
Impact of ICT on College Librarian and Library Services in Changing Environment

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Abstract

A library plays an important role in the academic institution providing access to world-class information resources and services and stimulates academic research in the country. Hence, the success of any educational institution depends upon its library, as library services are fundamental, which affect the whole educational system. National Knowledge Commission report mentions that libraries play a pivotal role in the dissemination of knowledge. They are an extremely important element of the foundation of a knowledge economy. Higher educational libraries are experiencing a massive change in the way they function (National Knowledge Commission Report, 2006-2009). University libraries being part of higher education are no exception. University libraries support learning, teaching, research and other educational functions appropriate to their parent institutions

Keywords

Concept of ICT, Electronic Information Environment, ICT impact on Academic Libraries, ICT impact on College Library Environment, Changing role of Librarians, College Library and Services.

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1. Introduction:

The library is an important component of any educational institution or college or university, which is the hub of the teaching, learning and research activities where students, researcher, and teachers can explore the vast resources of information. In the traditional libraries, users have to spend more time searching a small piece of information and for that have to depend mainly on the LIS professional or library staff. But in the age of information communication technology, Internet and computers are being used for day-to-day housekeeping activity of the library which saves the time of the end users, and LIS professional also and at the same time avoid duplication of work and make the library service smooth and effective.

Information and Communication Technology (ICT) have changed the library and information services globally. Digital media has revolutionized the information society and advances in ICT have dramatically changed the information provisions. The internet has provided universal access to information. Technological innovation has changed the rate of conversion of knowledge, information, and data into electronic or digital format. Development in the software has generated powerful knowledge management software which has transformed the way; knowledge is organized, stored, accessed and retrieved.

2. Concept and Meaning of Information and Communication Technology (ICT):

Information and Communication Technologies (ICTs) are often associated with the most sophisticated and expensive computer-based technologies. ICTs are basically information-handling tools- a varied set of goods, applications and services that are used to produce, store, process, distribute and exchange information. ICT-Information and Communication Technology is a varied collection technological gear and resources which are made use of to communicate. They make use of to generate, distribute, collect & administer information. According to Anyakoha (1991), information technology is “the use of manmade tools for the collection, generation, communication, recording, re-management and exploitation of information. It includes those applications and commodities, by which information is transferred, recorded, edited, stored, manipulated or

disseminated". ICT is a mean that has changed many aspects of the way we live. Hawkrige (1983) describes information technology as a revolution which has penetrated almost all fields of human activity, thus transforming economic and social life. The ICT is made of computer and communication technology. The computer technology is the tool for storing and processing information in digital form while communication technology helps us to transfer and disseminate digital information. Additionally ICT means a variety of technological applications in the process and communication of information. The word ICT is a combination of two words information, communication & technology. Information means knowledge and technology means the use of computer & communication. The term ICT can be defined as "the integration of computing, networking and information processing technologies and their applications". Information Communications Technologies (ICT) – technologies that enable society to create, collect, consolidate, communicate, manage and process information in multimedia and various digital formats for different purposes i.e. computing and telecommunications technologies like the personal computer, CD-ROM, cable TV, cellular phones and the Internet.

3. Definition of ICT:

Today, the definition of information and Communication Technology (ICT) is much broader, encompassing nearly every type of business. From manufacturers, retailers, banks, and publishers to research firms, medical institutions, law enforcement agencies, government companies and library everywhere rely on Information and Communication Technology workers to run their daily businesses. According to the Encyclopedia of Computer Science, "Information Communication Technology (ICT) is an imprecise term frequently applied to broad areas of activities and technologies associated with the use of computers and communications". According to Mahaptra and Ramesh, ICT, as "Information Communication Technology is the result of the technological convergence of existing single isolated technologies viz, computer technology, communication technology, information processing, publishing technology etc." According to UNESCO, "ICT is a scientific, technological and engineering discipline and management techniques used in handling information and application and association with social, economic and cultural matters". According to

the European Commission, the importance of ICT's lies less in the technology itself than in its ability to create greater access to information and communication in underserved populations. Many countries around the world have established organizations for the promotion of ICT's because it is feared that unless less technologically advanced areas have a chance to catch up, the increasing technological advances in developed nations will only serve to exacerbate the already-existing economic gap between technological "have" and "have not" areas. Internationally, the United Nations actively promotes ICT for Development, as a means of bridging the digital divide. Ayodele (2002) defined ICT as, "electronic-based technology generally used to retrieve store, process and package information as well as provide access to knowledge". Aluko (2004) also described ICT as, "enabling technologies (both hardware and software) necessary for the delivery of voice/audio, data (high speed and low speed) video, fax and internet services from point A to point B (or possibly to multiply B C etc) using wired and wireless media protocol (IP) and non IP networks". Nwachukwu (2004) information and communication technologies (ICTs) is the application of computers and other technologies to the acquisition, organization, storage, retrieval, and dissemination of information. However, in this context, information and communication technology is the use of electronic devices such as computers, telephones, internet, and satellite system, to store, retrieve and disseminate information in the form of data, text image and others.

4. Electronic Information Environment:

Libraries for centuries have been supporting teaching, learning, research and other academic activities of the universities and R & D Institutes. But with the emergence of the digital age, many countries and their university libraries started functioning on Information and Communication Technologies (ICTs) (Byamugisha, 2010). The ICT tools enabled products and services and the availability of online information resources have changed the way the services academic institutions and libraries now provide to their users. ICT is the integration of computer and communication technology which is used to select, acquire, process, store and disseminate the information. It has changed the traditional practices of library and information centers in the delivery of services to the end users (Ahmad & Fatima, 2009). With the

adoption of ICT applications/tools in Indian universities, access and use of information are now done electronically by the users. Thus, ICT is supporting and helping libraries to overcome the barriers of time and space and it also reduces the time lag between the generation of the Information and its use (Walmiki&Ramakrishnegowda, 2009). As a result, there has been a shift from information environment to an electronic information environment in Indian universities. The main feature of the electronic information environment is the pervasiveness in accessibility and utilization of electronic resources by the users. Library in digital environment basically is a computer-based system for acquiring, storing, organizing, searching and distributing digital materials for the user to access. In the digital environment, users wish to use Electronic Information Resources. Meanwhile, it is difficult to identify what information exists, in what format it is available and from where one can get the same (Varalakshimi, 2004). But, with the computerized library services, CD-ROM/online databases, the Internet, Intranet/campus networks and digital libraries, there is relative ease of accessibility and utilization of information by the users. Thus, the emergence of electronic information environment has removed all the barriers of information access typically associated with distance and time, both within and outside the university environment.

5. ICT impact on Academic Libraries in Changing Environment:

In the present age of information explosion, the growth rate of information and knowledge is faster than ever before and still accelerating. Information is a dynamic and unending resource that affects all disciplines of human life. Hence, it has been supporting education, research, and developments (Satyanarayana, 2002). Libraries have always been the source of information and knowledge and they have been fulfilling the information needs of the users for centuries in the traditional way. But the last two decades have brought revolutionary changes in the library services. ICTs have had a profound impact on the way information is gathered, stored, organized, accessed, retrieved and consumed. The application of computers in information processing and communication has brought several products and services to the scene (Egberongbe, 2011). The technology revolution has literally shrunk the whole World in-to a global village.

Meanwhile, the information needs of users have also changed. In traditional libraries, users had to spend more time for searching a small piece of information and for that they had to rely on library staff. But in the present age of ICT, computers are being used for day to day housekeeping activities of the library. Therefore, libraries are trying to meet the information needs of modern users by making available a wide variety of EIRs for their users. EIRs play a dominant role in each and every field of modern society; hence they have been treated as a clutch of modern technologies, which cover CD-ROM, online and offline database, videotext/Teletext, motion pictures, e-mail, e-books, e-journals, etc. The Electronic Information Resources (EIRs) hold many advantages such as time and place convenience, timeliness, ability to search directly, link to further sources, ability to disseminate information. The use of EIRs for the academic purpose would improve academic efficiency and increase technological skills and reduce anxiety while conducting research and learning (Nyamboga C, et al. 2014). From the library's point of view, electronic formats offer the convenience of storage, maintenance, and cost advantage.

Information as the key resource in the 21st Century plays a major role in marking the difference between the developed and the developing countries/ societies in the World. The application(s) of modern Information and Communication Technology (ICT) tools have driven an all-around change in information resources of the libraries all over the World. As far as academic libraries are concerned, the well-established library is very essential to support teaching, learning, and research. But at the present age of digital technology, academic libraries are struggling to keep their place as the main source of inquiry (Anunobi&Okoye, 2008). Meanwhile, the massive increasing growth rate of online information sources, as well as the utmost need for instant access to the latest information is very much important for anyone at present. The online resources are becoming more accessible. Hence, many academic libraries no longer restrict themselves to print resources and services, but they have extended their efforts to interdisciplinary concepts and ICT. Campbell (2006:17) observed that, "numerous creative and useful services have evolved within academic libraries in the digital age: providing quality learning spaces, creating metadata, offering virtual reference services, teaching information literacy,

choosing resources and managing resource licenses, collecting and digitizing archival materials, and maintaining digital repositories”.

In the present context of the information revolution, information becomes obsolete soon and it no longer remains useful. Meanwhile, information needs of modern users have also changed. They cannot wait for a long to get their required information. The users are always expecting the authentic, accurate and pinpointed information in a single click. These developments have posed new challenges before libraries to improve their level of services by adopting modern ICT tools. As a result, many academic libraries in the world are using ICT tools to automate a wide range of administrative and technical processes and provide better services to their clientele. With the help of these ICT tools many advanced, different services have been introduced by the academic libraries. The ICT tools are being used in housekeeping operations like acquisition, cataloguing, circulation control, serials control, etc. of an academic library setup and they have tremendously changed the management of information resources or housekeeping operations of the library. Therefore, many terminologies related to the traditional library have also changed such as a library to library portal, card catalogue to Online Public Access (OPAC), Print to electronic resources, etc.

6. Necessity of ICT in the College Libraries:

After the Second World War, a huge amount of information in the form of books and other printed material has been produced, which has resulted in an exponential growth of information. There is now information pollution instead of information explosion. The libraries have found it very difficult to acquire, arrange and disseminate the information in traditional ways. So libraries are compelled to plan, organize and communicate the huge information according to the needs of users with the help of information and communication technology (ICT) the information is no longer confined to books and document in the custody of individual or educational institutions, now it has embraced audio-visual, digital, multimedia with colour motion and three dimensions features etc. Application of modern technology viz computer and communication are bringing all these to the doorstep of the people. There are various electronics/digital/computer-based information which is available for the libraries like online and

offline resources e-journals, e-books, e-databases, compact disk (CDs/DVDs), and the Internet and due to this development in current scenario application of information and communication technology (ICT) seems must for libraries. Creation of databases is the foremost step in the application of ICT in libraries. For creation of the databases, library has to suitable software package, keeping in mind the day to day activities of libraries viz, acquisition, cataloguing, circulation, serials control, OPAC, administration, indexing, abstracting, e-book, e-journals, e-databases, current activities services (CAS) and selective dissemination of information (SDI) etc. to cope up with the current technological development and fulfilling the thirst of the users.

The various factors which have contributed the application/use of ICT in libraries are:

1. Rapid growth in the information output and its usage has made it impossible to store and organize information using conventional methods. Now a day's most of the information or documents are available in machine-readable format, therefore, the application of ICT is necessary.
2. It is no longer possible for any library to collect all the published information or documents. So with the help of ICT, resource sharing can be done easily.
3. By using modern information and communication technology (ICT) in the libraries, the efficiency of the staff can be increased and better-advanced services may be provided to the to the user's
4. Implementation of barcodes and RFID based services; libraries can satisfy maximum no of users in the very short span of time.
5. Due to information, a literature search using manual methods is a difficult, tedious and time-consuming job whereas computerized storage and retrieval of information make it faster and efficient.
6. Now in libraries, it is very difficult to provide, interlibrary loan, translation, anticipatory services, including preparation and annotated lists, abstract, bulletin board, news summaries, employment alert, and other information retrieval services manually. Whereas with the help of ICT above mentioned library services can be provided in very less time.

7. ICT Impact on Academic Library Environment:

Academic libraries are those libraries established, owned and funded by universities which they are part. They are often referred to as university libraries. Academic libraries also involve colleges

and polytechnics libraries as an integral part of the institutions, which they serve. They design their collections and services to meet the instructional programme of the institutions. For years, academic libraries have been acquiring, processing, circulating and preserving information materials in all media, although emphasis has been on paper-based materials such as books and journals. Introduction of information and communication technology in libraries has improved and changed the face of information acquisition, processing, dissemination, and storage. Information is being acquired both in paper and electronic formats and libraries are able to convert some of their old collections to machine-readable format. Information and communication technology has also facilitated networking, creation and accessing of the remote electronic database, putting at the disposal of libraries and library users a wide network is slowly transforming libraries from book-centered to information-centered institutions. ICT provided an opportunity to implement electronic networks and achieve the provision of access to remote computerized information services products much easier than before. Libraries are taking advantage of the facilities available on the Internet and integrating them into their daily operations. Libraries which were considered only as the storehouses of knowledge have got a new outlook in the modern Information Communication Technology (ICT) era. The activities which were carried out manually in libraries with so much pain and strain are being carried out smoothly with the help of ICT with greater effectiveness.

Impact on Library Collection: Library collection goes beyond the print materials and includes the CDs/DVDs, audio & video cassettes, e-books e-journals and e-databases. The traditional paper as a medium of storage is getting replaced with electronic media. In India, many national and international origin library management software (i.e., Ventura, LibSys, E-Granthalaya, Library Manager, SOUL etc. commercial software and Koha, NewGenLib etc. Open Source Software) are available for library automation. In India, UGC-INFONET, DELNET, and INDEST etc. consortiums are in action. Internet technology provides a wide scope for communication and information search across the globe.

Impact on Library Staff: Information and communication technology has changed the duties, responsibility, and functions of the library

professionals. The changing environment forces the librarian to become ICT skilled, dynamic, ready to accept the changes and challenges and outfit the requirements of library users, because, without change, management library could not be survived.

Impact on Library Users: Library users can remote access the worldwide information through their desktops without any time and distance limitations (24 x 7 x 365 days). Current users need to possess basic technical skills to access the information in electronic media. In the age of technology, users have multiple sources of information such as the Internet, commercial and non-commercial information service providers. As a result, the library is not the only source of information provided for users.

8. Impact of ICT on College Library Users:

It is established fact that information and communication technology (ICT) has brought the revolution in the field of library and information science, as we have already mentioned that all library house-keeping activities like acquisition, procurement, processing, organization and dissemination of information services are based on computer, communication, reprographic and digital technologies, which has facilitated the following ICT based library services being provided to the users more effectively, those are:

1. Reference Service
2. Bibliographic Service
3. Referral Service
4. New Arrivals alert service
5. Online reservation service
6. Online Public Access Catalogue- OPAC
7. Current Awareness Service (CAS)
8. Document Delivery Service (DDS)
9. Selective Dissemination of information (SDI)
10. Barcode / RFID Based Service
11. E-Employment Alert Service
12. E-Book Service
13. E-Journals & Magazine Service
14. E-Databases Service
15. E-Newspapers Service
16. E-Project/Report/Thesis Service
17. User Orientation Program
18. In-House Personal Training
19. Resources sharing and other services.

Such facilities, being extended to the academicians, researchers and library users to find their required information without any barriers, are possible only

because of information and communication technology (ICT) use in library and information centers or libraries.

9. ICT impact on the Librarian/ LIS Professionals:

The computer and IT has brought in a new impact on the library services and information usage. In libraries, ICT has assisted library and information science professionals to provide value-added services and give more remote access to available information resources. Information and communication technologies provide faster retrieval of stored information and reform our traditional library to a modern library. Recent ICT is impacting on various facets of libraries and the information profession. Advancements in ICT and the widespread use of ICT are resulting in digital information sources and digital media replacing and becoming the dominant form of information storage and retrieval. Information and communication technology also survives and makes true rules of Library Science "Every reader his/her book/information", "Save the time of the reader", "Library is a growing organism". Information and communication technology with its great information sources, fast transmission speed, and easy access guarantees the satisfaction of the user with multifaceted demand, overcome the distance barrier and reduced the time required and guarantee the right information to the right reader at the right time. It also rises and resolves the library's demand for collection development. It is really an outstanding tool for information centers or libraries. ICT has created complex challenges for Librarian or LIS professional they have to redesign their positions to meet evolving needs. Librarians or LIS Professionals have to manage the change by adopting the latest ICT, thereby improving performance. They need to improve the skills and knowledge of new information and communication technologies to provide quality library services.

10. Conclusion:

A library plays an important role in the academic institution providing access to world-class information resources and services and stimulates academic research in the country. Hence, the success of any educational institution depends upon its library, as library services are fundamental, which affect the whole educational system. National Knowledge Commission report mentions that

libraries play a pivotal role in the dissemination of knowledge. They are an extremely important element of the foundation of a knowledge economy. Higher educational libraries are experiencing a massive change in the way they function (National Knowledge Commission Report, 2006-2009). University libraries being part of higher education are no exception. University libraries support learning, teaching, research and other educational functions appropriate to their parent institutions. The special collections cater to the needs, not only for teaching and learning but also for research, publication, conservation of ideas and knowledge. The new technologies especially electronic technologies have contributed to the radical changes in LIS and practice.

The last few decades are the witnessed the increasing impact and use of Information Communication Technology for the functions & services of the library. Information Communication Technology has become an integral part of all the aspects of the library. A good and proper implementation of ICT's in library results into better resource sharing and more effective services to the users. Libraries are expected to use ICT to provide information more quickly. The 4th law of library and information science "Save the time of reader/staff" has great relevance in the context of use of ICT. Considering the increased impact of ICT on libraries, UGC, AICTE, NAAC, and NBA also developed the norms for the use of ICT in the institute, college or university libraries.

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