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**IMPACT OF INFORMATION TECHNOLOGY ON
CHANGING SCENARIO OF LIBRARY &
INFORMATION CENTRES IN INDIA**

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Impact of Information Technology on Changing Scenario of Library & Information Centres in India

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Abstract – With the advent of Information and Communication Technology (ICT) there has been a significant impact on Library and Information Centres (LICs) that has further paved way in modernizing them in different ways. The objective of the present paper is to emphasize on the changing scenario of LICs in providing information services, information seeking attitudes of users and the challenging role of Information Professionals in managing information and infrastructure in current digital and networked environment.

INTRODUCTION

Information and Communication play a vital role in the development of a nation. The advent of Information and Communication Technology (ICT) further paved the way for tremendous modernization of Library and Information Centres (LICs). With these developments, libraries are not merely the communication links between the producers and the users of information; they are in between institutions, communities and even countries. With this the nature of information delivery and its consumption is constantly changing. The ability to retrieve, organize and store information from printed or electronic sources will no longer be regarded as the only basic concept of library and information services. Modern information technology provides easy and fast access for almost everyone to use the ever growing amount of stored information in international, national or local databases. In the present scenario, changing societal needs, academic and research requirements, information seeking attitudes of users and impact of technological advancements brought tremendous change in exploring information through different ways. The objective of the present paper is to discuss about the different changes occurring in LICs and their impact in providing different services to users, changing attitudes of users in seeking information and the challenging role of library and information professionals in the current digital environment.

Information is dynamic and unending and when communicated promptly, it has great significance in education, research and development. The human communication has progressed through four phases. The first phase began with the verbal communication with origination of languages, second phase with written communication that enabled recording and

storing of the information. The written communication started with cave paintings, followed by clay tablets, ink, papyrus etc. The third phase, the printing era began with Gutenberg and his Bible in 1456. The fourth phase the age of telecommunications began with Morse's telegraph and was perpetuated by Marconi's wireless. Now we are in fifth phase where communication is playing a major role in interactive communication systems (Kanjilal, U., 1993).

Information Communication Technologies (ICTs)

ICTs are computer related hardware and software that enable to create, collect, consolidate and disseminate information in multimedia formats for various purposes. ICT development have brought the merger of the computing information, communications, entertainment, massmedia industries, for providing a means of exchanging information in digital format.

The German ministry of development and economic cooperation defines ICT as:-

“All those technical instruments and set ups that transform all kinds of information.....through the intelligent linking of hardware, software& transformation nets.”

Another definition of ICT states:-

“They are the computing, communicating facilities and features that variously support teaching ,learning and range of activities in education in various fields”

Components of ICTs

The main components of ICTs are :

- Computers
- Networking
- Internet
- Display screen technologies & peripherals
- Information systems
- Software
- Hardware (cpu, printers, digital camers, audio visual equipments etc..)
- Humanware (refers to skilled personnels).

Impact of ICTs on soceity:

- More efficient national and global infrastructures.
- More efficient access to information and delivery of information
- Increased production and availability of more powerful ICT hardware and
- Software. Increased production and publication of multimedia digital information

Therefore ICT fosters and inovative educational approaches.

In India, numerous initiatives have been started by both public and private organisations. The impoptnace of using ICT for education has been emphasised for over a decade. India's capital city Delhi enjoys the strong ICT infrastructure and talent in the feild of education system. And since 1980's Karnataka has been leading India in It and biotechnology and was the first state to annouce IT policy in 1997.

Emerging Technologies and LICs

The use and impact of ICT is clearly visible in LICs, which is due to the emergence of new technologies and drastic reduction of the cost of hardware and software and their easy availability in the markets with service support from the suppliers or vendors. Due to enormous capacity of data storage, quick processing, access, retrieval and dissemination of information, traditional LICs are quickly transforming into digital libraries (read hybrid libraries). Digital libraries are meant to deal with digital materials, whereas hybrid libraries deal with both printed and digital materials. (Chowdhary, G.G & Chowdhary, S, 2004). The networked infrastructure offered by Internet with wide coverage and geographical distribution along with the omnipresence of WWW has brought drastic

technology induced paradigm shift in LICs from traditional libraries to digital libraries, print on paper to digital information, card catalogs to Web OPACs, chains to RFID tags, print journals to online or electronic journals, ownership to access, in library access to remote and desktop access. Information availability from libraries changed from traditional time of 9 – 5 or 7 to 24X7, photocopies to digital copies, the document delivery services are being provided through E-mail instead of post or fax. Gradually the libraries are evolving into information networks than standalone libraries by forming networks and sharing resources and slowly converting from real to virtual communities.

Impact of Library 2.0

When Tim Berners-Lee created Web in 1989, it is the implementation of the Web 1.0 that is considered as “read only Web”. Currently we are at infancy stage of Web 2.0, which makes use of the latest technologies and concepts in order to make the user experience more interactive, useful and inter connecting. Library 2.0 is the implication of Web 2.0. According to Wikipedia, “with Library 2.0 library services are constantly updated and reevaluated to best serve library users. It also attempts to harness the library user in the design and implementation of library services by encouraging feedback and participation”(en.wikipedia.org/wiki/Library_2.0). Library 2.0 is the application of interactive, collaborative and multimedia web based technologies to web based library services and collection” (Maness, 2006). With the above definitions it is evident that the basic idea of Library 2.0 is to transform library service by making them more personalize, more interactive, collaborative, more web-based, driven by community needs.

Library 2.0 uses varieties of technologies offered by Web 2.0. In recent days, different web resources like wikis, blogs, RSS, and podcasts have become popular in conveying and acquiring information.

Wiki (from the Hawaiian *wiki*, *to hurry*, *swift*) is a collaborative website whose content can be edited by anyone who has access to it. It is a web application that allows users not only to add content, as on an Internet forum, but also refers to the collaborative software used to create such a website.(en.wikipedia.org/wiki/Wikis) Wikipedia – The free Encyclopedia, is significantly transforming the information age with greatly grown popularity.

Blog is a related Web information sharing technology. A blog (WEBLOG) is a website that contains dated entries in reverse chronological order (most recent first) about a particular topic (<http://www.answers.com/topic/blog>). One person or groups of contributors can write them. Entries contain commentary and links to other websites, images and sometimes search facility may also be included. Although most early weblogs were manually updated, tools to automate the maintenance of such

sites made them accessible to a much larger population, and the use of some sort of browser-based software is now a typical aspect of 'blogging' (en.wikipedia.org/wiki/Blogs)

RSS, Really Simple Syndication, is a family of web feed formats used to publish frequently updated content such as blog entries, news headlines and podcasts. An RSS document (which is called a 'feed' or 'web feed' or 'channel') contains either a summary of content from an associated website or the full text, RSS makes it possible for people to keep up with websites in a special programme or filtered displays. (en.wikipedia.org/wiki/RSS)

Podcasting, a portmanteau of Apple's "iPod" and "broadcasting" is a method of publishing files to the Internet allowing users to subscribe to a feed and receive new files automatically by subscription, usually at no cost. It first became popular in late 2004, used largely for audio files. (en.wikipedia.org/wiki/Podcast)

Social Networking service uses software to build online social networks for communities of people who share interest and activities or who are interested in exploring the interests and activities of others. Most services are primarily web-based and provide a collection of various ways for users to interact, such as chat, messaging, e-mail, video, voice chat, file sharing, blogging, discussion groups and so on.

Users' Information Seeking Attitudes

There has been a revolutionary change in the information accessing behaviour of the researchers and scholars due to the technological advancements. On one hand the digital publishing technologies and global networking have enhanced the development of wide variety of digital libraries and online resources of interest to the scholarly community. Different agencies are also involved in creating these resources including commercial and society publishers, universities and research institutes. Now the Open Access Movement has dawned to provide free or minimal-cost access to scholarly literature. On the other hand, the availability of different hardware and software at minimal costs has tremendously changed the information seeking attitudes of the users. With the user-friendly technology providing convenience in accessing information and with the availability of different portable equipments there has been a change in using different equipments for handling or storing information, i.e., from floppy discs to CD-ROMs to Pen drives to Mobiles to Palm Digital Assistants (PDA) is noticed in medical and healthcare fields (Groote, De & Sandra, L., 2004). Due to the availability of range of subjects with good narration at affordable costs, now the users are becoming more information savvy and techno-savvy and accepting the Web as a medium for information dissemination as it is speeding up the

communication of research results in an effective manner.

ROLE OF LIBRARIANS'

Now with the changing environments in networked world, it is very important that the librarians should be familiar with different networks and technology. The Library and Information professionals should be well conversant with information and network literacy, and e-learning. Traditionally librarians used to select, search, collect, organize, maintain and preserve the resources but in current era their role has been as follows:

- **Negotiator** – a person who should be able to identify the needs of users
- **Navigator** - Searching the ocean of information regardless the format
- **Facilitator** – Information and Infra-structure
- **Educator** - being familiar with information in different formats and should be able to train the users whenever required
- **Entrepreneur** - Marketing Library Services
- **Policy advocator** – Should be able to understand and decide certain policies while providing information services
- **Information filter** – Able to provide right information, in right time to the right person from right resource.

Challenges and Opportunities

The current digital environment offers opportunities to build up the career along with challenges to library and information professionals. They are as follows:

- **Resource Management** – Providing information from different resources (print, eresources and online resources), Resource usage, Usage evaluation and measuring the impact of usage of the resources (Research output).
- Providing information about Open Access Resources and educating the users about Open Access.
- Building Institutional Repositories
- Providing seamless integration to different databases, electronic and online resources.

- Knowledge of Intellectual Property Rights
- Knowledge Management
- Social Behaviour and attitudinal changes of users
- Digital Divide
- Providing Information literacy
- Personal counseling and interaction with library users as well as virtual users of library for getting feed-back about the services offered and for proposed improvements.

Major tasks of present day Librarians include management, leadership and website-related tasks. Due to the emphasis on team-based and collaborative projects, current digital librarians consider communication skills and project management skills very important in performing their roles. As the nature of digital libraries is constantly changing, digital librarians must be able to adapt to change and continue to learn. (Choi & Rasmussen., 2006).

CONCLUSION

An incredible fast progress in information and communication technologies are transforming the information handling and seeking habits of both librarians and users. The information professionals are adopting technologies like computing, networks, Internet, digital data etc and getting adapted to the changing environment because their main focus is the 'user' and the fulfillment of information needs of the users according to the organizational requirements. In spite of the availability of different online resources, still most of the users are unable to use them, as they are unaware of handling them. Initiatives have to be taken by the different organizations in educating the users and librarians about different information sources and their usage.

One of the foremost requirements is the training of staff in library service marketing strategies. Development of soft skills (better communication and behavioral pattern etc.) to be paid due attention and short term training programmes for the LIS staff should be organized. Training influences perception, attitude and opinion about the information conveyed. Course curriculum for LIS should be revised with emphasis on development of the soft skills as core competencies (Vogt, Hannelore., et al., 2008).

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