

## Libraries in the Era of ICT: An Overall Transformation

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### ABSTRACT

*This paper concentrates on the impact of Information and Communication Technology (ICT) on libraries. Here, an attempt has been made to explore how ICT has transformed the traditional concept of libraries from a store house of books to an intellectual information dissemination centre. An endeavor has been made to establish the needs that lead to the necessity for implementation of ICT in libraries. Subsequently, the challenges that a library has to face while implementing the ICT, are also discussed in details.*

**Key words:** Impact of ICT on libraries, Role of ICT in transformation of libraries.

### Introduction

Science has bestowed many gifts on mankind but perhaps, the Information and Communication Technology (ICT) is one of the most magnificent gifts that has changed our lives entirely. ICT has brought change to each and every facet of our lives in the modern era and of course, Libraries are not an exception. It has provided Libraries with new opportunities to improve their resources and range of services, which is almost impossible to provide otherwise manually. The impact of ICT has been so tremendous that it has transformed the traditional concept of libraries from a store house of books to an intellectual information dissemination centre. Due to ICT, the libraries have ushered in a new phase where libraries have become capable of catering information to its users overcoming the barriers of geography. It has tremendous impact on every library operation, resources, services, staff and users.

### Concept of the Information and Communication Technology (ICT)

It appears pertinent here to underpin our understanding with the concept of ICT. ICT incorporates a range of technologies that provide access to information through telecommunications. It is similar to Information Technology (IT), but focuses primarily on communication technologies. This includes communication networks and applications. Networks include fixed, wireless or satellite telecommunication and broadcasting networks. On the other hand, its well-known applications are the Internet, DBMS, Information Storage and Retrieval Systems and multimedia tools.

The ICT sector is a heterogeneous collection of industry and services activities including information technology equipment and services, telecommunication equipments and services, media and broadcast, Internet service provisions, libraries, commercial information providers, networked based information services and related professionalized services (Marcelle 1998).

### Characteristics of a Traditional Library

Before we move further, let us take an over view of the characteristics of a traditional library in order to answer of a straight forward question that why should we apply ICT in any library at all:

- The collection and no. of its users constantly increase leading to a regular requirement of increasing the staff and storage space of a library.
- The library staff has to perform all the operations/house-keeping jobs manually leading to delay in service and wastage of manpower.
- The staff commits mistakes while performing the operations.
- Traditional libraries are not capable to cope up the information explosion.

### Role of ICT in order to make Traditional Libraries to Modern Library

There is hardly any function or activity of a modern library that ICT has left untouched. Actually, it is ICT only that has transformed the traditional libraries into a modern Library. ICT has become the sole of modern library of any kind. An effort is made to highlight a few of the major roles that ICT plays in a library, mentioned as under:

**Storage Capacity:** The storage capacity of computers is so high that the entire information of a library can be stored in a computer, leading to permanent solution of space in libraries.

**Speed and Accuracy:** All the library operations can be performed by computers very speedily and without any error.

**Information Explosion:** ICT is the only solution to this problem as any information generated at any corner of the entire world can be provided to the user within seconds though internet. Physical availability of any document is no mar a condition to obtain any information in a library.

**Services:** ICT has enabled the libraries to provide so many innovative services that have become integral part of any library system, such as:

- Provide tailor made information to the users.
- Round the clock access to the information.
- Information Repackaging.
- CAS and SDI
- Web-based OPAC.
- Electronic Document Delivery.
- Automated Circulation through Bar Codes.
- Automatic Circulation through RFID.
- Social Networking Services.
- Multimedia.
- Hypermedia and Hyper cards.
- Institutional Repositories
- Reprographic services.
- On line instructions and readers advisory service
- On line Reference Services or Virtual Help Desk.
- Data Base Services.
- Library Networks and Consortia.

- Automated indexing and Abstracting.
- Bibliographic Listing.
- Managerial Reports and statistics.
- Library Accountings and Budgeting.

### **Stages of use of ICT in Libraries**

Borgman states that since 1950, use of ICT in libraries has basically gone through four stages, corresponding to the reasons of automation:

- Improving the efficiency of internal operations.
- Improving access to local library resources
- Providing access to resources outside the library
- Interoperability of information systems.

### **Impact of ICT on Libraries**

ICT has enable libraries to provide such services that otherwise could have not been possible manually. In libraries, information technology has assisted library professionals to provide quality information services and give more remote access to the internationally available information resources (Saraf, V.,1998). Now, libraries have become capable of storage of huge data and its easy retrieval as and when desired. Libraries are now offering very sophisticated services to users round the clock crossing the geographical limits.

This paradigm change has fully transformed the image of libraries as libraries are no longer considered building used for conserving the books but libraries have not become information centers accessible anywhere at any time. ICT has empowered the libraries to implement the 'Laws of Library Science' in true sense.

Senthilkumar, M. has tried to highlight this shift of Libraries because of ICT as under:

- Traditional libraries to digital libraries,
- Print on paper to digital information,
- Card catalogs to Web OPACs,
- Chains to RFID tags,
- Print journals to online or electronic journals,
- Ownership to access,
- In library access to remote and desktop access.
- Information availability at libraries –
- 9 a.m. – 5 p.m. to 24X7.
- Photocopies to digital copies,
- DDS being provided through E-mail instead of post or fax.
- standalone libraries to Information networks
- Real to virtual libraries.

In addition to above, the following changes can also be identified:

- Typing data to scanning data.
- Shelving documents to maintaining digital documents.
- Manual circulation to RFID based automatic circulation.
- Browsing information on shelves to searching databases online.
- Printed text to hyper text.

- Catalogue cabinet to OPAC.

### **Challenges for ICT enabled libraries**

Senthilkumar, M. has pointed out the following challenges for the ICT enabled libraries:

- Resource Management – Providing information from different resources (print, e-resources and online resources), Resource usage evaluation and measuring the impact of usage of the resources (Research output).
- Providing information about Open Access resources and educating the users about Open Access.
- Building Institutional Repositories
- Providing seamless integration to different databases, electronic and online resources.
- Knowledge of Intellectual Property Rights

Further, the following can also pose challenge to an ICT based libraries:

- Requirement of high funds on regular succession to implement/install and maintain the ICT devices and softwares.
- ICT advances too frequently – a technology discovered a dawn becomes obsolete at dusk. Hence, continuous up-dation of ICT means is required leading to a regular expense which becomes very tough for institutions like libraries that are in scarcity of funds always.
- High expectations of users: As the libraries are advancing in terms of new services the expectations of the users' are ever increasing day by day. Therefore, the ICT becomes the mainstay of libraries in order to cope up with ever increasing expectations and enhance users' satisfaction.
- Requirement of tech savvy library staff so that the ICT enabled library can be fully exploited and further furnished with new innovative services.
- Regular training of library staff to cope up with the frequently upgrading ICT devices and softwares.
- Frequently changing role of libraries leading to enormous pressure on it to update and renovate its services accordingly.
- Essential requirement for users' education on use of ICT based library which put extra load on the libraries.

All the ICT based libraries are bound to face many of the above challenges. However, when these challenges are taken in a generous manner, keeping the users' interest in the foremost position, these challenges become opportunities for libraries of grow and flourish.

### **Role of Librarian**

The role of librarian in the digital era has been appropriately defined by Senthilkumar, M. as under:

- Negotiator – a person who should be able to identify the needs of users
- Navigator - Searching the ocean of information regardless the format
- Facilitator – Information and Infrastructure
- Educator - being familiar with information in different formats and should be able to train the users whenever required
- Entrepreneur - Marketing Library Services

- Information filter – Able to provide right information, in right time to the right person from right resources.

### **Requirement of technical skills for Librarians**

Library professionals are confronting challenging dynamic technological environment demanding the extensive and effective utilization of ICT in order to survive and meet the changing complex information needs of the user community. In addition to the traditional library and information management skills, librarians now need to possess additional skills and expertise, more so in the use of modern information and communication technologies, automated information services, electronic publication, digital information management and knowledge management. The information professionals should acquire technological system thinking, commitment to continuous improvement of skills and strategies and sensitivity to network environment.

Undoubtedly, the ICT based libraries are transforming very frequently. Therefore, the modern information professionals can contribute to the further development of ICT only if they update themselves too frequently and generate a superior knowledge base.

### **Conclusion**

The incredibly fast progress in information and communication technologies are rapidly transforming the information handling and seeking habits of both librarians and users. Perhaps, this is the most exciting period in the human race when world's most population is shifting from 'techno-illiterate' to techno-literate'. During this revolutionary period, libraries have also transformed and adopted the ICT to develop itself. This implementation has totally changed the concept of libraries and its services.

However, continuous efforts are essentially required to implement and update the ICT devices and softwares, only then the libraries will flourish and will become capable to satisfy the users' expectations. Subsequently, the library professional should also develop tech savvy brains and update themselves regularly in order to gain a superior knowledge base.

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