

Emerging Technologies and their Impact on the Libraries

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Abstract

Objectives: Applications of new technologies in different areas of libraries, Changes in library system with the emergence of new technologies, Areas where new technologies applied, Problems in implementing new technologies. **Methods/Statistical Analysis:** For the present study review of literature, personal observation as well as interview method is adopted. Visited some libraries in the near about areas and observe them and talk with their officials. **Findings:** Modern libraries are very rapidly adapted to the new technologies. With the help of web technologies, these can be access from anywhere, any time. Even then these advancements libraries are not properly working and adopting to it, because of many problems like money, unskilled library staff etc. There are very few libraries in Punjab which are fully automated even today. **Application/Improvements:** New technologies have come in the field of library science and are implementing in the different sections of the libraries. But due to some problems these technologies are not properly applied in all the libraries.

Keywords: Emerging Technologies, Networking of Libraries, ICT, RFID, Web OPAC

1. Introduction

The rapid growth of ICT (Information and Communication Technology) has put a great impact on libraries. With the effect of it the people have changed the way of think, behave, communicate and work. ICT and globalization has changed the libraries from traditional to digital libraries in which every work is done by computer. So, working of library has totally changed from service oriented to user oriented, in which libraries are maintained according to the need of user. New technologies have been merged in the library science. So, libraries have been changed to Digital Libraries, Virtual Libraries, Hybrid Libraries, Library without Walls, Library 2.0 etc. Even the working and designation of librarians have also been changed to Information Officer, Information Scientist, Documentation Officer etc. We can see that the libraries have come to our doorsteps. We can use libraries at any time according to our convenience. Due to the new

techniques many new trends can be seen in the field of libraries that are as follow:

With these new trends the libraries shave changed from:
Printed collection to Web based publishing like digital collection

Reference desks have been changed to Online Reference Service Web 2.0

Closed Access changed into anytime/ any where access of material through internet libraries

Manual indexing and Bibliographies have been changed to Full Text Databases

Manual Library Catalogue changed into OPAC (Online Public Access Catalogue) / Web OPAC

Manual sharing of information changed into Networking of Libraries

Inter-Library Loan Service Changed into Electronic Delivery of Information

From the above said services we can understand the impact of globalization and IT on the libraries. We know

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that information is dynamic and unending resource that effect all disciplines and walks of life. The growth of information has brought a revolution in the field of library. Information technology has changed the every aspect of library i.e., Acquisition, Processing, Storage, Retrieval and Dissemination of information. It has also changed the way of thinking and communication of people with each other.

2. What is ICT?

It is very difficult to tell that what is ICT (Information and Communication Technology) because it is too much wide that its meaning changes day to day as there is too much growth in science and technology so with the new inventions the meaning of ICT changed according to that. In¹ ICT consists of IT as well as telecommunication, broadcast media, all types of audio and video processing and transmission and network based control and monitoring functions. Author in² found out that ICT involve storage, retrieval, manipulation, transmission or receiving of any information electronically in a digital form, e.g., television, email service, library databases etc. In late 20th century there was a great significant development in the science and technology. Author in³ ICT has greatly put the effect of all fields of economy. In the field of library verities of new software come into the market, it has totally changed the working of library. Today there are number of software available in the market which is successfully handling the housekeeping operations as well as other reference services very successfully. It was first used by IST (Indian Statistical Institute) Kolkata in 1957. But in the field of Library Science it is firstly used 1990's. ICT is the combination of two technologies first one is Information Technology which deals with the hardware and software that allow access, store, organize and manipulate the information. 2nd is communication technology which deals with the equipments, infrastructure and software through which information can be received, access, and disseminate.

UNESCO defines ICT as the techniques used in information handling and processing.

3. Emerging Technologies in the Libraries

Application of ICT gives a birth to many new technologies. With the application of these new technologies in the

libraries the working of libraries has totally been changed. Author in⁴ found out that now a days libraries are providing the unrestricted access of information in many ways and from many resources. Libraries have also started to provide the services of specialists who are expert in the fields of information and communication. Emerging technologies has affected the libraries in the following way:

3.1 Housekeeping Operations

With the application of ICT the housekeeping operations of the library has totally changed. Now many new library software has come in the market even many free of cost software is also available on the web which can be easily download and install on the computer and can be use for the library. The software can be use for library automated. Author in⁵ found out that automation has changed the working of library very convent and flexible. Now from the process of ordering of books or other material to dissemination of information make very easy. Librarians can make orders and put reminders time to time very easily, this was very time consuming process in the traditional libraries. Author in⁶ accessioning of material, serial control, circulation etc also make easy. We can also take any type of reports any time e.g., Daily Issue Report, User Login/ logout Report, Fine received Report, Member's Report etc.

3.2 Web Based Services

Modern libraries have also started the web based services to provide the more comfortable services to the library users. These services include web access of e-materials like e-books, e-journals, e-thesis etc. Users can get the user id and password from the library and can access the material on the library website by filling the user id and password. Even the users can make queries, see any notification from the librarian, and make chatting with the librarian etc on the web by using the Web2.0 services. Author in⁷ Web 2.0 has make a revolution in the field of library and made the Traditional Libraries to Library 2.0. Web 2.0 is a two way web technology in which user can read and even write any information on the web. Web 2.0 services include: Folksonomies and social tagging, Video Sharing, Photo Sharing, Instant Messaging, Social Networking, Blogs and Wikis, Scencasting, RSS Feeds, Web Mashups, Podcasting

With the help of above said services user can read and write the important information anytime and at anywhere without the constraint of time and place. These services

have challenged the working of librarians because now librarians should be very much known to these technologies otherwise they can provide the latest services to the users.

3.3 Intelligent Return and Sorter System

In conventional Library System the entire library functions such as check in/ check out of items and shelving of items is done manually. This is time consuming task and also misplacement of books and other items is quite common. With the automation, all these problems can be avoided. There is an Intelligent Return and Sorter System which is used in libraries for automating their check-in and sorting process⁸. Users can quickly self return their issued items with “real-time check-in”. Users can be assured that items have been returned by receiving return slips from the machine. These systems are designed specifically for libraries with limited space. The technology utilized by the sorter for directing items into the bins reducing damage to items. It is easy to use and can also perform administrative tasks such as configuring receipts, generating statistics and system diagnostics. The Intelligent Return and Sorter System help in decreasing the time, helping to increase staff productivity while enhancing user satisfaction.

3.4 Web OPAC

Web OPAC (Online Public Access Catalogue) has also changed the working of libraries to much extend. Now with the help of Web OPAC users can check the availability of any library material on the Web without leaving the place. Web OPAC is a catalogue of library material which tells us that the required material is availability or not. Users can fill the Username and Password on the Library Web site and can use the OPAC.

3.5 Networking of Libraries

ICT has made possible of networking of libraries within the country or even throughout the world. Networking of libraries has increased the services of libraries for the users. With the help of networking, users can use the material of other libraries with whom the present library is connected⁹. With the help of it libraries’ Inter Library Loan Service, Resource Sharing, etc make easy and convenient. Networked libraries can take many benefits like they can use the Union Web OPAC, Document Delivery

and Access to Digital Material etc. They can also arrange the combine Tutorials, Workshops, Lectures, and Training Programs etc. There is much professional news which can be share by the librarian. There are many more benefits of networking also like libraries can take the advantage of Library Consortia, in which libraries can make collective purchasing of library material and can avail higher discounts on bulk purchasing. So, networking of libraries also help in saving the money. here are many Indian library networks are present e.g., INFLIBNET, DELNET, CALIBNET, ADINET, SIRNET etc.

3.6 Library Security Systems

As the libraries’ collection is growing there is need to enhance security system. They are facing large number of security drawbacks which includes theft and mutilations of library materials. Most of the libraries around the world are facing the problems regarding security but due to technological advances there is a greatest shift from paper material to electronic databases. So it is possible to install electronic security systems to overcome the security threats to some extent. Current library management systems use barcode technology and security strips. Using barcodes, a library management system can keep records of lending, borrowing and shelving status of items such as books, audio or video tapes, CDs, DVDs, etc. Security strips on library items tag their movements. But barcodes and security strips are slow to read and are prone to sabotaging by thieves. All these lead to irreparable loss to a library and its valuable inventory stock. This is where RFID technology can come to the aid of library managers and users.

3.6.1 RFID (Radio Frequency Identification)

RFID (Radio Frequency Identification) is the latest wireless technology to be used in library theft detection systems. It is another form of automated identification system. Earlier EM (Electro-Mechanical) and RF (Radio Frequency) systems were used in libraries for decades but RFID-based systems move beyond security. They provide tracking systems that combine security with more efficient tracking of materials throughout the library. Besides security they provide easier and faster charge and discharge, inventorying, and materials handling. RFID in India was developed in the 1940’s for defense applications. 1st time it was used for commercial purpose in 1980 for cattle tracking applications. Recent interest is in mak-

ing RFID technology more ubiquitous in the global value chain. The first Library suppliers started to market their systems in the mid 1990's. RFID has automatically check-out, anti theft and inventory control system¹⁰. It contains two parts one is integrated circuit for storing and processing information. Another is antenna for receiving and transmitting the signals. In RFID system, RFID tags are placed on the library items when these items comes under the range of antenna without requiring a line of sight, it transfer the information to the computer system, if it is not issued then a siren is burst out¹¹. This technology is same as bar-coding system but it is very much refined and improved then bar-coding system.

4. Conclusion

This study looks at the new technologies that come in the field of library and its uses in the different libraries. I have discussed the emerging trends that have come in the library fields with the application of ICT. But these emerging technologies have given a challenge to the library professional's i.e., they should have proper knowledge of these technologies and should be well qualified so that they could use it easily. But these new technologies don't reach to the every library because one problem is the money and other problem is that the professionals are not much aware about these new trends. Library field is that type of field which is not much developed and there is a need to make a different place in the society. According to my opinion every library professional should go on training where he/she could learn something new. There should be arrangement of professional's lectures, work-

shops, seminars etc. These things can help the library profession to learn something new.

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