# Development of Information Communication Technology and its services in Academic Libraries

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**Abstract: -** The purpose of this paper is to highlight the various technologies used in academic libraries and to improve of its functionality and development, as well as to place it into the broader context of existing technologies that we can corporate it into our universities, college library and services. It also discussed innovative technological development. However, the role of information communication technology is no doubt going through a clear transformation in the 21st century.

**Keywords: -** Information communication technology (ICT), Innovative Technology

**Introduction: -** Library is growing organism dealing with accommodating changes in technology, collections and services. Information is the key factor of any kind of research and development. Information is a fundamental resource which is essential for survival in today's competitive and wired world. It is vital ingredient for socio-economic and cultural development of any nation or individual. The development of information communication technology application and its techniques are being used by the libraries for information processing, storage, communication, and dissemination of information, automation etc. further origin of the intranet and development of World Wide Web revolutionized the information communication technology. Recognizing the advantages application of information technology, the libraries are essential to provide the facilities to their user community. Technological change is becoming a group of technologies. The adaption of any new technology requires the presence of an infrastructure with which it acquires, learn and successfully apply the technology. This included sufficiently available human resources, well developed telecommunication networks, research and development capabilities and capital for investment. Library is the main information centre which can make use of the fast development of information technology for the benefits of users. The librarian's preference of information technology should include all those technologies which are expected to be used in the library operations and other library services. Library can be established without walls, without boundaries and its users can access the library collections from anywhere at any time with help of information communication technologies and functioning the library as a modern library.

## Objectives of the study

- To Study the various innovative communication technology in academic libraries.

- To study the various services adopted in academic libraries.

**Methodology**

It is possible to study information need of a user via instruments of information technology. This is reflects the development of various technologies adopted in academic libraries. This study is based on the review of secondary literature, which includes books, journals; conference papers and relevant literature were also collected.

### 1. Information Need

Information Need the Librarian's Thesaurus defines information need as "that need which

Library services or materials are intended to satisfy"[6].
Maurice B.Line has defined information need as, "what an individual ought to have for his work, his research, his edification, his recreation etc"[7].

### 2. Information Technology

i)  According to the Webster's new encyclopedia, "Information Technology is the collective term for various technologies involved in the processing and transmission of Information they include computing telecommunication and microelectronics"[7].

ii) According to ALA Glossary "Information Technology as the application of computers and technologies to the acquisition, organization, storage, retrieval and dissemination of information"[8].

iii) According to the British Department of Industry, it defines Information Technology as "The acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information by microelectronics based combination of computing and telecommunication" [9].

### 3. Various Information Communication Technology Development

a)  Computer Technology :- The dramatic development in the information transmission process in every field of human endeavor has been made by the widespread use of computer technology that can further be divided into following categories

1.1 **Artificial Intelligence: -** Artificial intelligence is a group of related technologies that attempts to develop machines to emulate human like qualities, such as, learning, reasoning, communicating, seeing and hearing.

1.2 **Software technology: -** Software consists of the step-by-step instructions that tell the computer what to do. Many software packages for various applications in the field of library and information services and management are commercially available.

1.3 **CD-ROM technology: -** CD-ROM is an acronym that stands for Compact Disc Read only Memory. It is an optical disc of 120mm diameter and a hole of 15mm at

the center with thickness 1.2mm. Data is recorded in digital form using laser beam. CD-ROM is used to hold prerecorded text, graphics and sound.

1.4 **Communication technologies:** Communication or telecommunication technologies are used to transmit information in the form of signals between remote locations, using electrical or electromagnetic media as carriers of signals, communication technologies.

1.5 **Audio-visual technology:-** AV technologies are those b which things can be understood by listening as well as seeing. There are various technologies comes under these audio-visual technology which are motion picture,videodisc,videotext, teletext, telephone , cell phone or mobile phone, fax, e-mail, voice mail.

1.6 **Internet:** Technically the internet is a junction of a number of hardware and software resources or equipments to construct the infrastructure and to perform multiple functions. It is treated as a virtual library where world's information resources are gathered for the use of the clientele. It has broken down the distance barrier in communication. It has greatly influenced the practice of librarianship. Access to information through Internet has changed the total scenario of librarianship.

1.7 **Network Technology: -** The important function of network is to interconnect computers and other communication devices so that data can be transferred from one location to another instantly. Generally computer network is of following two types  WAN (wide Area Network)  is a communication network that covers wide geographic area such as country, or state and LAN is a communication network that covers limited geographic area such as campus, or building.

1.8 **The bleeding Edge:** Facial recognition is coming of age: - Facial acknowledgment is a kind of complex biometric innovation that photos individuals and afterward utilities factual estimations to decide their personality in a split second. Libraries could think about this innovation as an instrument to rearrange access to structures, assets and administrations.

1.9 **Robots: -** Libraries have been significant in the new period. Library has a great deal of work. That is the reason there are numerous libraries now that have just executed some sort of mechanization. There are various libraries who have as of now effectively executed some sort of computerized innovation.

1.10 **Digital narrating: -** Libraries have consistently had a composed word, regardless of whether on paper, Microfilm, CDROM or website page.

1.11 **Cloud printing, replicating and examining technology: -** The computerized time has been legitimately influencing home printing. Individuals never again need to print pages in huge amounts. Cloud printing has become commonplace in libraries because it gives users the ability to utilize their smart phones, tablets and laptops to print.

1.12 **Sensors :-** Library will utilize the sensors to evaluate the movements like infrared, Wi-Fi, Bluetooth, Acoustics,microphones,speakers, light measurements, brightness and colour,climate, temperature, humidity, particles, anemometer air voice, should be used the modern technology

1.13 **RFID security and Transaction:** - Radio-frequency identification (RFID) uses electromagnetic fields to automatically identify and track tags attached to library materials ie.books, journals, cd/dvds etc., the tags contain electronically stored information. Using RFID technology, circulation tractions will be simplified, automated and even without help of a library staff. Searching of library materials will be easy and time saving.

1.14 **Finger Print Identification and Security:** - Many time users are forgetting their library membership/Identity cards. To solve the above problems, finger print is the latest technology to recognize the right user/member to use and access the library collection.

4. **ICT based user Services:-**

Some library users are adopting electronic habits, making increasing use of the new ICT including computers, the Internet, the web, Intranet, Extranet and other technologies. As a result library users are placing new demands on their libraries. They require access to the latest information, updated information resources and access t of ICT facilities that they could use in their work. Use of ICT in academic libraries enhances user's satisfaction. It provides numerous benefits to library users.

➢ Provide speedy and easy access to information
➢ Provides remote access to users
➢ Provides round the clock access to users
➢ Provides access to unlimited information from different sources
➢ Provides information flexibility to be used by any individual according to his/her requirements
➢ Provides increased flexibility
➢ Facilities the reforming and combining of data from different sources
➢ Provision of web access to OPACs
➢ Electronic document delivery
➢ Networked information to users' desktops
➢ Online instructions
➢ Online readers advisory services

**Web access to OPACs: -** Libraries are providing access to web-based online public access catalogue (OPAC) interfaces. This is making it easier for OPAC users to learn how to use one universal access client, the web browser.

**Electronic Document delivery: -** Libraries are implementing ICT based interlibrary lending system using electronic networks to deliver copies of journal articles and other documents in digital format.

**Networked Information Resources: -** Libraries are providing their users with access to networked information resources i.e. Databases, electronic scholarly journals, encyclopedias, public government information etc, provided by various publishers or suppliers.

**Information delivery to users: -** Library and information users are now getting access to electronic information resources from the computer desktops in the computer laboratories, Internet cafes, offices and even at home. This is resulting in librarians and other information to users' desktop computer environment irrespective of their geographical location.

**Online instructions:** Libraries are also implementing online based bibliographic or library use programmers. These include online tutorials on searching online resources and virtual tours of library collections.

**Online reader's advisory services:** - Libraries are implementing web-based versions of reader's advisory services and reference services. These include services such as informing users via the web about new acquisitions, providing reviews and recommendations, providing facilities for readers to interact with the reference staff etc.

**Conclusion:-**Academic libraries ICT based services; the information professionals handle various types of activities in relation to the use of computers and other new information technologies. Information itself and way it is accessed have undergone changes owing to the developments in information communication technology. Information technology application and techniques are being used by the libraries for information processing, storage, communication, dissemination of Information. Utilization Technology in present libraries is optimistic to gain right information at the right time in the right place and the right cost.Implimentation of new technology in academic libraries is need of hour for giving best services to users.

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