

Information and Communication Technology Practices in Public Sector University Libraries of Sindh Province

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Abstract

The effectiveness of library services depends on a large extent of the information and communication technology (ICT). This effective study happens to explore the gradual advancement of modern technologies in libraries science through difference of old and new technologies in the world. The study is able to identify the various elements of information and communication technology which is used or being used in libraries and information systems. However, the study identifies the exact reasons for the use of computer technologies and related libraries. It also determines opportunities, jobs, impact and challenges being faced by library management system based on information and communications technology.

Keywords: ICT, MARC, CDs, DVDs, DVD-ROM, CDS/ISIS, GENISIS, OPAC, Teleconference, Artificial Intelligence and internet.

Introduction

Information and Communication Technology (ICT) is has been holistic concept and a concept is parallel with the IT which indicates not only one unit of the technology, but assembly of technologies such as telecommunications equipment, telecommunications, and data-processing equipment, semi-conductors, consumer, electronics, etc. brought the concept of tremendous change in the collection and preservation of information and dissemination of the world scene [1]. For the library profession, this turn of events is a blessing in disguise. The advent of information technology is one of the wonderful gifts of modern science and technology that has brought tremendous changes in the field of library and information science.

Has revolutionized the application of information technology for the work of libraries and information on the world's traditional concept of electronic library. Has opened a new chapter in the history of the library, and communications to facilitate the global users to let them have access to information via crossing geographical boundaries. Using information and communication technology, libraries were observed only significant changes in operations and the services they provide daily, but also identify new and effective role for librarians. Automation or computerization is an important application of information and communication technology in libraries. It facilitates the future library, services, and information access and delivery. [2]

OBJECTIVES OF THE STUDY

This study is designed and carried out with the view to determine the following objectives:

- To study basic the basic ICT infrastructure in Libraries
- To study areas of library operation & services those are using the ICT
- To explore various components of ICT used in libraries.
- To explain the functions and the impact and challenges of library services based on information and communication technology.

MATERIAL AND METHODS:

This study is based on a literature review of primary and secondary, which includes books, magazines, documents and follow-up, operation, and CDs and DVDs, and etc. were also collected relevant literature thesis, consult browse through the Internet. [4].

COMPONENTS OF ICT IN LIBRARIES

The components of Information Technology (IT), [3,4] which are frequently used in library and information center, are as follows:

- **Hardware and Communication Technologies**
- **Software Technology**

Hardware and Communication Technologies:

- **Personal Computer:** these are desktop ,portable computers are easy to use with programs such as word processing, spread sheet and power point for presentations and demonstration.
- **Server Computers:** Server is a system, i.e. Software and computers appropriate to respond to requests through a computer network to provide or help to provide access to the network service
- **Network Technology:** The main function network technology is to interconnect computers and other communication devices so that data can be transferred from one location/computer to another computer. Computer network used in libraries are of two types, Local Area Network (LAN), and Wide Area Network (WAN).
- **Digital Camera:** Camera that stores images or video and take in electronic form rather than the movie. A digital camera is used to take pictures of the students and the title of the books pages
- **Barcode Scanner:** It is an electronic device that scans the barcode by shining a laser beam on it. Nevertheless , called readers barcode (unlike magnetic readers bar) for automatic data " non-contact " , which only work on short distances capture devices (a few inches) , and (unlike in the radio frequency identification) does not provide 'out of reading the line of sight . " It is also called " barcode scanner or fair scanner
- **Document Scanner:** Document scanner is a machine capable of copying material element and turn it into the computer's image. There are several types of these machines, including flatbed scanners and sheet-fed scanners. Using such a machine generally requires special software. In most cases, a document scanner is designed specifically to copy images or text on paper.
- **Photocopier:** Machine that makes paper documents and other visual images quickly and cheaply. Most copiers (current) and used xerography technology, it works through a dry process that uses electrical charges on the photoreceptor sensitive to light to attract first and then transfer the ink particles (powder) on paper in the form of an image.
- **Printer:** Is a peripheral device which develops the representation of an electronic document on the means of physical media such as paper or transparency film
- **Fax Machine:** Fax (or fax), sometimes called Minimize or fax, printed material is scanned, telephone transmission (both text and images), and usually for a phone number that is connected to a printer or other output device.
- **Head Phone:** A pair of small speakers that are designed to be held in a place close to the user's ears. Either has a wire to connect to the signal , such as the speaker , and radio source , and player CD, portable media player or mobile phone , or has a radio receiver device , which is used to pick up the signal without using a cable
- **Portable Hard Drive:** He also called for " hard drive " (HDD) is a device that stores data used to retrieve information (digital) using turntables fast - fast (platters) coated with magnetic material .
- **DVD:** It is used in DVD- Video digital video format and consumer DVD- sound audio format - digital consumer, as well as to write AVCHD discs.
- **CD:** A compact disc, or what we call it CD, is an optical disc which is used to store digital data. The format was originally meaningfully built up to store and playback sound recordings only (CD-DA), but was later adapted for storage of data (CD-ROM). Electromagnetic Security Gates: EM security is the most-used library security worldwide, protecting innumerable books and other media.
- **Radio Frequency (RF) Security Gates:** Radio Frequency (RF) is much like electromagnetic (EM) technology and, but on a low-end radio frequency, providing a high level of security to help protect library collections.
- **RFID-Detection Security-Gates:** RFID detection and 9100 model combines elegance and flexibility with state-of -the-art and technology to help provide excellent detection and reliability of all system. Has been structured on an attractive design and a clear passage. System meets ADA requirements and have a variety of flexible mounting options - direct mount or base plate to meet your needs better.

Sensitizer / Desensitizer Equipment (Book check System): In the library segment it is helpful to all at a time. In broader sense, It's all the pros and adds a barcode scanner , which allows interaction with ILS library and enable all access / exit and address the security sector in a way one approach procedures 942 function model .

- **Software Technology:** General purpose office software: Operating System (Windows, Linux and Unix): Operating systems (OS) are used to run Library Application software. Linux and Unix Operating systems are used for Digital Library Open sources and exe software's. Windows based Operating systems are used to run common applications used in offices works and Network management.
- **Microsoft Office:** Microsoft Office is used for daily routine works of office letters, calculation, Presentations.
- **Coral Draw:** Coral Draw software is used to design Certificates, event Cards etc.
- **Win Label:** Win Label software is used for Label printing of library material in the form of text and

numeric combined or separately in the shape of barcode labels. Acquisition, Serial Management and Circulation Software: In this process there different software's are used to provide services. Five categories of software are used.

1. Own Database Management Systems: In own database management system every library design their own requirement software by the staff. MS Access: Acquisition process of used in MS Access database software for the process of Accession Register.
 2. Commercial: Autolib, RAHOO-ILMS, Easylib, softE-Granthalaya, Gyanodaya, Libra 2000, Librarian, Library Manager, Libsuite, LibsysNalanda, NewGenLib, NexLib, Rovam LMS, SLIM, SOUL
 3. Open Source: Emilda, Glibms, Java Book Catalogging, System, Koha, Mylibrarian (For Schools) OpenBiblio, Open-ILS, PhpMyLibrary.
 4. Free ware: FireFly, WebLis OPAC (Online Public Access Catalogue) o Marc Edit: Marc Edit is a free-of-cost window based on MARC editing application software which provides methods for converting MARC into text, text into MARC, MARC into XML and MARC into Dublin.
- **ISIS Marc:** ISIS Marc is actually a data entry interface for CDS/ISIS databases that work on Windows and it is likely supposed to replace the standard Winisis data entry window with a more powerful environment.
 - **CDS/ISIS** (Computerized documents system/integrated set of information system): This package of public domain library developed by UNESCO's programs are generalized information retrieval application menu - driven storage system designed specifically for the management mechanism for a structured database . This is the Windows version of CDS / ISIS generally "WINISIS" called.
 - **Apache Server:** It is globally recognized as the world's one of main popular web servers. However, It is free software, and distributed by the Apache Foundation programs that encourage the various free and open source advanced Web technologies. Apache server used to run CDS / ISIS database in a web browser with the help of Janice / Isis
 - **Genis/Isis:** GENISIS is originally to write software (Win32) for visually developing web forms to query CDS/ISIS databases. Generally, however, there are two versions of the tool. GENISIS is used to Design OPAC interface for user in which there are three steps are used. 1. Form for searching query layout. 2. List of query result layout. 3. Detail searched query result format/layout of detailed records of a book. o Dream Weaver/HTML: Dream Weaver/HTML applications are used to design Layout of OPAC application which is run in the browsers. [5].

The use of information and communications technology in libraries and its effects on users: Different factors contribute to the change from the traditional to the existing library operations on information and communication technology. Basically there is also a need for the information and communications technology in the libraries of the main reasons for that: in terms of the various problems faced by the traditional library systems. Performance Guide and functions library and it became increasingly difficult because of the following main reasons [6]:

- Recorded information length grows while the space available at the disposal of all limited library. Any library can make it get additional memory in each year, despite the fact that the collection will grow constantly; because of the knowledge explosion, faces multiple information society aspects and multi-dimensional to some extent only create a challenge is not stored, but the management of the bulk information which may also become impractical [7].

Run Library: Due to the tremendous growth of information, and it takes several hours to perform manually in some cases.

Storage: The human brain can store a piece of information to certain restrictions, while the computers capable of storing massive amounts of data.

Accuracy: Computers perform functions very accurately.

Reliability: Computers, and all related technologies can have a long life if properly maintained. Data were collected in this way cannot be relied upon. Repetition: The computer can be used repeatedly for information processing. Compactness: In the present day's laptops, which have not done so, and capable, and occupies more space.

Characteristics of ICT-Applications used Library: Library users and the adoption of electronic habits, making gradual intent of using information and communication technology, including new computers, internet, on the Internet, intranet, extranet, and other techniques. It is the use of ICT in various library services to enhance the services, for the purpose of facilitating users that can fully be used as follows: Acquisition [7]: Favor of the acquisition of a very simplified in the library in the various steps demanded by users, and verification of duplication, and quotations necessary, check prices, place an order, etc. are very fast using the technique of information and communication technology. With the help of information and communication technology library save him / her time to use libraries and online publisher sites. Orders placed in the prescribed format are

available on the internet. To make the web faster and avoid delay mailing invoices can be downloaded from the publisher websites. E-mail plays a catalyst role in to help to send reminders to the publishers, vendors, and even to borrowers of books, i.e. innumerable users. It also helps in the process of serial control in the university library. It helps in the preparation of the union list of serials and helps to circulate via e-mail to the branch libraries.

Physical Processing: In physical therapy to maintain a record of automatic accession for books. In this process automatically assigned accession no. Barcode printing information from a separate book slips capable backbone and sticker paper to paste on the books. Technical Processing: Create links with library catalogs helps the user to know the details of the item are ready for services to the users. With the help of database software it is very easy and quick for employees to assign call numbers to new books added. In this section there is no duplication of work to prepare the card catalog. Information & communication technology has revolutionized the practice of indexing in the library [8]. With/by the help of OPAC users have access to the libraries' catalog holding on their desktop across campus. On the other hand it reduces the cost of maintaining a catalog. This service is a major impact of ICT in the technical section.

Circulation: Trading Service is the process by which the issue of books, magazines, CDs and DVDs to users. In this area there are services using a different technology, such as computers, barcode scanners and its software in circulation and helps in performing the routine operations quickly and easily to save time user. With the help of a trading program, user can use the service by phone, internet and e-mail to check availability, booking and renewal of books.

Reference

These include services such as informing users via the Internet for new acquisitions, and provide feedback and recommendations, and provide facilities for readers to interact with the reference staff. References section provides two types of services printed sources and multimedia. Inquiries are answered References section through emails.

OPAC, Online Public Access Catalogue: An OPAC interface is providing material status means is available or issued to users. This is web-based application used for users. Multimedia Services: Is the provision of multimedia services is also highly efficient in the library with the application of information and communication technology [9][10].

Multimedia section provides the following services:

- Online Searching: The creation of the implementation of information technology applications and communications environment to search and retrieve documents from different databases.
- Electronic format Delivery: Implementation of IT-based information and communication system of lending between libraries using an electronic database to provide copies of the book, magazine articles and other documents in digital form for library users.

- Online instructions: These include online tutorials on the search for online resources and virtual tours of the library collections. Libraries are also has a huge amount of data the implementation of programs to use bibliographic library based on the Internet or. Online Readers Advisory Services: Libraries and implementation of a Web-based versions reader's advisory services and reference services. These include services such as informing users via the Internet for new acquisitions, and provide feedback and recommendations, and provide facilities for readers to interact with the staff of reference (Ref. virtual desktops), etc.

Disadvantages and limitation of using ICT made the impact of ICT for different problems in the field of 'online publishing'. In the case of electronic journals and online databases, library loses its ability to reach after you disconnect its subscription. Unfortunately for the users, Publishing entities do not give access to the issues that have been underwriting. In addition to these contacts were following year defects [10]: -

- Expensive
- Need to have expertise
- Socio technical issues
- Insecurity of information
- More technology dependence
- Useless for human brain

CONCLUSION

Computer technologies at the present time and the related changes brought in a whole world of information. Libraries are layered to practice Information technology to automate a wide range of technical and administrative processes, and build databases, networks, and provide better services to users. Information technology in libraries, and helps in the performance of processes and services efficiently. Application of information technology and accessibility of information technology is to help the flow of information and creative expression, and effective management. And managed a comprehensive assessment of the quality of service and user satisfaction, indicating ample room for improvement.

The following three features; adequacy of resources, printing electronic resources, and information technology services have particularly been rated low. Can libraries and information centers barely function without computers and information technology? Library is well equipped with modern technology facilities can

meet the maximum demand of the users of the current technology. According to the analysis, the library staff should give more attention to these three features.

Improve performance, in my opinion, requires attention to be paid to key features that users have access to the quality of service and it also involves a commitment from management and staff library.

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