Impact of Information and Communication Technology on the Library and Information Services

Saeed Ahmad[1] and M. Furqan Ullah [2]

1. Senior Librarian, Wadia Institute of Himalayan Geology, Dehradun-248001
2. Asstt. Library & Information Officer, National Institute of Hydrology, Roorkee-2477667

Abstract

The advancements in the field of science and technology have made tremendous improvements and changes almost in all walks of life. The buzz word Information and Communication Technologies (ICT) has been chanted globally in all walks of life and libraries are not exception to it. The ICT have been in use in the libraries with varying degree of its application in its management and services for over three decades. Today the ICT hold the key for the success of modernization and management of the Library and information centers. This paper attempts to examine the impact of ICT on libraries. The paper highlights the changing dimensions of library services due to the impact of ICT.

Keywords: ICT, Library Automation, Information Systems. Special Libraries

Introduction

The industrial revolution led the society towards mechanization and automation. Today the networking of computer plays an important role in communication and dissemination of information. The developments in ICT have changed the format, sources of information and also affected the ways and means in which the library services are provided. Libraries introduce various new services in order to satisfy the users demand. For this purpose libraries have modify the existing service or introduced complete new service e.g. portals, online reference service, OPAC, electronic publishing etc.

In the 21st century, with change in the mode of providing library services to the users, librarians too need a makeover in their role from a mere caretaker of books to a professional who organizes, guides and retrieves the information for the right user at the right time. The growth of ICT has had a profound influence on libraries. The revolution of Information and Communication Technology (ICT) across the globe made tremendous changes in all sections of the society. It also made a significant impact on the global knowledge economy, which reduced the gab between the information rich and poor and digital divide.

Aims and Objectives

The primary purpose of the present study is to investigate the use of state-of-the-art applications of ICT in various areas libraries and information services.

Components of ICT

ICT is a broad term used for the combination of information technology (IT) and telecommunication technologies which is the convergence of computers, communication and microelectronic-based techniques. It includes the devices like Radio link, Fax, TV and Telephone, Mobile phone. The Internet, WWW, Email, LAN, ISDN, Videoconference and Satellite communication technologies are major part of the ICT.

Internet

The Internet began in 1969 as ARPANET, a project of the U.S. Department of Defence. It enables users to communicate via e-mail, transfer data and program files via FTP, find information on the WWW and access remote computer systems such as online catalogs and electronic databases easily and effortlessly, using an innovative technique called packet switching. Internet is not only a medium for digital communication but also the world's largest repository of information.

ICT and Libraries

The ICT has enabled the Libraries and Information Centers to exploit the new technologies for information processing its storage, organization and retrieval, New methods of knowledge dissemination by creating the 'collaborative tools' and designing user-friendly interfaces for providing the customized services to the end users. These new tools facilitate for global partnership and networking of institutions for knowledge creation, preservation and sharing. Libraries and Information centers are at the forefront of experimenting and implementing the new technologies for providing information to the people. Professionals need constant updating skills to manage knowledge resources in the changing environments. Information professionals need to enhance their capabilities and demonstrate their skills to manage the emerging technologies to provide information services to the end users.

Libraries which were considered only as the storehouses of knowledge have got a new outlook in the modern Information Communication Technology era. The activities which were carried out manually in libraries with so much of pain and strain are being carried out smoothly with the help of ICT with greater effectiveness. Library organization, administration and other technical processing have become easier and more quantum of work can be done easily and instantly.

The ICT enabled services falls into two categories as follow:
- ICT application in conventional library services.
- ICT based new library services.

ICT application in conventional library services

The ICT has tremendously changed the management of library resources or in house library operations as well as the methods of delivering the services. While general IT application

tools and *Integrated Library Management Systems* are largely used in house keeping operations, like acquisition, cataloguing, circulation control, serials control etc; Internet has been used extensively as a resource as well as a tool to deliver the Library and Information Services (LIS).

ICT application of in other library services

1. *Acquisition :In the acquisition process following services are used*
   - *Online ordering and correspondence through e-mail with booksellers and publishers.*
   - *Calling quotations, sending reminders regarding delay in supplying books.*
   - *Online ordering books through publishers/books stores through e-commerce.*

2. **Classification:**
   - *Classifying documents using DDC Online.*
   - *Library of Congress Online Classification System.*

3. **Cataloguing:**
   - Downloading MARC catalog records of documents using Z39.5 gateways.
   - Online up dating of catalog records.
   - Browsing the Online Catalog of library through web OPAC.

4. **Collection Development:**
   - Subscription of periodicals in print as well as in e-form.
   - Managing online subscriptions and access to e-journals.

5. **Circulation**:
   - Remote access, Checking availability of books, reservation of books, , sending reminders for overdue items.
   - Online user requests for borrowing on Inter Library Loan (ILL).

6. **Resource Sharing:**
   - Union catalog, accessing databases over networks.

7. **Services:**
   - ILL, Document Delivery Service, Reference Service, Providing CAS, Recent Additions List.
   - Providing SDI, Accessing databases (Bibliographical, Full-Text).

Impact of ICT on library services:

Before talking about the new ICT based services some of the important changes that developments in ICT have brought about in handling and management of information services are outlined below:

- Changes in formats, contents and methods of production & delivery of information products. This requires procedural and infrastructural changes and cost implications in Libraries.
- Internet has emerged as the largest repository of information and knowledge.

- Extinction or significant transformation of some of the conventional information services such as press clippings, contents pages, company information etc.
- Use of new tools and technologies for dissemination of information.
- LIS professional role has transformed to the subject specialist.

New Services

Apart from the ICT enabled conventional services, Libraries are making use of potential of internet and computing power to provide new and innovative services. The new LIS services can be grouped into the following three categories:

- Internet and internet based services
- Access to web based resources
- Providing access local or internal information resources in digital form
- A library web page serves as single window access to various web enabled library services. A library web page may a simple listing of the services with some links to catalogue and external free and subscribed resources or it may include advance features like value added services such as subject gateways.

The Digital Library

"A **digital library** is a library in which collections are stored in digital formats (as opposed to print, microform, or other media) and accessible by computers." The digital content may be stored locally, or accessed remotely via computer networks.

- A digital library is a type of information storage and retrieval system.
- A digital library is a library consisting of digital materials and services.
- Digital materials are items which are stored, processed and transferred via digital (binary) devices and networks.
- Digital services are services (such as reference assistance) that are delivered digitally over computer networks.
- Digital library maintains all, or a substantial part, of its collection in computer-accessible form as alternative, supplement, or complement to the conventional printed and microform materials that currently dominate library collections.
- The terms such as 'electronic library', digital library', 'virtual library', 'web-library', or 'on-line library' have been used synonymously to represent the same concept i.e. to define the digital content of the documents

The purpose of digital library is to facilitate access to electronic information, print material, and library services to ensure that the information needs of user community are met, regardless of their location. It enables libraries to deliver valuable information that already exists within library walls electronically to patrons outside those walls, to create new digital resources

Conclusion:

Developments in information and communication technologies have a profound impact on library and information services. Libraries can preserve and improve its identity by applying

ICT. Internet access should be seen as a mean to boost up information access for users. Libraries should make use of ICT and consistent efforts to provide web based services to their users. The library professionals should also embrace the changes confronting them. Librarians should also have the ability to learn new skills and have complete mastery over them. Technical expertise is also important, including the ability to identify and retrieve useful data. Librarians' skills must meet the needs of this new era.

References and Further Reading:

1. Arora, Jagdish. (2001) Web-based digital resources and services: trends and innovation. In Creation and management of digital resources. Papers presented at the Eighth National Convention for Automation of Libraries in Education and Research Institutes (CALIBER-2001) Pune, March 15-16, 2001. Edited by MKR Naidu and others. Ahmedabad: INFLIBNET Centre. Pp. 185-212.

2. Bhat, Anjlee. (2003) Digital Libraries Free Pint No. 128. http://www.freepint.com/issues/090103.htm#feature>

3. Bhattacharya, S(2004) Road Map to New Generation of Libraries Using Emerging Technologies : Digital / Virtual/ E- Libraries. 2nd International CALIBER-2004, New Delhi, 11-13 February, 2004

4. David Raitt (Ed.). *Libraries in the New Millennium: implications for managers.* London: Library Association Publishing 1997, 288p. ISBN 1-85604-257-X.

5. Davidow, William H. and Malone, Michael S. Virtual Corporation. New York: Harper Collins, 1992.

6. Definition and purpose of digital library. *Association of research libraries.* October 23, 1995

7. Lancaster, E W and Sandore, Beth. (2001) Technology and management in library and information services. London, Library Association.