REVIEW ON DIGITAL LIBRARIES IN REFERENCE TO SCHOOL EDUCATION

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INTRODUCTION

India has been the cradle of knowledge for thousands of years. Today there is a felt need to preserve and propagate indigenous knowledge and culture alongside the acceptance of universal knowledge through globalization in this age of technological developments. The IT oriented environment has brought in opportunities of a revolutionary nature in archiving and accessing knowledge in the digitized form which were known to exist in conventional libraries mainly in the print form. India has undertaken many initiatives to digitize its documented knowledge base and set up digital libraries for better access to its diverse clientele. However, these initiatives are seen to be sporadic and projects with one time funding. India needs well planned and policy based digitization efforts to be effective in the present situation of acute digital divide between the urban educated techno savvy minority and the vast majority who are not so fortunate. Only when the fruits of digitization of available information/documents reach the people through digital libraries, information centers and similar agencies can we consider ourselves true beneficiaries of technological advancements.

The concept of “library” was evolved with a basic purpose of preservation of recorded knowledge which eventually helped in prospering culture and for betterment of society. Initial methods of preservation of knowledge in various forms like clay tablets, carving on stone or a metal plate, leather was simple and durable. With invention of paper and subsequent invention of Gutenberg's movable printing press provided another medium to record the knowledge in printed form, which survived for nearly hundred years.

LIBRARY SERVICES IN INTERNET ERA

The diversity of the Indian library scenario is an important aspect for consideration while speaking about a vision for the 3rd millennium, since different library sectors in India are in various stages of development and no single solution or approach will be relevant in the Indian situation. Indian library and information sector can be divided into five major areas: the National Library sector; Academic library sector; the Special and Scientific library sector, Government

library sector; and the Public library sector due to various factors the scientific and special library sector is much more developed and modernized than the other four sectors.

The National Library Sector

The National Library sector in India can be divided into two types of libraries. The first one comprises the National Library, Calcutta and the recipient Public libraries under the Delivery of Books Act i.e., Delhi Public Library (DPL), Connemara Public Library, Chennai and the State Central Library, Mumbai. These are the depositories of the printed cultural heritage of India under the Delivery of Books Act. The depository libraries are a very important part of the National Library sector because India is a very vast and multi-lingual country with rich linguisticheritage. The 3rd millennium will have to see the cooperation between all these four librarieswith the National Library at the apex. This can only be implemented if all these libraries are modernized at the same scale and have compatible systems to ensure resource sharing and networking. As these are financed by the Department of Culture (DoC) of the Government of India (GoI), the standards for modernization laid down by the DoC will be applicable to all these libraries. The other part comprises the National level subject specific libraries such as National Science Library, National Medical Library, etc. In both these parts the National Library stands out as the largest single library which acts as the depository as well as the repository of all published material of India. The 20th century saw the development of all these national level libraries in isolation. The main challenge in the 3rd millennium in the national library sector would be to bring about close coordination between all these national level subject libraries and the National Library of India.

Academic Library Sector

The Academic library sector comprises school and college and the university libraries. While evolving a vision for university libraries for the millennium, the main focus should be on the role of the existing university library in addressing the national issues. Since most university libraries in India work in isolation some information need to be collected and collated before preparing such a perspective plan.

1. Data regarding the actual functioning of the library, its collection, user approach, library facilities, IT application status, library manpower status, etc.
2. A national agency may be identified for undertaking this work.

A major aspect of the new millennium will be cooperation at all levels starting from the local to the global level. Cooperation is a pre-requisite for all types of networking for resource sharing. Therefore, the following must be ensured before preparing the plan for linkages between university libraries.

1. Institutional commitment to accept the given measures.
2. Fund and support resource sharing solution.

3. Attitudinal changes in library staff to undertake additional responsibility in resource sharing environment.

4. Training of library staff to understand and appreciate the changed situation.

If these pre-requisites are made available the university libraries could plan for resource sharing programmes, apprenticeship in libraries for learning new skills and IT training programmes, consultancy in retro-conversion and in developing IT infrastructure. All these put together will be the basis of preparing a perspective plan and evolve a vision for university libraries in the country.

School and College Libraries

Excepting very high brow private schools, most schools in India do not have a library per se in the present situation. This area of librarianship is very neglected and needs immediate and continuous attention. As regards college libraries, most colleges have libraries but other than very well known colleges in each state, the ordinary colleges do not run libraries of any consequence. Therefore, India faces the challenges of actually preparing a perspective plan from scratch i.e., from collection development to networking through IT solutions, and will need a complete blueprint to develop these two types of libraries during the coming centuries. India has set up the Information and Library Network (INFLIBNET) under the University Grants Commission (UGC) as the inter-university agency on library modernization to take the initiative and address the issues required to implement the perspective plan for the Academic sector. Each university and its affiliated college libraries also should be part of the overall scheme of development.

Distance Education

India has developed a well organized distance learning system through the Indira Gandhi National Open University (IGNOU) to achieve a high percentage of educated citizens as a prelude to an ultimate knowledge based society. The diversity and geographical distance of Indianeed a strong, well-planned distance learning system for all citizens of the country. To make distance learning worthwhile the information base of the library sector will be equally responsible to be able to cater to the information need of Indians different societal levels. IGNOU has started some unique services for students with the help of IT but unless the rich collection of reading material available in different libraries in India are accessible to theyounger generation the aim of distance learning gets nullified. Therefore, the academic sectorhas to be so inter-connected that it will also cater to distance learners.

DIGITAL LIBRARIES

The term „Digital Library" is of recent origin which has different meaning for different people. Although, such libraries are in existence for the last 2-3 decades, but, in India, the

concept is in its infancy. Therefore, a standard definition for digital library is yet to emerge. For some, it refers to a library having digital collection only, whereas for others it is a combination of digital as well as traditional collection. Some consider it to be an extension of conventional libraries or electronic version which provides collection and / or services in digital (binary) form. But one thing is clear that digital libraries have emerged as a result of fast technological developments to fulfill the changing needs of the users in this technological environment.Content creation, preservation, search, access and delivery are the essential components ofdigital libraries.

These libraries have integrated various technologies, like hardware, software, network, imaging, web, optical character recognition (OCR), library techniques and other developing technologies for information transfer and dissemination. Digitization is making it possible to use compound sources of recorded knowledge which include hypertexts (finding aids embedded in the text), mixed text and image documents, and multimedia documents. Key feature of a digital library is to provide seamless access to geographically distributed digital information to its geographically scattered users. Digital information can be accessed simultaneously by many users at a low cost (Marchionini and Maurer, 1995, p.68). Thus, unlike conventional libraries, there is no limitation about the number of copies, as it can provide access to a document to unlimited number of users just at the touch of a button.

The examples of digital libraries included Project Gutenberg, the US Library of Congress National Digital Library Program and so on. Digital libraries are most discussed among all these types of libraries. Due to their world over recognition and popularity, International Conference on Digital Libraries (ICDL) has become an annual feature. The latest International Conference on Digital Libraries (ICDL) was held in India (Delhi) in 2004.

USE OF INTERNET IN LIBRARIES

The Internet has become such an integral part of our lives, with such powerful capabilities, that it is easy to forget that this technological marvel was created by the long, hard, dedicated efforts of human beings -- folks who had a vision of what universal networking could become and worked to make it happen. The key people, projects, and organizations that helped create the Internet are described below, first in a top-level summary and then in sections in roughly chronological order.

The Internet is a fine source for professional research or for class use of cost-free quality articles, news items, opinion pieces, statistics, official documents, reports, scholarly papers, public opinion surveys, and maps. There are, for example, several online sources of full-text treaties in the areas of war, peace, and arms control (Mattison, 2003). Beyond those raw materials, the interactive and data-manipulation potentials of the Internet allow the design of web-based assignments that both require accurate student use of concepts in the subject matter

and develop insights into wise use of quality Internet resources for serious analysis. Such evaluated material can be used for courses while observing sound principles of undergraduate education (Warkentin, 1999; Ritter and Lemke, 2000; Lee, 2003). To use such sites effectively, faculty must first familiarize themselves with good practices of critical Internet use and then promote those practices in their students by example and mentoring. The ideal would be to go beyond gathering of sheer „„information"" to student construction of knowledge and habits of critical thinking and sound analysis in connecting course concepts with the outside world. For instance, to illustrate more concretely the concepts of (neo) realism and (neo)idealism in international relations theory, websites of NGOs or think tanks espousing those analytical approaches can be examined, compared, and contrasted regarding their interpretations of the same issue and the policy responses that they advocate.

Most of the top-selling international relations textbooks now feature a companion online site with interactive teaching and learning resources, chapter by chapter, including suggested Internet sources on that site and in the text. Publishers are offering various types of online products as supplements for course topics, sometimes independent of the particular text used,and as course packs. The information culture is changing rapidly, regarding inputs, use, and access. Yet, somewhat as was the case when teachers of mathematics in the mid-1970s resisted the use of hand calculators by students, professors are rather suspicious and slow to accept the Internet as a valid and rich source of information and analysis in international affairs courses. Professors lament the dwindling of the traditional socializing library culture and the advisoryrole of the professional librarian. They have concerns about research paper mills and temptations for cut-and-paste plagiarism. They sense that students are „„overusing"" net sources because theyare so convenient and attractive, even though quality issues may receive insufficient attention and alternative sources may not be considered (Graham and Metaxas, 2003; Barberio, 2004). Student use of Internet and other electronic sources is on a clear growth curve, but student Internet guides (Frazier, 2002) may not be seeing corresponding use.

ROLE OF DIGITAL LIBRARIES IN E-LEARNING

Digital libraries are set of electronic resources and associated technical capabilities of creating, storing, searching and dissemination of information. Digital libraries are playing a vital role in online learning education system. Most of the digital libraries are dedicated to supporting higher education and research and they justify their investment in digital development as a powerful means of realizing the larger institutional goals of the academic community they serve. One reason for using digital libraries in E-learning is that it can store and manage large amounts of digital content such as full text, course materials, bibliographic databases, library catalogues, image and audio clips etc. Thus it provides an environment to bring together collections, services and people in support of the full life cycle of creation, dissemination and preservation of data, information and knowledge. Another reason to use digital libraries is that using various

electronic tools, learners can search text materials and images easily and quickly, which can be applied broadly across all kinds of institutions. Advance intercommunication technology, sophisticated search engines, and affordable cost, large storage of digital content are the other reasons to implement a digital library in modern education. Other advantages of digital libraries in E-learning are:

⇒ The library would allow learner to use electronic resources from anywhere, without even knowing where it is stored geographically.

⇒ One copy of the documents could be viewed by any number of users simultaneously.

⇒ It can be used for increasing course delivery for a large number of clients at a particular point of time.

⇒ Study materials need never go out of print, and new editions can easily be created. One can carry several titles at once on a portable reader and, over time, build a personal library.

⇒ It would be easy for non-specialist to use due to the simplicity of operation.

⇒ Links to publisher‟s sites for full text journals.

⇒ It provides and facilitate online and on demand enrolment, study and examinations.

⇒ Search result will be delivered to an e-mail box to the user‟s choice.

⇒ Protecting rare books that are rapidly deteriorating due to over use and poor storage conditions.

⇒ It is cost-effective and cost-efficient for its ability of reuse

DIGITAL RIGHTS MANAGEMENT

Given the vulnerability of materials accessible over the public access networks like the Internet, issues of IPR of material over the digital domain has become a serious concern. Digital Rights Management involves ways in which the digital library operators manage issues of IPR, those of ownership of material made available on the digital library, how one controls access to as well as dissemination of copyrighted material. Several methods of managing digital rights do exist nowadays from which one could choose to adopt the more convenient one for their purposes. Examples include, (i) charging a fee for the use of materialas part of a copyright fee if that is mandatory, (ii) act as a middleman for other libraries so as not to get involved in these issues and to let the source organization deal with its IPR. For example, the TIFR online catalog provides access to the ACM Digital Library, Springer- Verlag list of publications and IEEE subscriptions. The NIT Calicut Digital Library – Nalanda also acts as an intermediary in providing access to standard international publications and journals (iii) holding restricted access to resources using user authentification method for those paid/registered users. This can be enabled using magnetic swipe cards, biometric methods or simple online security software that pops a

username/password dialog box (iv) withholding original material and sending photocopies to the addresses. Of course, this works only at a local level and also for only an automated library that provides access to its catalog online and allows requests for materials to be sent.
(v) using logos, logotypes as watermarks to protect source ownership of the materials.

NEED OF A DIGITIZED NATIONAL LIBRARY SYSTEM

In the situations mentioned above, it may be observed that isolated efforts are being taken by government at the centre and different states. Besides autonomous agencies, non- governmental organizations, corporate agencies, even a few international agencies are also collaborating in some cases for providing access to information, but for providing access to information in every corner of the country and reaching out to the people up to the grass root levels, a coherent effort at a national level has to take place. There is an urge on the part of libraries to provide accessibility to information to all in an organised way. Therefore, it envisagesa strong strategy and systematic approach at the national level. National Library of India can playa leadership role in this, but it cannot suffice alone, reaching out to the people up to the grassroot levels, a coherent effort at a national level has to take place for accessibility and effective utilization of available information by all. There are mainly four sectors in Indian library scene. These are as below:

⇒ The National Library sector includes the National Library and other national level libraries and national subject libraries.

⇒ The Public library sector comprises public libraries at the National, State and local/rural levels.

⇒ The Academic library sector consists of the University, College, School libraries.

⇒ Special library sector includes not only research libraries but also the government and NGO libraries at all levels.

The National library has to set up linkages with the already created automated systems in a decentralized manner. To bring about standardization of infrastructural development, procedures of automation and networking, bibliographic formats on database creation will haveto be a cooperative venture at the national level. All national level institutions must be brought together to decide on the possibility of cooperative support to set up a digitized National Library System in the accurate sense.

Due to huge financial involvement and multiplicity of authorities only a decentralized approach through technological advances can be a viable method. While planning such a system, following major responsibilities may be kept in mind:

⇒ Selection of already developed automated systems and organizations.

⇒ Streamlining of services and standards for the selected systems and organizations in a decentralized manner.

⇒ To Plan optimum utilization of existing resources in the major LIS sectors and avoids duplication of efforts.

⇒ Organising need-based awareness and training programmes at the national level to facilitate most effective use of information.

⇒ Setting up the linkage with international organizations and major national library systems of the world to open up cooperative ventures in the field.

In fact, it is high time to set up workable digitized National Library System for accessibility and effective utilization of information by all in our country. . All national level institutions must be brought together to decide on the possibility of cooperative support to digitize the National Library System in the accurate sense. It may be undertaken as a part of Information and Education Policies of the Government of India. Latest developments in the IT sector especially digital libraries can ensure to achieve the aim.

BARRIERS TO DIGITAL OPPORTUNITY IN INDIA

While undertaking digitization activities the Information and technical professionals have to face multiple problems and barriers in the Indian context:

⇒ Lack of policy framework at the national level.

⇒ Technological problem of obsolescence in terms of software and hardware and difficulty in upgrading the same as a recurring need.

⇒ Non-availability of cost beneficial new technological advancement.

⇒ Lack of multiple Indian language OCR facilities.

⇒ Non-standard technical activities, data description and transmissioncharacteristics.

⇒ Non-availability of well-trained personnel with necessary skills to fully participate in the new environment.

⇒ Lack of proper preservation policy to sustain digitization efforts and digital libraries.

⇒ No IPR policy for content development of digital information for research and decision making purposes.

⇒ No well thought out views on the various aspects of sustainability and long-term availability of digitized material.

⇒ All these factors affect the success or failure of digitization initiatives and the creation of digital libraries. These problems have to be realistically tackled to ensure planned digital resource development programmes and digital libraries to contribute to the common goal of India‟s holistic socio-economic development. Therefore, the following three major issues haveto be addressed in this context:

⇒ National level policy formulation for Digitization and creation of Digital libraries.

⇒ Address the sustainability issues for long term access and preservation of digital resources.

⇒ Ensure access to Indian information at all levels to eliminate the Digital Divide in the country.

CONCLUSION

The diversity of the Indian library scenario is an important aspect for consideration while speaking about a vision for the 3rd millennium, since different library sectors in India are in various stages of development and no single solution or approach will be relevant in the Indian situation. Indian library and information sector can be divided into five major areas: the National Library sector; Academic library sector; the Special and Scientific library sector, Government library sector; and the Public library sector due to various factors the scientific and special librarysector is much more developed and modernized than the other four sectors.

Independently, librarians have developed and applied many knowledge management principles in the provision of academic library services. Reference, cataloging, and other library services are designed to encourage the use of scholarly information and thus increase the amount of academic knowledge used in higher education. Questions in a reference interview and the points of access in a catalog both are intended to reinforce the ways that scholars work to create new academic knowledge. However, libraries have done little to use organizational information to create knowledge that can be used to improve the functionality of library and higher education processes. In many ways, knowledge management incorporates principles that academic librarians have developed and used with scholarly information for many years. It then applies these principles and others to organizational information in ways that create new knowledge to improve organizational effectiveness.

The potential of Digital Libraries is to help grow our economy and can be essential resource for human learning and development. Digital technology can make the works of man or needed information accessible to all whether they live in a village or in an urban area.. Networking of already developed sectors to ultimately set up a digitized National Library Systemmay prove to be a better solution. This can help to move the nation toward realizing theenormously powerful vision of „anytime, anywhere" access to the best of human thought so that no individual is isolated from the knowledge resources. This may be difficult but not a distant vision.

The term electronic library (e-library) refers to a system in which information is stored electronically and made accessible through electronic systems and networks. It provides collection and/or services in e-format using various types of media, such as optical video disc, CD-ROM, online databases, Internet resources, etc. Electronic materials included here would be basically in variety of analog formats. For example, videotapes are in analog format, requiring an

electronic equipment to view. However, digital materials may also be there. The core processes of a library become basically electronic in nature. Thus, one important feature of such libraries is extensive use of electronic media for the storage, retrieval and dissemination of information. Since electronic library encompasses all the materials that can be held by a digital library, it is more inclusive.

Digital technology has raised the hopes and expectations of people to face the challenges of not only bridging the gap between the information rich and the information poor in the country, but also uplifting the level of development in all its different facets. Major responsibilitynow rests on the decision makers, technological experts, librarians, educationists, social workers, legal experts, publishing industry as well as the local institutions to play their respective roles in bringing digital information in need based comprehensible form and language to the diverse clientele of the country. No agency can really work in isolation to reach the expected goal in the right manner. Therefore coordinating agencies may have to be established on a distributed regional basis to understand local requirements and thereby assist policy planners in preparing proper guidelines for useful and sustainable digitization programmes. The available technical infrastructure and the networks in existence may now be utilized while initiatives for more sophisticated technology becomes successful in creating proper infrastructure to deal with the multi-lingual and multi-sectoral information required for the vast majority of Indians. Just as the audiovisual media such as TV and radio have reached every corner of India, digital technology will one day become a household facility in distant parts of the country. Since Indian decision makers have now understood that Information is power and information based decision making has become the order of the day, the Government of India and other agencies are takingnecessary steps to improve the telecommunication and other technical facilities to make IT basedInformation access a reality in the true sense so that there can be substantial improvement in the quality of life of every Indian.

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