CD-ROM databases effectively.

RESOURCE SHARING THROUGH NETWORKS

Two or more agencies agree to join together for the purpose of satisfying their certain specific requirements is called network. One major objective of resource sharing network is to arrange coordinationin functional activities and Services. This can be acheived by preparing bibliographic databases

on specialized themes that are to be updated at regular intervals for use by specialists. Development of databases related to important subjects and providing of information to those who need it through networks will enhance the resource sharing activities both at regional and national levels.

4.1 Computerized Library Network

Broadly speaking, there are two basic divisions of network: Wide Area Network (WAN) and Local Area Network (LAN). Libraries where application of computer in their operations and services have LAN interconnecting the computer terminals placed in central library and other branch libraries, besides other locations of the parent organisation for retrieval of information of the local machine readable database (catalogue). Where-as, WAN is applicable, for shariang the resources between various organisations computerised databases.

4.2 Library Networks in India

Library networking in Indian Context is still in a preliminary stage. Both library networks and telecommunication facilities in India have not been developed in proper perspectives. Without information network and development of telecommunication in the country, Indian libraries will remain isolated. This situation affects adversely for proper library services. Various organizations specializing different fields in India have taken long range initiatives for the development of networks.

4.3 Information Network Systems in India

Information and Library Network (INFLIBNET) was setup in 1993 by UGC to computerise and network the libraries of the universities and higher education institutes in India. DELNET, BONET, CALIBNET, MALIBNET, HYDLIBNET & BALNET under the auspices of NISSAT were initiated to interconnect the libraries located at Delhi, Bombay, Calcutta, Madras, Hyderabad and Bangalore respectively.

National Informatics Centre (NIC) is playing a catalytic role in ushering in computer consciousness and promoting systematic apporach in data collection, organisation, processing, analysis and accessibility.

The following databases are available with National Informatics Centre Networking system.

GIST General Information to Public
CEN Census Data

ECO Economic Data
IMF Memeber Countries Data
TECH Technology Data
ANAL Analyst S/W

CONCLUSION

The histroy of resource-sharing shows that the libraries of the developed countries adopting resource sharings under system of network have been functioning effectively since 1930. Regional/National/International library and information system network of library, library co-operation, library resource sharing, etc., are the new concepts evolved by the libraries throughout the world. In India except inter-library loan no activities of resource sharing is seen yet. Of course in the field of special libraries in India some network activities both in national and international levels are functioning to dsome extent. DELNET, CALIBNET and INFLIBNET, etc. are some library network systems planned in India which will take many years to start functioning.

One major objective of resource sharing and networking is to arrange coordination in functional activities and services. This can be achieved by preparing bibliographic databases on specialized themes that are to be updated at regular intervals for use by speccialists.

Finally, the extension of necessary facilities to train up the professional manpower in the field of modern information system, extending financial and other supports by the concerned agencies and departments to library and information centres for automatic bibliographical operations, organise a regular basis refresher courses by the government in the field of library science, evolving a scheme by the academic and special libraries for greater co-operation and coordination in mutual lending, and send reference material by the member libraries to the Regional Information Centres at an early time for preparation of digests are the highlighted suggestions to make success of advanced resource sharing in the Indian special libraries.

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TODAYS LIBRARIES : AN INNS OF INFORMATION

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Abstract Advancement of technology has taken place on the threshold of twenty first century and changed scenario of library profession altogether. Introduction of computers has made revolutionary changes in the field. Impact of technology coupled with crucial financial position created new problems before the library professionals.

Number of alternatives were derived and developed by the professionals Sustainable library finance is one of the trend came up during this turmoil.

Application of this alternative in academic libraries by way of giving membership to commercial and industrial units proved to be viable source for making revenue. Present paper presents the case study of Jayakar Library of the University of Pune.

On the threshold of twenty first century, the role of libraries have changed altogether. The chained libraries of the past has widely opened their windows through "Windows". There are numerous windows opened by Information Technology, which is gift of advancement to the present generation.

The concept of Global Village has no more remained dream. It has very well percepted into reality due to advancement of Science and technology. The Information and Information science has acquired tremendous magnetic power to hold the sphere of knowledge. Due to tremendous potential, information acquired the qualities of commodity.

Information as a commodity or Goods displays some peculiar properties; e.g. a sale of information does not deprive the seller of the information sold, which is not the case with a sale of other commodities.

Recently considerable interest has been generated in the field of information and consequently the information economics has paved its way into the activity. This activity comprises of acquisition of information, processing of information, storage of information and retrieval of information.

Benefits of information are unanticipated (Narayana, 1991). Hence the rate and efficiency of diffusion of information is likely to increase the rate of return on investment to research and development. Library and information processing techniques are likely to enhance the possibility of finding more users and buyers.

Donald Urquert has rightly predicated that "Libraries are to be paid for". Once it is accepted that information is a commodity and libraries are the repositories of the information. Then it is worthwhile to charge for the information service provided to the user.

The economics of information Science thus takes concrete shape. Based on this, the new trend of providing service either on, no profit no loss basis or sometimes on commercial basis, got impetus all over. Academic Libraries also did not remain exception to it.

Due to governmental policies, cuts in budgets, rising prices of the documents, inflations and other hazards on way of academic libraries, made them think seriously on the financial front. This culminated into cuts in subscriptions of the magazines, acquiring collection of books and documents of core need and other relevant steps have been taken by most of them.

This gave rise to think eriously for resource sharing, Local Area networks, and other congenial activities, which helped to foster the needs at local level. Here new technology of information science proved to beaboon in the hands of library professionals. Interaction between libraries in local townships and outside also became possible due to computers and various networks. They played a pivotal role in bringing the idea of global village into reality.

This is how advancement of technology and especially in communication technology, played an important role in establishing the new bibliographic control order. The tremendous literature produced by way of writings, research, reports and by similar means, which caused for information explosion, could be brought in control by mechanical means like computers.

Simultaneously another stream of thoughts, also was paving its way to search for other alternatives for erection of revenue. The concept of self-supporting srvices, the academic and technical courses, emerged in the field. This is how the boon developed and delivered by technology, was fruitfully used by information people. The information as commody got recognition in the field of users and providers of information. This idea gave rise to concepts

of "Sustainable Library Finance". The doors of the academic libraries, which were kept open for academic community only, now thrown open to commercial and industrial units in the township or metropolis.

The new vistas of the policies made by the library administrators, helped them to go for new alternative for revenue making. Though not fully at least partially, it helped to support the declining economy of the libraries of present.

The libraries in Pune city did not remain exception to this new change. The city of Pune grew like anything after the flood occurred due to burst of Panshet dam in 1962. Pune which was known earlier as a city of students and pensioners, no more remained restricted to that. The nightmare of flood was ?relinquished by Puneites. It gave rise to new industrial dawn on the horizon of pitiable past.

Now it has become a prominent seat of industry, trade, communication, festivals, sports and what not. Twenty libraries in Pune city came under the banner of PUNENET, in order to cater their needs and by way of resource sharing to fulfill their requirements.

The libraries of the Scientific institutes like, National Chemical Laboratory (NCL), Agharkar Institute, Central Water and Power Research Station (CWPRS) and similar like this, started using and providing information on cost price basis. The libraries of the academic institutes also did not remain exception to it. Among the academic libraries, library of the University of Pune, Jayakar Library, which happens to be an apex body in the academic field in Pune city, also played its nodal role.

It has kept open its services to commercial and industrial units in Pune city and around. Following institutes are the beneficiaries of the services provided by the Jayakar Library, Univrsity of Pune.

i) Ajay Bio-tech (P) Ltd,
Erandawana, Pune - 411027.

ii) Bajaj Auto Ltd,
Akurdi, Pune - 411044.

iii) BE-DELFT Electronics Ltd,
Bhosari, Pune 411026.

iv) Bharat Electronics
D-1 Road, Pashan, Pune - 411045.

v) CHEMET Industries,
Bhosari, Pune 411026.

vi) Computervision R&D (India) Pvt Ltd.
Bombay - Pune Road, Pune - 411005.

vii) H-Fillungre & Company Pvt. Ltd,

Shivajinagar, Pune - 411005.

viii) Kinetic Engineering Ltd,
D-1, Block No. 1812, Chinchwad.
Pune - 411019.

ix) Laval Automation
"Arthbodh", 968/2/-22,
Senapati Bapat Marg, Pune - 411016.

x) Tata Auto Component Systems Ltd.
Beck-Huse, Dample Path, Opposite law College Rd.
Erandawane, Pune - 411004.

xi) TELCO
Pimpri, Pune - 411018.

xii) Ventri Biologicals (Unit of Venkateshwara Hatcheries)
17/6, Milestone, Pune - Panshet Rd.
At Malkhed, Post - Vardadi, Tal. Haveli, Dist. Pune.

Beside this there are number of casual references needed by the number of small and big industrial units. Until now annual fees of Rs. 500 coupled with deposit of Rs. 1000, was charged to the industrial and commercial units.

Now by taking into account the rise in fees in all fields, decision was taken by library committee to raise fees and deposit both, to the industrial units. Accordingly from 1st July 1997, onwards fees and deposit for industrial units has been prescribed as Rs. 2000/- and Rs. 5000/- respectively.

Apart from these "Current Contents" Service is provided to all the affiliated colleges to the University of Pune. They are provided with the content pages of the journal of their need and charged for the service Rs. 300/- for the oneacademic year. As and when the photocopy of the concerned article is asked by the concerned college, it is provided to them, with relevant photocopying charges.

The revenue gathered by this means is indicated with following figures:--

General Fund	1995-96	1996-97	1997-98
i) Library fees	408020	40,0000	46,0000
ii) Library Admission fees	45,000	------	-------
iii) Library Misceleneous	33550	80,000	40,000
iv) Photocopying	80180	100,000	100,000

The figures mentioned are taken from the annual university budget. The fees and income from other services thus forms major part of the general fund.

This is how library and information services provided to the commercial and industrial units, proves to be sustainable financial source to the present libraries.

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USE OF MASS MEDIA AND PUBLIC LIBRARY BY THE RURAL COMMUNITY : A STUDY

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Abstract The present study deals the use patter and extent of utilisatin of mass media particularly newspaper, Radio, Television and Public library by the Rural community. Suggestions are also made for the improvement of public library on the basis of findings.

INTRODUCTION

The technological devices or mass media used to send messages over some distance includes books, pamphlets, magazines, Newspapers, Radio, Television, motion pictures, Video tapes, Computer networks and so on. Along with these public library is also beig considered as one of the mass media. Today mass media which have become an integrl part of the Society, are being e xtensively utilised for obtaining the necessary information relating to the varied needs of the individuals. Since the approaches of mass media in the direction of communication differs from one another, the purposes and the extent of utilistion of these media by their r espective users also differs. Hence it is necessary to study the utilisation of mass media and theri usefulness from the point of view of its users. Also it is essential to ascertain the reasons if any for the under utilisatin of Public library so as to suggest remedies for making public library equally effective and competitive with other media.

OBJECTIVES

The present study was undertaken to assess the utilization of mass

media (Viz. Newpapers, Radio and TElevision) and public library by the people of Singanamane Gram Panchayat area of Shimoga district in Karnataka.

METHODOLOGY AND SURVEY SAMPLE

To obtaina the necessary data for the study the questionnaire method was used. The sample was drawn on the basis of random sampling from the house holds of the selcted areas of singanamane Gram panchayat. The survey was conducted taking the literates as sample.

Total 150 questionnaires were distributed, out of which 140 (90.66%) received. Of the total respondents, 72 (51.43%) of them are male and 68 (48.57%) are female.

RESULTS AND DISCUSSION

MASS MEDIA

Mass media possessed by the study sample have been shown in table-1. Out of the total respondents 33.57% subscribe news papers to their home, 92.14% possess Radio and 79.28% of them are having Television in their home.

LABLE - 1

Mass media possessed

Mass	Male	Female	Total
Media	N=72	N=68	N=140
Newspapers	31	16	47
	(43.05)	(23.53)	(33.57)
Radio	66	63	129
	(91.66)	(92.65)	(92.14)
Television	57	54	111
	(79.16)	(79.14)	(79.28)

- Percentage is more than 100 because of multiple choises.

- Figures in parenthesis indicate percentage

INFORMATION OBTAINED FROM DIFFERENT MEDIA

From the table No. 2 it may be observed that 96.43% of respondents depend on mass media for obtaining information relating to their needs whereas only 13.57% of them obtain required information from library.

TABLE - 2

Information obtained from different media

Channels	Male	Female	Total
	N=72	N=68	N=140
Libray	15	04	19
	(20.83)	(05.88)	(13.57)
Friends	23	04	27
	(31.94)	(05.88)	(19.28)
Neighbours	13	18	31
	(18.05)	(26.47)	(22.14)
Hotels	28	02	30
and shops	(38.88)	(02.94)	(21.43)
Gossip	08	01	09
	(11.11)	(01.47)	(06.42)
Mass media	70	65	135
	(97.22)	(95.59)	(96.43)
NO response	03	02	05
	(04.17)	(02.94)	(03.57)

- Percentage is more than 100 because of multiple choices.

- Figures in Parenthesis indicate percentage.

UTILISATIN OF MASS MEDIA

The opinion of respondents regarding the utilisatin of News papers, Radio and Television have been givin in the following tables.

TABLE - 3
Use of Medias

Media	Yes	No
Newspaper reading	67	73
	(47.86)	(52.14)
Radio listening	137	03
	(97.86)	(02.14)
Television watched	138	02
	(98.57)	(01.43)

Table 3 indicates that out of total, 47.86% of respondents read Newspapers, 97.86% listen the Radio programme and 98.57% watch the Television programme.

5.1 PLACE (S) OF MEDIA UTILISATION

TABLE - 4
Places of media utilisation

Place (s)	Newspaper Reading N=67	Radio Listening N=137	Television Watching N=138
Home	47 (70.15)	129 (94.16)	111 (80.43)
Friends House	13 (19.40)	12 (08.76)	34 (24.64)
Relatives/ Neighbours's House	10 (14.93)	16 (11.68)	44 (31.88)
HOtels/ Shops/ Clubs	18 (26.86)	13 (09.49)	18 (13.04)

	19
Others	(28.36)

- Percentage is more than 100 because of multiple choice

- Figures in parenthesis indicate percentage.

lable - 4 shows that out of 67, majority of respondents (70.15%) read Newpaper at their home. The other places of Newspaper reading which includes public library and offices are 28.36% readers.

Among tha total respondents of Radio listening and Television watching 94.16% and 80.43% of them listen radio and watch television at their home respctively.

5.2 Time spent for utilising medias

The respondents were asked to indicate the average time. They normally devote in a day for reading Newspaper, listening Radio programme and watching Television programme and their responses are given in table 5

Teble 5 - Time spent for utilising medias

Time	Newspaper reading N=67	Radio listening N=137	Television watching N=138
Less than 30 minutes	28 (41.79)	46 (33.58)	11 (07.97)
30 minutes to 1 hour	31 (46.27)	49 (35.76)	34 (25.36)
1 - 2 hours	07 (10.44)	32 (23.36)	40 (28.98)
More than 2 hours	01 (01.49)	10 (07.29)	52 (37.68)

- Figures in parentheses indicate prcentage.

Table - 5 reveals that majority of the respondents (46.27%) spend 30 minutes to 1 hour for reading Newspapers.

It is also observed from the above table that out of 137, Radio listeners 35.76% spend 30 minutes to one hour per day for listening Radio programme. But compare to these two medias. Out of 138.68% of respondents indicate that they spend more than 2 hours per day for watching Television programme.

5.3 Language Preference

The study reveals that most of the respondents prefer the regional language i.e. Kannada; News paper (91.04%), Radio programme (99.27%) and Television programme (100%).

5.4 Extent of Usefulness

Table - 6 shows the usefulness of Newspapers in meeting the needs, tasetes and interestes of the readers and also indicates the degree of extent of usefulness of Radio and Television programme.

Table 6 - Usefulness of medias

Response	Newspapers N=140	Radio Programme N=140	Television Programme N=140
Much useful	50	76	68
	(35.71)	(54.29)	(48.57)
Moderately useful	32	52	59
	(22.86)	(37.14)	(42.14)
Les useful	13	-	02
	(09.28)	-	(01.43)
No response	45	12	11
	(32.14)	(08.57)	(07.86)

- Figures in parentheses indicate percentage

It can be seen from the above table that out of total majority of the

respondents have opined that the Newspapers (35.71%), Radio programmes (54.29%) and Television programmes (48.57%) are much useful. NO one has has said that Radio programmes are Less useful.

PUBLIC LIBRARY

A public library wihch do possess several characteristic features similar to that of mass media has been considered as one such mass media.

In this study the efectivencess of Singanamane Grama panchayat public library in the view of villiagers and the extent of its utilisation by them has been assessed.

Of the total 140 respondents 73.57% feel the need of public library and 82.69% visit the public library for reading news papers and magazines. 44.23% respondents indicate that they visit library daily and 36.54% of them spent less than 30 minutes for reading in the library.

Out of the total respondents, 24.29% have opined that library collection is adequate whereas 69.29% are of negative opinion abouat it and 6.42% have not opined.

6.1 Usefulness of public library

Usefulness of public library which mainly depends on its colection and services. The study reveals that out of 140 respondents 15.71% have opined that public library is much useful, followed by 39.28% respondents who indicated moderately useful and 22.14% Less useful. 22.86% of responded.

6.2 Opinion about public library:

It is reveals from the study that out of total resopndents, 53.57% have said that library hours is not suitable, and the present library hours is not sufficient (60%). Ig is also indicates that the location of the library is not convenient (58.57%).

SUGGESTIONS AND CONCLUSION

Based on the findings, the following suggestions are made.

1. Awareness should be created among the public about the importance or public library through user education programme.
2. In order to optimise the utilisatin of public library, library collection

should be improved both qualitatively and quantitatively.

3. To attract the public towards the public library films and picture shows should be arranged and a T.V. Set has to be installed in the public library.
4. Minimum facilities and services should be provided to change the negative opinion of the public about the library.

To conclude, if the government body of public library takes proper initiatives to attract more bumber of users, certainly public library stand as equally competitive as the other media.

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