LIBRARY AS A GLOBAL INFORMATION HUB : PERSPECTIVE AND CHALLENGES

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Abtract

The paper enlightens how libraries are transforming into global information hub. The paper discusses impact of digital revolution and ICT on information society. It also emphasizes on changing scenario in the libraries where providing standard and quality services to the end user is the deriving force. The digital divide is also getting shorten with the modern libraries and giving way to information super highways. The future role of libraries is discussed with reference to new challenges, opportunities and vision to develop web enabled library system.

Keywords : Digital Library, Virtual Library, Digital Divide, Information Hub

1. Introduction

As early as 1980, Futurist Alvin Toffler identified three "waves" of civilization. The First Wave was launched by the agricultural revolution and the Second Wave was driven by the industrial revolution. The Third Wave is creating a new civilization in our midst with its own jobs, life-styles, work ethic, concepts of life, economic structures, and political mindsets. Via advanced telecommunications, the Third Wave is creating a global society highly dependent on information creation and transfer. This Information Revolution is having an even greater impact on the world than did the First and Second Waves.

Computer and communication networks now encircle the globe. Despite the oft-repeated claim that half the world's population has never made a telephone call, one can receive daily television, radio, and newspaper reports filed via satellite from anywhere in the world. Many of these reports become available almost instantly through the Internet. An increasing proportion of communication and commerce takes place via computer networks. Friends, family, colleagues, and strangers rely on e-mail to maintain relationships and to transact business. Most of the activities of writing, editing, and publishing involve computers and networks regardless of whether the final product appears online or on paper, making "electronic publishing" a misnomer.

Libraries are one of many institutions that could no longer function without computer networks. Libraries depend upon computer networks as a means to provide access to local and remote information resources. While physical materials continue to form the core of most library collections, fewer and fewer services require that users physically enter the library building. Even artifacts such as books can be ordered online for delivery to one's home or office.

2. Digital Revolution

The rapid growth of Information and Communication Technologies and innovation in digital systems represent a revolution that has fundamentally changed the way people think, behave, communicate, work and earn their livelihood. This so-called digital revolution has forged new ways to create knowledge, educate people and disseminate information. It has restructured the way the world conducts economic and business practices, runs governments and engages politically. It has provided for the speedy delivery of humanitarian aid and healthcare, and a new vision for environmental protection. It has even created new avenues for entertainment and leisure. As access to information and knowledge is must to improve living standards for millions of people around the world.

3. Information Society

The digital revolution in Information and Communication Technologies (ICTs) has created the platform for a free flow of information, ideas and knowledge across the globe. This revolution has made a profound impression on the way the world functions. The Internet has become an important global resource, a resource that is critical to both the developed world as a business and social tool and the developing world as a passport to equitable participation, as well as economic, social and educational development. The role of ICT is to ensure that these benefits are accessible to all while promoting specific advantages in areas such as e-strategies, e-commerce, e-governance, e-health, education, literacy, cultural diversity, gender equality, sustainable development and environmental protection. At World   Submiti on Information Society Geneva in December 2003, the participants adopted the Declaration of Principles, entitled "Building an Information Society: a global challenge in the new Millennium", in which they declared their common desire and commitment to build a people-centred, inclusive and development-oriented Information Society, where everyone could create, access, utilize and share information and knowledge, enabling individuals, communities and peoples to achieve their full potential in promoting their sustainable development and improving their quality of life, premised on the purposes and principles of the Charter of the United Nations and respecting fully and upholding the Universal Declaration of Human Rights. The challenge was to harness the potential of information and communication technologies (ICTs) to promote the development goals of the Millennium Declaration.

The participants reaffirmed as an essential foundation of the Information Society, and as outlined in article 19 of the Universal Declaration of Human Rights, that everyone had the right to freedom of opinion and expression; that this right included freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers. They further reaffirmed their commitment to the provisions of article 29 of the Universal Declaration of

Human Rights, that everyone had duties to the community in which alone the free and full development of their personality was possible, and that, in the exercise of their rights and freedoms, everyone should be subject only to such limitations as were determined by law solely for the purpose of securing due recognition and respect for the rights and freedoms of others and of meeting the just requirements of morality, public order and the general welfare in a democratic society. We speak not just for libraries and information services but for the two and a half billion people who use them, the people of civil society. For their sake, we ask governments and the global community to find ways of resorting the program of action with a **sense of urgency** and in **partnership with all stakeholders**. The people of the world need vigorous action now, not in a decade, because a child entering school today will likely have finished in a decade. In a world suffering from HIV/AIDS, conflict, natural calamities, gender discrimination and other causes of marginalisation, we need urgent and concerted action if we are to promote a truly inclusive and mutually beneficial global information society.

Libraries, archives and information services provide access points to the Internet for members of communities and also the support and skills development, which are essential to effective use. They not only maintain our cultural heritage but also the records, which are essential to effective government and to continuing economic development. Through such means they build capacity in communities and nations and help to redress disadvantage. Librarians advocates a global information commons through which all people will be enabled to seek and impart information. Its realisation requires, at a minimum, ubiquitous access to sufficient affordable bandwidth, up to date and affordable ICTs, unrestricted multilingual access to information and skills development programs to enable all to both access information and disseminate their own while respecting the fundamental right of human beings to both access and express information without restriction. This requires investment by governments, international agencies and business entities through the harnessing of **all available infrastructure and resources** in partnership with civil society. A modest investment in the worldwide network of libraries and information services would **build on the existing foundation to**:

- provide an extensive web of internet access points, each supported with advice and training
- offer relevant information in appropriate formats, languages and
- develop literacies and capacity
- support health and education
- advance the position of women
- provide opportunity and choice for children and the benefits of lifelong learning
- promote innovation and economic development
- ensure the preservation and promotion of cultural heritage and diversity
- foster respect and understanding between peoples.

4. Digital Divide

The Digital Divide separates those who are connected to the digital revolution in ICTs and those who have no access to the benefits of the new technologies. This happens across international frontiers as well as within communities where people are separated by economic and knowledge barriers. At WSIS Geneva, world leaders declared "We are fully committed to turning this digital divide into a digital opportunity for all, particularly for those who risk being left behind and being further marginalized." between peoples helps resolve conflicts and attain world peace.

A paradox of the networked world is that as libraries become more embedded in the information infrastructure of universities, communities, governments, corporations, and other entities, the less visible they may become to their users, funders, and policy-makers. Libraries must be integral components of the information infrastructure of their organizations if they are to provide the most effective, efficient, and appropriate services to their user communities. Independence and isolation are not suitable alternatives.

Historically, libraries have played key roles in information-oriented societies. Yet today, some of their roles are being duplicated by other public institutions such as archives and museums and by commercial providers of content and services. Individuals and organizations now have many information sources alternative to those provided by libraries, which would suggest that the role of libraries is shrinking. However, libraries are expanding to include a wider array of services, such as providing digital libraries and support for distance learning. Despite this broader scope, libraries exist in a competitive environment, facing greater demands for services and often with fewer resources to meet those demands.

Libraries can and should play key roles in the emerging global information infrastructure. To do so, they must address a number of complex challenges. These challenges can broadly be divided into four: 1. infrastructure, 2. content and collections, 3. preservation and access, and 4. institutional boundaries.

5. Information Services Provided by Libraries

All libraries provide information services. National libraries offer bibliographic information, University libraries do meet information needs of students, faculty Special libraries have distinctive target groups, whose information needs they try to cover.

With the growing number of books and other printed items and the emerging of other media such as microforms, videos, audio-materials, CD-Rom and online-journals, librarians have had to broaden their competencies. They have developed new research abilities and integrated new media into their collections but these systems and software applications are still to be defined and mastered by the librarians. Users need librarians to find their way through the sometimes-labyrinthine libraries.

A conservative librarian might see the ICT and new IT based resources as just one more medium to be integrated into already existing collections. This would be a mistake. The ICT has an increasingly powerful influence on the presentation and use of information and therefore demands for changes the ways information services are managed by librarians. The libraries and information centres have to change direction and diversify in order to adapt to the threats and challenges posed by the ICTs, consumer online, interactive television services and the like - in other words these have to redefine their roles in Information Society.

To look into the future of Libraries and new services to be provided let us draw analogies from other institutions, which may share intersecting and interesting connections with libraries. To provoke thought let us look into banking, once the paragon of conservatism and resistance to change. Remember banker's hours? Twenty years ago banks were remarkably insensitive to client needs. They made it very difficult to deposit money, withdraw cash or make loans. They were open few hours - a few inconvenient hours, which made them nearly impossible for working people to access. What happened? Banks were forced to change by the arrival of new technologies, de-regulation and a marketplace driven by client demands for convenience, quality and customization. Let me ask you, when was the last time you actually walked into a bank to deposit funds or cash a check? A large percentage of banks now offer 24-hour services, which include deposits and withdrawals at countless convenient ATMs. Most employers offer automatic electronic deposits of salarychecks. To find a balance or check an account, one calls an 1600 number and punches in some code numbers or log on to the bank web site. Many people find they have much greater and more convenient access to banking services without setting foot inside a bank itself. The information was relatively scarce during the 1980s, it was "housed - usually in the form of books - in the libraries. The operating paradigm for such libraries was centralization. Researchers and students left their normal places of reading and thinking (homes, workplaces and classrooms) long enough to "withdraw" information - usually in the form of notes or photocopies- that could be consumed elsewhere. Access was relatively limited for some of the same reasons that bankers' hours caused difficulties.

6. New Challenges

Information has become a business. A lot of money has been invested in the expansion of the Internet, multimedia, development and electronic publishing. Libraries have to compete and sometimes fight for budgets. They seek to do business on new terms with database vendors, electronic publishers and commercial service providers. The new copyright laws could have severe consequences for library activities. Libraries are no longer setting the rules of information storage and retrieval. They are only one stakeholder in a large field. Let us see the challenges being faced by the librarians?

- Change of information needs: The users need more precise current and factual information and they need it fast.

- Change of information habits: The users especially the younger users are more comfortable with digital resources than printed bibliographies or traditional Publication..

- Openness: The 'library without walls' is not just a term. Via Open Public Access Catalogue and homepages, libraries become more visible and accessible than ever before.

- Networking: It is no longer important what a library has in stock, but ever more important to what sources a library can provide access.

About ten years ago, libraries had a collection 'Just in Case': Should someone ask for a certain subject, there would be a stock of carefully chosen books, bibliographies and other materials readily available. Five years ago, libraries began to work 'Just in Time': Since then, upon request, the best and most up-to-date materials are gathered to answer the demand. Today, we are heading towards service 'Just for You': Knowing the customer and his or her information needs, librarians will provide tailor-made services. Let me go back little into the history of impact of IT or Library Services. It was till 80s and early 90s we were busy in automating the work, which was earlier being done manually i.e. acquisition, processing, circulation, periodicals management, CAS, SDI, Bibliography preparation, indexing, etc. It was during 90s with PC revolution, development of high speed LAN, growth of Internet and Internet based Services the professionals started thinking of news Services. Let us see how Libraries have progressed over the years.

80s	90s	2000
• Print	CD Rom	Web based
• Library Catalogue	OPAC	Web

• Manual indexing, Bibliographies	Index based databases	Full text databases
• Closed Access	Open Access	24x7x365 access from Anywhere
• Reference Desk	Telephonic, fax based Reference Service	On-line Reference Service
• Inter Library loan	Document Delivery Services	Electronic Delivery
• Manual sharing of resources	Cooperation movement	Dedicated Library networks
• Paper based collection	Hybrid collection	Digital/Virtual Library

The libraries have moved from :

• Acquisition	to	Access
• Library Centered	to	Patron Centered
• Monomedia	to	Multimedia
• Fixed Library hours	to	24/ 7/365
• Reference Service	to	Virtual Reference
• Library maps	to	Virtual Library Tours
• Photocopying Service	to	Electronic Document Delivery

7. Quality of Service

The international norm ISO 8402 defines: "Quality is the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied need." A proverb says: beauty is in the eye of the beholder. Quality of information services is equal to the perception of quality by the customer. Therefore, librarians have to know the customers and their information needs.

To ensure good quality information services, the library must establish and clearly communicate quality standards. These standards include the accuracy and reliability of the information and some of these should be measurable, such as how long it takes to deliver a document, or how many

demands for information could be answered within the same day. Benchmarking is also important to ensure quality and the Internet provides abundant material for benchmarking. The key to the evaluation of quality is the direct feedback of the customers. The Internet helps to establish and maintain a relationship with the customer. A survey is much easier to conduct via email than by printed questionnaire. The number of pageviews on websites is a direct indication of the quality of the site. Advanced software allows one to track the visitor's path through a complex website thus enabling the librarian to see the document through the customer's eyes.

8. Innovation Agendas and e-Research Initiatives

Very few individuals can afford to buy all the print-based information they need during their lifetime. The answer to this problem, developed over the years in most countries, is the library; be it a public library serving the local community, or school, college and university libraries to serve communities of teachers and learners, or national and research libraries to support research, or corporate libraries to support enterprise. In the same way, even those who can afford the hardware and software, together with the telecommunications charges (and many cannot and will not be able to for the foreseeable future), will need access to expensive electronic publications that can be afforded only on a collective basis. The library is the key agency in providing an answer to this problem. The library has the additional advantage that it can also provide an environment where the necessary searching and interpretative skills can be acquired and developed. We believe, therefore, that the potential role of the library in helping achieve the aspiration of the information society should be given greater emphasis in the draft documents. Many nations are promoting innovation agendas and eResearch or eScience because they are seen to be crucial avenues to arriving at sophisticated knowledge economies which promise prosperity to their citizens. A number of national programs shift economic emphasis from extractive industries, agricultural production and manufacturing to the knowledge that can offer better returns from those traditional activities and open the door to new activities. These opportunities were recognised in the WSIS Declaration when it stated that research and development, technology transfer, manufacturing and utilisation of ICT products and services are crucial for promoting capacity building and global participation in the Information Society. This is especially important for developing countries and those with economies in transition. Some nations are, naturally, better positioned than others because of their historical advantages but even they realise the need to build capacity.

Through this emphasis, libraries and information services now face a new frontier and new opportunities to be in the forefront of strengthening and extending the scholarly information infrastructure in partnership with the academy. The new priorities mean that the scope of that infrastructure extends beyond the domains traditionally supported by academic and research libraries

and their accepted boundaries. Its development depends increasingly on fostering effective partnerships among libraries, with the academy and with other players.

Such opportunities do not need to be exclusively technology driven but they are certainly going to be technology enabled. Examples extend from joint services such as online reference and collaborative lending to consortial acquisition of content, digital theses and repository initiatives. While in some disciplines, research 'among the stacks' in the library remains essential, for many the library is with the researchers wherever they may be. Its ubiquity is such that some fear that the library may become invisible as our hard-won services merge into the global digital landscape in which students do what students have always done and take the easiest path when they turn to Google for a quick information hit. There is an issue here but it is not a matter of our becoming irrelevant but rather a need for clear branding, for representing ourselves as the 'shining path' which will return the best results for the least effort as students desire.

9. New Opportunities

However, all of these initiatives are doing what we have been doing better. There are other areas which we have largely ignored in recent decades. The new technologies give us good opportunities to enhance research and scholarship by returning to some of our roots in value adding, to revisit some of the activities, which we have declined to undertake in the pursuit of efficiency. Our domain has been seen as the place in which descriptions of the fruits of research and scholarship lie in repose ready to be used to support learning and new discoveries. Outside this domain lie other aspects of the 'scholarly information infrastructure', including the informal communications of researchers and scholars and the actual records of research, the research data. Their richness both for the subject of the original inquiry and for the meta-study of research patterns and cultural modes has been neglected. With the resources made available by governments to support eResearch, we now have opportunities to help curate these rich resources.

10. Open Access

As we are all aware, the scholarly publishing syndrome, which came to be called the 'serials crisis', arose from the recognition that scholarly publications could be profitable, even very profitable, not just a way of communicating among scholars. Seemingly never ending annual price increases led to successive waves of cancellations of subscriptions. The transfer to digital publication brought some relief in that many libraries could substantially stabilise the total cost of subscriptions by buying aggregations, often through consortia, but at the cost of reduced selectivity and loss of the capacity to provide extramural access as well as serious concerns about how to fulfill our responsibility

for long term preservation. But the business models adopted by the 'high-toll' publishers were designed to maintain their income streams, indeed to maintain ever-increasing income streams.

Then the open access movement emerged as a possible saviour and has been an extraordinarily successful disturbing innovation. It demands free of charge, freely available, digital access to the scholarly literature. It postulates that this may be achieved by publication in peer reviewed open access journals – the 'golden road' to open access – or by placing copies of articles in institutional or disciplinary repositories.

A key but substantially unremarked additional benefit of the open access movement is that it is exposing scholarly publication from regions of the world which would not previously have been so readily available for the interest and scrutiny of the global scholarly community. It is assisting scholarship to free itself of the neo-colonialist political economy through which only journals published in the traditional centres of publication in Northern Europe and the United States could be regarded as high quality and status. This model reinforced the commercial power of the dominant publishers but also the hegemony of the 'Northern' academy, largely quashing the voices of the 'South'. The open access models are weakening those tendencies by making the locus of publication less important and thereby enabling journals, and the articles they publish, to be evaluated simply on the quality of their content rather than any assumed validation conferred by place or publisher.

These publishing models are all attractive in that they make scholarly information available without charge to the user and in that they are beginning to demonstrate both their economic sustainability and growing acceptability to the global academy. Nevertheless, at this stage they represent only a tiny proportion of the number of scholarly journals in publication. The use of institutional or disciplinary repositories provides an alternative approach through which each article – or a close variant of it – will be available without restriction and without charge across the Internet.

But the realities are more challenging. The first, and perhaps most serious, concern is that this strategy reinforces the scholarly hegemony of the 'North' because it delivers access easily to those with reliable, reasonable bandwidth Internet connections and up to date hardware and software. Those with restricted and unreliable bandwidth or poor infrastructure will find their access limited. Those without Internet services will have no access. On the supply side, it favours those who can easily set up and maintain a repository and discriminates against those who lack the finances, skills or infrastructure to do so. Other concerns include the neglect of many of the good features of the traditional scholarly publishing model. The lack of standards for repositories represents a great freedom but also restricts their utility for discovery. Unlike library catalogues and bibliographic databases, they lack consistent metadata schemas and guidelines. This makes them difficult to

search consistently and certainly in a consortia fashion, especially in a multilingual context. Again, it is likely that this deficiency will act to reinforce Northern scholarly hegemony.

Consequently, Library Community has stated its support for open access. There is a need to set out an agenda for improving access to scholarly information and thereby promoting global equity and development.

11. Internet and Virtual Libraries

Anybody who uses Internet is aware of their shortcomings of searches through search engines: Huge numbers of hits, many of them off-topic or outdated. Some engines established 'home-grown' classification schemes for the WWW, a dubious approach, which leaves these services far behind in covering the net. Today, it can take nine months or more until a new site is registered.

Librarians have expert knowledge to provide answers to the dilemma of too many pages and poor research tools. If we want to make Internet-resources usable for our users,we have to choose, to evaluate and to index the material •ÿ in fact, do what we have always being doing.. The virtual library of the not-so-distant future will provide access to printed matter both in the library's own collection and elsewhere, as electronic publications and WWW links. Information professionals could provide thesauri and guidelines for bibliographical description on the Internet.

Librarians are concerned with the political implications of information, such as freedom of access and the diversity of the Internet. Many people complain about the English language dominating the net. With the growing number of web users outside the Anglo-American world, there is demand for websites in all languages. Librarians can encourage this variety by collecting and providing pages in languages other than English.

12. Success Features

There are many ways to make the Internet useful for library's information service:

- Establishing a homepage having information about the library and the services.
- Providing links to a collection of electronic texts, online databases/ journals and other Internet resources.
- Setting up Institutional Repositories
- Developing Subject Gateways, Library portals.
- Providing information about events like discussions, conferences and seminars.
- Giving information about job-opportunities.

- Electronic Document delivery.
- Library Calender, FAQs, on-line Reference Service
- Communicating with users via email or listservs
- Feed back service

13. Human Resource Development

In most countries librarians are educated in universities in what used to be called *"library schools"* at undergraduate, masters and doctorate level, depending largely on the overall educational tradition in the country or region. This is supplemented by periods of practical training and experience. In some countries this leads to a license to practice. In others, the courses themselves are accredited by the professional body. The curriculum includes studies of information science, computer based information systems, electronic publishing, legal considerations, including intellectual property laws and understanding user needs, as well as the more traditional subjects such as reference sources, cataloguing, indexing and classification. Specialist, optional programmes treat serving user groups such as children, the visually impaired, those with learning disabilities, and specific industries, etc. In India there is an urgent need to sense the courses on a regular intervals to meet with the changing requirements of information handling.

14. Conclusion

In the first euphoria about the potential of the Internet, some people feared (or hoped), that libraries and librarians would no longer be necessary. As we know today, this concern has not materialised. Librarians are even more necessary today as navigators in the ocean of available information. As many surveys show, users trust librarians to help them find the information they need, and many of them take their first steps into the Internet in a public or university library. The Internet, for librarians, is more than merely a tool; it has fundamentally changed the library and opened new horizons for networking. There are fascinating possibilities librarians should explore.

The libraries will continue to play a crucial role as gateways to information resources, including those on the global superhighways." The components linking the studies, underpinning the Information Society movement, are the outputs of the union of information and communication technologies and their rapid diffusion, epitomised by the Internet. It is my view that current trends have the makings of a social revolution, perhaps much more than Industrial Revolution, but very different. The Industrial Revolution was about using mass resources to deliver high returns to a few.

In the near future, libraries will be occupied with a multiplicity of issues similar to those evident today. These issues include: the production of ever-increasing amounts of diverse collections in a variety of print and electronic formats; selecting and purchasing collections with competing demands

and under fiscal constraints; making these and other collections physically and virtually accessible; and preserving existing print and digital collections. While libraries are grappling with these issues, continuous change in the areas of publishing, scholarly communication, and technology will compound the existing problems. This rapid change is a challenge because libraries are required to adapt to it while also being asked to remain the same. How then can libraries still fulfil their mission to serve their users, be they the general public, students, teachers, researchers or professionals.

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A Science graduate with Post Graduation Degree in Library and Information Science and Political Science, Dr. Chadha holds Ph.D. Degree in LIS. He also possesses Diplomas in Journalism, Computer Software Technology and has undergone advance Courses in Management, System Analysis, Programming and Photography. As a keen learner, Dr. Chadha has been regularly attending seminars & conferences in the field of LIS and IT in India and abroad.

Dr. Chadha has to his credit nearly 30 years experience in managing the library and information systems and services of several institutions of national and international repute including British Library-Lucknow, National Institute of Design (NID)-Ahmedabad, ICRISAT- Hyderabad and National Informatics Centre (NIC)-New Delhi. He has been involved with several academic assignments including preparation of course material for LIS Courses being conducted by IGNOU and Kurukshetra University. As a guest faculty he has been associated with IT College, University of Lucknow, Kurukshetra University, IGNOU and Annamalai University. Dr. Chadha has conducted several training programmes in the field of Library Automation in different parts of the country including New Delhi, Shillong, Udaipur, Lucknow, Jaipur, etc. He has contributed more than 50 scholarly papers in journals, conferences, seminars etc. and had been Editor of AGLIS Journal from 1992-94.

Dr. Chadha has been actively contributing in the planning of Library and Information System at national level. He has been associated as a Member of Working Group of Planning Commission on LIS for Ninth Five Year Plan, Member UGC, and Subject Panel on LIS, 1997-2000. He has also been associated as consultant with a number of Libraries for automating their activities. In order to keep himself abreast with the latest developments in the field of LIS, Dr. Chadha has been regularly interacting with professionals of various countries. He had visited a large number of institutions in USA during 1993 and 2002 under International Visitor Exchange Programme of USIS and had been to Belgium, Denmark, France, Germany, Japan, Thailand, The Netherlands, Sweden, Singapore, UK, etc to interact with Professionals and attend International Conferences.