

Role of Information and Communication Technology (ICT) in Library Development

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Abstract:

Information is very essential for every human being as per their need. The information is transferred from one generation to another by acquired, store, process, evaluate, retrieve and disseminate with using various sources like; books, journals and manuscripts. Due to invention of ICT and its application in library, the source of information has changed from physical information resources to the digital/electronic information resources. Currently ICT has played vital role in producing, accessing, processing, storing, retrieving and disseminating information in every field of all sectors. All the modern libraries are used ICT for library automation and digitization of books and other reading material. While using ICT in library, the library system goes to paperless library, library without boundaries, virtual library etc. Due to impact of ICT all the modern libraries are changed their shapes from store house of books to the power house of knowledge. The modern libraries are not restricted to store the physical books and journals but subscribes e-books, e-journals, e-databases and the libraries are known as hybrid library.

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I. INTRODUCTION

A library is a collection of books and non-book materials stored and organised for use. A library plays a vital role in every educational institutions from primary level to the higher education. The modern educational institution libraries not only store printed reading material like; books, periodicals and newspapers but also subscribe to e-books, e-journals, CDs/DVDs and purchase educational databases. The main reason of e-collection in modern libraries is to equip with information and communication technology. A library, whether public, national, academic, research or special library has its main objective and function to collect, organise and disseminate information to its end users efficiently and effectively. The libraries of the 21st century have to conceive not merely as a store house of books and others reading materials, but also be an effective mechanism to facilitate and dissemination of knowledge, promoting information and knowledge sharing. The libraries of the 21st century should transmit today's literate society to a knowledge-based society of tomorrow. A library is a fulcrum or support for the entire range of academic activities on an education institution (Mandao & Singh, 2011).

The recommendations of Educational Testing Services refers to the Information Technology (IT) was used before many years, specifically in the United States, and it also refers to the electronic accessing, processing and storage of required information, but not for the transmission of information. However, ICT represents the group of activities and technologies that covers into the group of Information Technology and Communication Technologies. World Industry, International Medias and academics has increasingly currently used IT to describe this group of ICTs. The actual benefits of adding "communication" doesn't derive from including specific technologies, such as routers or servers, but from the dynamism implicit in interconnected

social, economic, and information networks (Educational Testing Service, 2002).

The invention of ICT has changed the entire process of libraries and moved towards digital and electronic resources, which are generally found to be less expensive and more helpful for easy access. The globalization ways of life and electronic resources have made the information as the backbone for each and every library and information centres (Maharwar, 2011). In this ICT environment, the skill of LIS professionals in engineering institutions of Orissa has found that ICT has considerably changed the library environment over last few decades in terms of their nature in the collection, organisation and services. The e-resources (both web resources and digital collection) have occupy a significant space in the library collection, the transaction of library resources are completely automated, online services are offered by libraries to entice user's participation in the increasing library usage and library services. These changes are possible due to the invention and information communication technology (ICT) and its impact on libraries, which have not only implemented in library but also made a changes in all walks of life (Satpathy & Maharana, 2011).

II. ICT IN GENERAL APPROACH

ICT is any combination of computer, telecommunication and other related technologies used to acquire, store, process, access/use, transfer and dissemination of information when required. Information technology is a ordinary term that covers the accessing, storing, processing, retrieving and dissemination of information of all kinds of material like texts, numbers, graphics and sound recording and it is application at all the areas e.g. banking, business, science and technology not just library and information science field.

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The term is restricted to system's depending on a microelectronic based combination of computer and telecommunication technology. Now it has largely been replaced by Information communication technology. In the current ICT age, every modern library has to grow in terms of reading resources, other equipment's, space, library staff, readers etc. The library and information scenario is changing at a dynamic pace. There is a radical changes from the printed reading material to web/online resources; from the ownership of documents to access the online information, intermediary to the end-user model of services and from the location of specific libraries to digital/virtual/hybrid libraries (Hussain, 2013).

Information Communication Technology has been used with the computer based technologies and the internet to make the changes in information and communication services accessible to the extensive areas of the user community. ICT has broadly used to address a range of technologies, comprise of telephones and emerging technological devices (Sharma, Singh, & Kumar, 2009). The libraries in the age of information technology have shifted their roles from the custodian of books to the provider of service-oriented digital information resources.

III. DEFINITION OF ICT

"ICT as a tool used for collection, processing, store, transformation and dissemination of information. With advances in ICT, electronic information resources such as electronic books, electronic journals, CD ROM database, OPAC, online databases and internet have launched the world into an information age" (Quadri, 2012).

The advent of ICT today has indicated that this age of information and communication is rapidly transforming from information society to knowledge-driven society. The concept of ICT is a generic term that is used to access, retrieve, store, organise, manipulate, produce, present and exchange information by electronic and other automated means (Olatunji & Oluwadare, 2011).

Use of ICT Tools in the Libraries:

The modern libraries have shifted their collection and services from books and journals to e-books and e-journals, and from traditional service oriented to modern online resource and service providers.

ICT has provided libraries with new opportunities to improve their resources and services. The main tool to be implemented in libraries are as follows (Khan, Dominic, Banga, & Garg, 2011):

- i. **Computer:** The computers are now commonly used to write letters, preparing reports, printing books, newspapers and magazines, drawing pictures and diagrams doing statistics, mathematics, handling financial records and sending messages anywhere through internet.
- ii. **Internet:** The Internet is the world's biggest computer networked system that can be accessible of all kinds to sharable services and communicate directly with each other's. In the library, the Internet is a useful tool to share information, online resources, e-documents and interlibrary loan facility.
- iii. **E-mail:** Electronic mail, it is useful to exchanged messages or files from one computer to another via internet networks. The email services is an equivalent of postal mailing services, its biggest differences are being the time and cost involved, and not only written data, but all types of information in the form of videos, audios or photographs, can be sent via e-mail.
- iv. **Mobile Phones:** Mobile phones are an electronic device works like as minicomputer or laptop and it can moved easily and quickly from place to place. Mobile phones are now the ICT tool that are reshaping the communication globally. Through the use of mobile phone in the library, users can access all the electronic resources without visiting the libraries physically. Library users can also download required information on a mobile phone when needed.
- v. **Fax machine:** Fax machine gives permission to the transaction of images (photos, printed images, maps, drawing) and their reproduction on paper at a remote receiver from one place to another. It is like a long distancing copying system device that might be an appropriate nickname for the telecommunication process.
- vi. **Scanner:** An image scanner is an important ICT tool that can be translates the paper document into an electronic format and it is stored in a computer. The input documents may be a typed text, images, graphics or even handwritten material. The image scanner has been found to be very useful in preserving paper document into electronic form. In the library, a scanner is very useful for scanning the important document related to the library.
- vii. **Printer:** The printer (like black and white or colour printer) is an output device, and it can be processed data into the form of tables, graphics, spreadsheets, diagrams, pie charts, scheduled reports, images etc. may be printed on a piece of paper by using the printer.
- viii. **Barcode Reader:** Barcode reader is a device that can be useful for scanning barcoded data. It may be hand-held or embedded in a stationary scanner. A barcode reader is used in the library for circulation of library books and stack verification preferably.

The following ICT tools described by (Islam & Islam, 2006):

- i. **CD-ROM Technology:** CD-ROM is an optical disc of 120mm diameter and a hole of 15mm at the centre with thickness 1.2mm. Data is recorded in digital form using laser beam. CD-ROM is used to hold prerecorded text graphics and sound. It is micro storage device e.g. 18 volumes Marathi vishvakosh has stored in only 3 CD-ROMs.
- ii. **Communication Technology:** Communication or telecommunication technologies are used to transmit information in term of signals between remote location using electronic or electromagnetic media carriers of signals some examples of communication technology are audio technology, audio-visual technology, motion picture, television (TV).
- iii. **Telephone:** The telephone is one of the longest established methods of electronic information communication especially transfer the voice, which can

be a strong means of disseminating information and keeping what is being happened to a concerned organization and outside institution.

- iv. **Reprography:** The science and practice with regards to replicating and duplicating records and realistic material. Reprographics is a blanket term enveloping numerous techniques for imitating content, such as scanning, photography, xerography and digital printing. The term applies to both physical (printed version) and computerized (electronic version) reproductions of archives and pictures. Today, reprography assumes a critical part in the transmission of information inside library resources and services. It helps to preserve libraries rare and special material and collections.

IV. IMPACT OF ICT ON SOCIETY

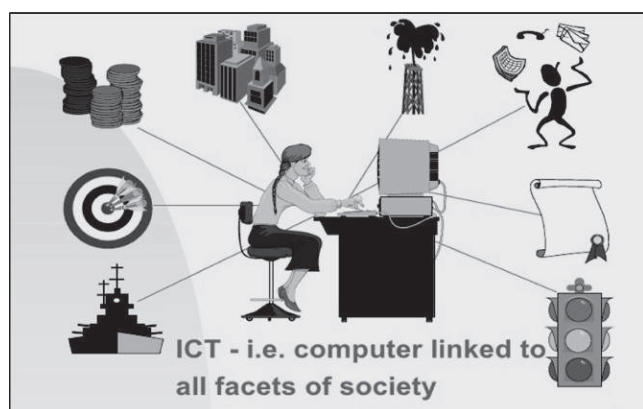


Figure No. 1: Computer Links to All Facet of Society through Internet

V. IMPACT OF ICT ON THE LIBRARY

- 1) ICT has transferred information in the digital format,
- 2) ICT has made online information and transfer files, images, videos in short time,
- 3) ICT has made networking and sharing of information resources among library or group of libraries,
- 4) Digital information may be free or cheaper than the printed reading materials.

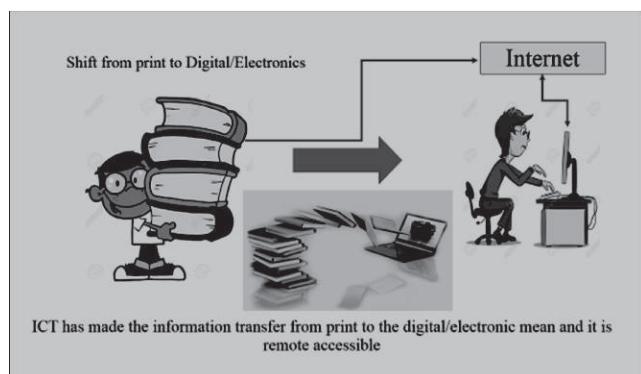


Figure No. 2: ICT has made the Transfer of Digital Information from Remote Places (Jena & Das, 2013)

ICT has made the printed information resources into a digital resources and available to remote accessible.

VI. ADVANTAGES OF ICT IN LIBRARIES

There are various issues involved in ICT application in the library it is essential to understand the advantages of ICT in a library situation. The advantages explained by (Sharma et al., 2009) are as follows:

- ICT provides opportunities to deploy innovative methodologies and to deploy more interesting materials that create an interest in the librarians,
- It enables better management of the library, thereby improving the productivity,
- It enables the librarian to concentrate on other tasks such as research and consultancy,
- It enables optimum utilization and sharing of resources among institutions thereby reducing the costs of implementing ICT solutions.

VII. CONCLUSION

Information and Communication Technology (ICT) tools and techniques utilization has been spread widely in every work of human being and all kinds of organizations and subjects. In this academic environment, application of ICT is more useful to create a standardized and better academic environment in educational institution. Libraries are not avoid from ICT application. Libraries are the hurt of any academic institution and it's a central place to cater the information needs of students and faculties of the institutes. Due to rapid changing environment, it is necessary to apply the ICT in libraries to provide better and up-to-date services to the end user. ICT has improved the library services than traditional one and now become the demand of the users as well as organization to fulfill the necessary requirements on time. After this current pandemic situation all the academic libraries should make very fasters and smarter and digital, virtual and electronics ones. Librarian and all the library staff should update their ICT skills and techniques to provide library facilities and service as per user demands.

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