



# INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) FACILITIES IN ACADEMIC LIBRARIES IN INDIA: A REVIEW

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## ABSTRACT:

This paper is an attempt to explore the crucial roles of Information and Communication Technology (ICT) in management and provision of library services in India. The paper further identified the challenges of ICT application in libraries. It was recommended among others that, there should be improvement in the capacity and level of ICT adoption by libraries.

Keywords: Information and Communication Technology (ICT), Libraries, Sustainable Development, ICT-based library services

## 1. INTRODUCTION:

In this 21<sup>st</sup> century, the drastic role of ICT in library operations cannot be over emphasized. Many library routines and operations that were initially performed manually are now being converted to computerized operations which means, applications of ICT techniques to providing better and faster services to the end users.

Information Communication Technology (ICT) has remained a catalyst in the issue of national advancement and development. Information, as power is effectively an infinite resource and a vital tool needed for the development of all sectors in any nation. It is therefore, imperative that application in libraries would go a long way in satisfying the information need of the citizens. It is worthy of note, that the emergence of ICT has impacted greatly on the quality of information provided through libraries. It also enables proper and adequate provision of library services to library users from all disciplines.

A nation without functional libraries and information centers may lack access to information that would enable her sustainable development. In this era of globalization, in which the world is connected, information gains its power through permanent storage and wide distribution, which could be achieved through ICT.

## 2. REVIEW OF PAST STUDIES:

According to (Janakiraman and Subramaniam (2015), the world now experience a digital scenario in which ICT has changed the possibilities of the library job promotions and has brought changes to expected library performances. ICT is generic terms that refers to the technologies that are used to collect, store, edit and communicate information in various format (Raji, 2018).

The use of ICT improves access to digital information, narrows down the digital divide and also improves standard of living. Adoption of ICT in libraries is a way of improving on information services provided in libraries. This is an era, when people need to access timely information with ease, and this can only be done through the application of ICT to library services. It is also a way of contributing to sustainable development of the nation, since timely and effective provision of useful information can assist in building up a society ICT as an enabling tool, assist libraries in provision of information, which is very paramount to development of the various sectors in the nation. Libraries are playing a very important role facilitating access to global information and knowledge resources, using ICT.

Apparently, ICTs are indispensable tools needed for provision of value added information that support the sustainable development. Although, many institutions and organizations including libraries were faces diverse challenges in the process of integrating ICTs to their services. Nevertheless, information provision is paramount to development and growth of any nation. It is therefore important that, effort is made to enable usability of ICTs in all sectors, of the nation ICT and library services.

Information and communication technology is the application of technologies consisting of hardware, software, network and media for collection, storage processing transmission and presentation of information in vocal, textual, pictorial and multimedia formats, (Igwe, 2011).

ICT is a term used in the library to refer to application of computers and other technologies to library practices such as acquisition, storage, organization and dissemination of information. The world has become a global village and with ICT, many library users now have access to vast sea of information, without necessarily investing much time or energy. The process of generally and distributing information is now being facilitated through the use of ICT.

Aina, Okunnu and Dapo-Asaju (2014) postulated that ICT is a term used to describe the ability to access information with the use of telecommunication based internet resources. ICT provides the ability to create, organize, manipulate and access information from remote locations across the globe, within a short time. ICT involves incorporation of a range of technologies that are used to support communication and information dissemination.

Saidu, Tukur and Adamu (2014) described ICT as the use of computer-based technology and internet for making information and communication services available to a wide range of users. The term is broadly used to

refer to a range of technologies including telephones, e-mail and so on. Central to the range of technologies is the internet, which provides the mechanism for transporting data in a number of formats such as text, images, sound and video. ICT is system that enables information to be collected, analyzed, processed and disseminated.

The advent of ICT is indeed a boost to the library services as it now assists many librarians to use their ICT potentials to reach out to library users. (Chisenga (2004)

### 3. ICT-BASED SERVICES IN THE LIBRARIES IN INDIA:

Some of the ICT-based services that are provided by libraries in India are as follows:

- **Provision of web access to OPAC:** Libraries are providing access to web-based Online Public Access Catalogue (OPAC) interfaces. The OPAC makes it easier for users to access and use information resources. OPAC is the computer form of library catalogue, to access materials in the library (Afolabi and Abidoeye, n.d.)
- **Electronic Document Delivery:** Libraries implement ICT-based interlibrary lending system, through the use of electronic networks for documents delivery. In essence, the Document Delivery Service (DDS) enables a library to use copies of research papers or other research document, from other libraries. These documents could be journal articles or other documents in digital format. They are mainly in portable document format (PDF) and they delivered to library users' desktops.
- **Online Instruction/User Education:** There is implementation of online based bibliographic or library user programmes such as online tutorials on searching online resources and virtual tours of library collections. Libraries can also use internet or CD-ROMs to educate users.
- **Online Readers Advisory Services:** Libraries now implement web-based versions of reader's advisory services to include informing users about new acquisitions, provide reviews and recommendations and so on in using the web.
- **Networked Information Resources:** Libraries now provide users with access to networked information such as database, electronic scholarly journals and other publications from various publishers. The services rendered in a library differ from one library to another, depending on the type of library, the type of patrons and the parent body's objectives.
- **Reprographic Technology:** These are widely used in libraries globally. Reprographic machines are provided in libraries to ease photocopying of documents on demand.
- **Library Retrieval System:** This involves the use of compact disc read only memory (CDROM), a technological mechanism for acquisition of specialized CD-ROM databases in various discipline such as law, sciences, medicine technology, agriculture, humanities and so on.
- **Indexing and Abstracting Services:** It is a service that is carried out to provide summaries of documents and also to assign descriptors for referencing documents.

- **Institutional Repositories:** It is an online archive for collection, preservation and dissemination of digital copies of the intellectual output of academic or research of institution, this could be journal articles as well as digital versions of theses and dissertations. This service is mostly provided in academic or research libraries.
- **Document Scanning Services:** Scanner is important equipment in modernization of library. It is useful for scanning text, image and content page of books and providing great help for establishing digital and virtual library.

Other library services as highlighted by (Idowu (2011) include, Reference Service, Current Awareness Services (CAS), Selective Dissemination of Information (SDI), Reprographic Service, Exhibition and Display, Technical Services, Serials Control, Computerized Interactive Search, Borrowing, Renewing and Reserving.

#### 4. BENEFITS OF ICT IN LIBRARIES:

Globalization driven by ICT is presently having phenomenal impact on library practices ICTSs are significant and useful tools for sustainable development in all fields and all aspects of our society. ICTs provide means to actualizing developmental goals in education, health, agriculture, business and commerce among others.

According to Olise (2010), the introduction of ICTs in education had brought about computerization of traditional materials such as books, journals newspaper and other information resources in the library. This has also led to the existence of virtual library. Educational researchers, through the use of ICT can access current literature materials with ease. ICTs also encourage collaboration among researchers irrespective of their locations.

Internet provides up-to-date information on any subject. On professional duties, computers are used to automate different manual functions. Acquisition, cataloguing of library materials, circulation, cataloguing of library materials, circulation and serials management are now automated in libraries, using available software in the market. ICTs enable libraries to locate store, retrieve and disseminate information. ICT tools such as CD-ROM, e-mail are used in libraries for dissemination of information. In addition, digitization of information resources which involves converting print resources to electronic form is also carried out, using ICT. The other benefit of ICT in libraries was stated by Ashikuzzaman in 2014 are-

- Provision of speedy and easy access to information
- Provision of remote and round the clock access to users.
- Provision of access to unlimited information from different sources
- ICT enable easier, faster, cheaper and more effective library operations.
- ICT helps to manage information overload as information retrieval is made easier in computerized systems
- Computerization helps the library to save space and reduce paper.

## 5. ESSENTIAL ICT RESOURCES IN LIBRARIES:

ICT as aggregate of computers, telecommunication gadgets, multi-dimensional resources and other related technologies are applied and utilized in the total process of information management and dissemination. The various components of ICT have provided a facelift for the support of varying professional services these are as follows.

- **Computers:** These are essential management tools which can be used to handle different operations more efficiently. Computers can be used for various activities such as information generation, processing, storage, analyzing and information dissemination for sustainable development. The use of computers in the library is noted with great assets such as speedy information transmission, cost effectiveness and optimal utilization of available resources.
- **The Internet:** This ICT resource is a means to speedy flow of information. It is a network of computers, communicating with others, often via telephone line. The internet provides a worldwide platform for information sharing among individuals, institutions and organizations. The use of internet enables the provision of current and useful information to enhance productivity and good governance.
- **Electronic Mail (E-mail):** This is the most widely used resource of the internet. It is used for sending and receiving of messages otherwise known as mails. The messages are communicated through electronic device. E-mail enables faster and cheaper organizational communication.
- **World Wide Web (WWW):** This is also an internet-based resource. Websites help individuals, organizations or institutions find products or information and transact business. Relevant information is made available to members of the public through the websites of many organizations or institutions. Being on the web, places any nation or organization on the right cause of speedy and sustainable development in line with emergence of changes in technology, economic and political area.
- **Video Conferencing:** This enables people at different locations to hold conferences by data communication network. It is convenient and less expensive for conducting a conference between two or more participants situated at different remote location (Mishra and Mishra, 2014).
- **Printing Technology:** A printer is a device that converts computer output into printed images. There are different kinds of printers used in library. They include Laser printer, Inkjet Dot-matrix printer and so on.
- **Online Public Access Catalogue (OPAC):** It is the computer form of library catalogue to access information materials in the library. It is an online database of materials held by a library or group of libraries. It is a computerized library catalogue made available to the public. Most OPACs are accessible over the internet to users all over the world (Mishra and Mishra, 2014)

## 6. CHALLENGES OF USING ICT FOR LIBRARY SERVICES:

There is awareness that a lot of benefits are derived, through the adoption and use of Information and Communication Technologies (ICTs) in libraries, nevertheless, there are many challenges to be addressed. These include-

- Constant changes in software and hardware,
- Copyright and intellectual property right management,
- Erratic Power Supply,
- Insufficient bandwidth,
- Lack of ICT policies,
- Lack of orientation, demonstration and hands-on training facilities,
- Lack of support from higher authority and subordinate staffs,
- Lack of technical or IT knowledge by library staff,
- Less awareness of handling ICT devices,
- Limited financial resources,
- No expert to assist or to help when needed,
- Poor maintenance of ICT Equipment, and
- Shortage of ICT Facilities and ICT Skills.

## 7. CONCLUSION:

It is found that, an application of ICT to provision of library services is a crucial effort towards overall development. Therefore, for libraries to remain agents that will facilitate sustainable development, efforts must be made to provide the right information at the right time. With the ICT in place, the objectives of libraries will not only be achieved but it will also help libraries to compete with their counterparts in the developed world. Organizations, institutions including the library must be supported and encouraged to embrace and utilize ICT for efficient and effective delivery of service. Hence, it is concluded that, ICT tools and devices with the proper training to the library professional is essential for the overall development of academic libraries.

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