

Use of Information & Communication Technology in Public Libraries

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ABSTRACT

Development in Information and Communication Technology (ICT) has influenced libraries for their overall betterment. Libraries use ICT to manage communication facilities, housekeeping operations, users' services, standardization and extension of library activities. The shift from print to digital information has a high impact on all components of the public library system in India, especially the users, services and the staff. Though information is considered an important resource, the use of ICT tools to collect and disseminate information has been in a slow pace in the majority of libraries. This may be due to various factors like insufficient funds, inadequate staff trained in handling computers and software packages, administrative concerns, etc. This paper overviews the basic concept of information and technology used in libraries.

KEYWORDS: Information & Communication Technology, Information Technology, Public, Libraries, e-library, etc.

INTRODUCTION

Information is the key factor of any kind of research and development. Information is a fundamental resource that is essential for survival in today's competitive and wired world. The information itself and the way it is accessed have undergone changes owing to the developments in information and communication technology. It is a vital ingredient for the socio-economic and cultural development of any nation or individual. According to Kemp, "Information is considered as the fifth need of man ranking after air, water, food and shelter".

The value of information in every human endeavour cannot be overstressed. Quick and easy access to every required information is of supreme importance, especially for libraries. Information technology applications and the techniques are being used by the libraries for information processing, storage, communication, dissemination of information, automation, etc. Further, the origin of the internet and the development of the World Wide Web revolutionised information and communication technology. Recognising the advantages of the application of information technology, libraries are essential to provide the facilities to their user community.

Developments in Information technology (IT) are the application of computers and telecommunications equipment to store, retrieve, transmit and manipulate data, often in the context of a business or other enterprise. The term is commonly used as a synonym for computers and computer networks, but it also encompasses other information distribution technologies such as television and telephones. Several industries are associated with information technology, such as computer hardware, software, electronics, semiconductors, internet, telecom equipment, e-commerce and computer services. Personal computers and notebooks have evolved in the market; the conventional personal computers will remain the main computing device for providing basic services in a public environment. According to Battin (1984), early efforts to apply computer technology to library activities took place between 1960 and early 1980s as the first generation of library computing. During this period, development of networks, the first online public access catalogue (OPAC), International protocols, evolution of the Internet, etc. Libraries have used microfilms, microfiches, aperture cards, etc. from the 1920s to develop and manage their collections, reproduce and preserve library materials. Microform collections were the most preferred substitute for printed materials as they saved storage space, binding costs, and also reduced the chances of damage. Developments in optical storage technologies had a great impact on the library field in the mid 1980s. The late 1980s saw the introduction of a number of new optical Storage products, including erasable system.

Developments in Communication Technology

The progress in communication technology and media have helped to increase access to educational resources and thereby enhance the quality of education. The use of interactive communication media has facilitated the expansion of opportunities for higher education. To meet the increase in demands to access, locate and transform large amounts of data, libraries are struggling to make the best use of available telecommunications technology. A communication network provides interconnection of several computers, wherein a user can communicate with any computer as a local user. The system will have facilities to create, transmit and print a message or document electronically. Email or electronic mail is one of the most commonly used communication methods by which a person can create and transmit messages electronically to an individual or group of individuals. In a public institution, email is used effectively for providing better services like Current awareness service, SDI, Alert service for new books, etc. Voice mail is an advanced form of email where a person can dictate or transmit a message over telecommunication lines using a modem. Facsimile transmission or Telex is a useful system for communicating data images over telecommunication lines, enabling a user to transmit text or graphics securely. It is used in some public libraries for document delivery and other scholarly communications. A dedicated telephone line and fax machine are to be installed for this purpose. Video conferencing is another communication technology that uses a high-speed telecommunication network to transmit audio and video, allowing people to conduct meetings across the world. In a public institution, this can be applied effectively to link several classrooms to hold debates or discuss topics with an eminent person. Networking in libraries plays a major role in information resource sharing and support activities through a network of computers and databases with the help of telecommunication.

Application of Information Technology in Library

Libraries are repositories of knowledge and information and are indispensable in the information age. With the merging of information technology with library science, the nature of libraries and the scope of their services have radically changed. Organising and disseminating information. According to Rowley (1996), information technology includes the following four major areas:

1. Methods and tools of recording knowledge, like computer storage media (Magnetic: Floppy disk, hard disk, tapes and Optical Storage Devices –like CD-ROM, DVD (Digital Versatile Disk), Rewritable CDs and DVDs)
2. Methods of keeping records (Computer hardware, software, creating databases, etc.)
3. Methods of indexing documents and information (Computerised indexes, Machine-readable catalogues, etc.) and
4. Methods of communicating knowledge (Electronic mail, facsimile transmission, Electronic journals, teleconferencing and data communication networks). The library is the main information centre which can make use of the latest development in IT for the benefits of mankind as a whole. The librarian's preference of IT should include all those technologies which are expected to be used in the library activities/ operations and other library services for collection, processing, storage, retrieval and dissemination of recorded information. The fast-developing information technologies have showered almost every area of application, including libraries. In the case of libraries, these are good uses in the following environments.

a. Library Management: Library management includes the following activities, which will certainly be geared up by the use of these fast IT developments: Classification, Cataloguing, Indexing, Database creation, and Database Indexing.

b. Library Automation: Library automation is the concept of reducing human intervention in all library services so that any user can receive the desired information with maximum comfort and at the lowest cost. Major areas of automation can be classified into two: organisation of all library databases and all housekeeping operations of the library.

c. Library Networking: Library networking means a group of libraries and information Centres are interconnected for some common pattern or design for information exchange and communication with a view to improving efficiency.

d. Audio-Video Technology: It includes photography, microfilms, microfiches, audio and tapes, printing, optical disk etc.

e. Technical Communication: Technical Communication consisting of technical writing, editing, publishing, DTP systems, etc

Advantages of Information Technology

- Easy to gather different library activities.
- Collaboration and creation of library networks
- Avoid repetition of efforts within a library
- Increase the range of services offered
- Save the time of the users .

- Speedy and easy access of information
- Improves the quality of library services
- Enhance the knowledge and experience
- Access to unlimited information from different sources
- More up-to-date information and flexibility to the users
- Reforming and combining of data from different sources
- Reduce the workload of the library staff

Disadvantages of Information Technology

- Insufficient funds
- Operational costs are increasing year by year.
- Inadequately trained staff
- Unemployment

Classification of Information Technology-Based Services

Information technology-based services can be organised based on three main criteria.

I. Apparatus and Amenities

The equipment and facilities available in the library are listed in the following headings.

- a) **Computers:** Computer-based technologies have become dominant forces to shape and reshape the products and services the public library has to offer. The success of the IT-enabled services in the library is based on the efficiency of the equipment provided in the library i.e. most modern technology, not on the basis of the number of equipment.
- b) **OPAC:** An Online Public Access Catalogue (OPAC) is an online database of materials held by a library or group of libraries. Users search a library catalogue principally to locate books and other material physically located at a library.
- c) **Union Catalogue:** A union catalogue is a combined library catalogue describing the collections of a number of libraries. Union catalogues have been created in a range of media, including book format, microform, cards and more recently, networked electronic databases. Union catalogues are useful to librarians, as they assist in locating and requesting materials from other libraries through interlibrary loan service.
- d) **CD-ROM:** Presents a state-of-the-art review of the applications of CD-ROMs in public libraries, embracing all aspects of library involvement and staffing implications. Concludes that CD-ROM is having a huge impact on the way public libraries function and the services they offer to their users.
- e) **Scanner:** In computing, an image scanner—often abbreviated to just scanner—is a device that optically scans images, printed text, handwriting, or an object, and converts it to a digital image.. Mechanically driven scanners that move the document are typically used for large-format documents, where a flatbed design would be impractical.

f) **RFID:** Radio frequency identification is a term used for technologies utilizing radio waves for identifying individual items automatically. The most common way is storing a serial number identifying a product and related information on a microchip attached to an antenna. RFID is used very similar to bar codes.

g) **Photocopy:** A photocopier is a machine that makes paper copies of documents and other visual images quickly and cheaply. Most current photocopiers use a technology called xerography, a dry process using heat. Photocopying is widely used in library

h) **Printing technology:** In computing, a printer is a peripheral which produces a text and/or graphics of documents stored in electronic form, usually on physical print media such as paper or transparencies.

i) **Barcode:** A barcode reader (or barcode scanner) is an electronic device for reading printed barcodes. Like a flatbed scanner, it consists of a light source, a lens and a light sensor translating optical impulses into electrical ones. Additionally, nearly all barcode readers contain decoder circuitry analyzing the barcode's image data provided by the sensor and sending the barcode's content to the scanner's output port.

II. Customer Services

a) **Document delivery services:** The Document Delivery Service (DDS) delivers copies of journal articles and book chapters from participating Libraries. Fees apply for most Document Delivery Services. To fulfill the information needs of the end user through information/document supply is a document delivery service. This service is provided on No Profit - No Loss Basis and Expected to be prompt.

b) **Interlibrary loan:** Inter library loan means a cooperative arrangement among libraries by which one library may borrow material from another library. In other words a loan of library materials by one library to another library.

c) **Indexing and abstracting services:** a method which is used to retrieve information from a table in memory or a file on a direct access store or the art of compiling an index. The preparation of abstracts, usually in a limited field, by an individual, an industrial organization of restricted use or a commercial organization: the abstracts being published and supplied regularly to subscribers. Also the organization producing the abstracts. Such services may be either comprehensive or selective.

d) **CAS:** The purpose of a current-awareness service is to inform the users about new acquisitions in their libraries. Public libraries in particular have used display boards and shelves to draw attention to recent additions, and many libraries produce complete or selective lists for circulation to patrons. Some libraries have adopted a practice of selective dissemination of information.

e) **SDI:** Selective dissemination of information ("SDI") was originally a phrase related to library and information science. SDI refers to tools and resources used to keep a user informed of new resources on specified topics. Selective Dissemination of Information (SDI) was a concept first described by Hans Peter Luhn of IBM in the 1950's.

f) **Scanned copies:** A scanning service for material not available electronically, which is held by the Library. This includes articles from journals and chapters from books. Users of the service should be aware that we operate within the restrictions of the Copyright Act.

g) **Bulletin board services:** A Bulletin Board System, or BBS, is a computer system running software that allows users to connect and log in to the system using a terminal. Once logged in, a user can perform functions such as uploading and downloading software and data, reading news and bulletins, and exchanging messages with other users, either through electronic mail or in public message boards.

h) **Electronic services and e- resources:** The important fact is convincing many libraries to move towards digital e-resources, which are found to be less expensive and more useful for easy access. This is especially helpful to distant learners who have limited time to access the libraries from outside by internet access to commonly available electronic resources, mainly CD-ROM, OPACs, E-Journals, E-Books, ETD and Internet, which are replacing the print media.

i) **Digital library:** A digital library is a library in which collections are stored in digital formats 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 retrieval system.

III. Electronic Sources

a) **Audio-visual materials:** The Audio-visual Collection contains a wide range of audio-visual material to support the research and study needs of staff and students.

b) **Internet:** With the advent of the digital revolution, communication has become easier and faster, and decisions are made instantaneously. The internet, which is the latest among the super highways, has cut down the distance and made it easier to have access to information for all people at all places and at all times.

c) **Library website:** Library website helps to recognise the facilities and information sources available in the library. In most of the library website online catalogue is included. An online catalogue helps to ascertain a client whether the information is available in the library.

d) **Database:** A database is an organized collection of data for one or more purposes, usually in digital form. The data are typically organized to model relevant aspects of reality, in a way that supports processes requiring the information. Users of the service should be aware that we operate within the restrictions of the Copyright Act.

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CONCLUSION

Even though librarians are facing challenges for new and emerging skills, the most important aspect of this change is to be able to adapt the existing skills, many of which are traditional librarianship skills and the ability to remain flexible in a working environment that is constantly changing. The rapidly changing environment of public libraries needs the attention of the authorities that manage LIS education in the country. Information technology competencies demanded by most of the institutions require particular emphasis in our LIS curriculum

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