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INFORMATION AND COMMUNICATION TECHNOLOGIES IN INDIA: A REVIEW

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ABSTRACT

This article discusses the development of Information and Communication Technologies (ICT) in libraries. This Article highlights the use of ICT services for the Library Oriented Services like Internet, E-Resources, RFID, etc.. Types of networking used in libraries. In addition, it incorporates details on major Library Automation Software in India. This Article concludes with the impact of revolutionary developments in Information &Communication Technology.

KEYWORDS: Information communication Technology, Library Automation Software

INTRODUCTION

S. R. Ranganathan says "Libraries are not Mere Storehouses; they are rich Springs of Knowledge from Where Knowledge Flows to Irrigate Wide Fold of Education &Culture". The Library is the Heart of Educational Institution. The Vision &Mission of the library are (a) Supporting Teaching (b) Supporting Learning (c) Supporting Research(d) Consultancy.Revolutions in Information & Communication Technology (ICT)have made a great impact on library functions & services, with the introduction of ICT, the library services are improved in speed, efficiency & effectiveness for providing right information at right to the right reader.Developments in the ICT had made the whole world a global village with the collapse of traditional constraints of space & time.The convergence of Computer & Communication Technologies have created a new channel of networking which has revolutionalised the traditional communication process by providing required links & routes throughout the world.

As a result of this revolution the mode of access to the information has shifted from printed paper to Electronic & Digital through Magnetic Media, Optical Media &Multi Media."Information is anything that changes a person's knowledge" Information is the most valuable resource is an information society.Thus acquiring & using of information have become critical activities.Information seeking is a process in which human purposefully engage in order to change their state of knowledge.The primary activities of scientists, physicians, business persons & other professionals are gathering information from the world, mentally integrating that information with their own knowledge thus creating new knowledge & acting on this new knowledge to accomplish their goals.Information is critical to the growth, progress & prosperity of any nation.We have seen the tremendous progress in ICT which tends to be a convergence of several technologies computing, telecommunications, electronics & multimedia.Among these, particularly notable & significant is the development of the internet with its related technologies.

DEFINITION OF ICT & OBJECTIVES

Information

- Information Technology is an Electronic Technology used for Collecting, Storing, Processing&Communicating

the information.It includes Micro Electronic &Info-Electronic based technologies.

- The rapid developments in information technology brought revolutionary changes in information Processing, Storage, Dissemination & Distribution & became a key ingredient in bringing up great changes in over all aspects of society.
- In Computers & Communications transformed the Computers Synonymous to Information Technology.

Communication

- The word 'Communication' originated from Latin Word 'Communists' meaning 'Common'
- Communication is imparting, conveying or exchanging of ideas & knowledge whether by speech, writing or signs – Oxford English Dictionary

OBJECTIVES OF ICT

- To understand the current status of the academics in the field of information technology
- To know the knowledge, opinion & attitude of the library professionals on communicative media technology
- To automate the library management & digitizing the library information.
- To provide easy to access the books in library for users

Technologies in Libraries

- **Information Capture**:Key Board, Scanner, Digital Cameras, Mobile etc.,
- **Storage**: PCs, Floppy Disks, CDs/DVDs
- **Identification**: Barcode, Tattle-Tape RFID, Biometric
- **Databases**: Books, Articles, Reports, Publishers
- **Digital Library Software**: Green Stone Digital Library Software, DSpace, Fedora,VTLS
- **Library Automation Packages**: WIN/ISIS, SOUL, Libsys, Libsuite, Liberty, ALICE
- **Networking:** Client-Server, P2P, Internet

USE OF ICT IN LIBRARY SERVICES

Some of the library oriented latest information & communication technologies services are

Internet

One of the most significant achievements in the ICT is the Internet.It is nothing but network of networks connecting throughout the globe.Internet connects with millions of users in the network.Internet provides access to vast number of resources covering many types of information.Internet gives access to a world of information with a mouse click.Today Internet is a wonderful communication tool throughout the world.

E-Mail

E-Mail is one of the important features of internet.Electronic mail facility of internet will be used very conveniently for not only giving message but also for rendering current awareness service & SDI mail transfer of journal articles to the distant users.

Online Public Access Catalogue (OPAC)

OPAC is the interface between the user & the collections of a library.It is metadata cataloguing & displayed information available to the users for interactive searching to get their need of information.Typically OPAC enable users to search the library catalogues & may also provide other facilities, such as reserving reading material, reading library news bulletins, announcements conferences,workshops

E-Books

E-Books stand for electronic book, which refers to the electronic or digital version of printed book.It is revolutionizing the information, organization & presentation of information.E-Books can be read on a dedicated reading device, a personal digital

Assistant (PDA) or other multi-purpose device such as Pocket PC or PC using software from Microsoft, Abode etc.

E-Journal

Journals play an important role in communication of scientific information.Today we see a new form of electronic communication viz.," Electronic Journals".Online version of journal is called electronic journals.E-Journals can be delivered from the publisher to the user desktop.Many academic journal publishers are providing online access to electronic journalsthe latest method of information technology in E-Journals (National & International) is the participation in consortia instituted by UGC & MHRD.UGC-INFONET is the journals consortia maintained by INFLIBNET.Many of the universities have become the members of it.In the first phase 100 universities were given the e-journals service through ERNET connectivity.AICTE-INDEST e-journals like IEL (IEEE & IEE) ASCE, ASCE, DEL, and ESDU.Science directory etc. to all the engineering colleges through subscription.

CD-ROM Database

CD-ROM is a high density, compact, portable easy to use computer storage device.Many information sources are now available on CD-ROM i.e. Dictionaries, encyclopedias, to subject specific sources containing bibliographic, full text & multimedia information.Indexing, abstracting & Full text journals, business information, latest journals & back volumes of journals, Business & Corporate information, national & International statistical information, references sources etc. are available in the form of CD.CD work station can be set up in the library & it can be made available on the institute LAN.CD ROM Databases are heavily used in libraries where online facility is not available.The journals & day to day library backups are stored in permanently in CD-ROMs.

Digital Video Disks

DVD is also called Digital Versatile Disc.DVD is an advanced version of compact disc (CD).It is a very large capacity compact disc.It contains advanced multimedia support with at least seven times the storage capacity of CD-ROM.Now a days various standards databases i.e. BSL, NACE, NASA, AWS, standards etc coming in DVD format.The latest DVD can store nearly 8 full length cinemas using comprehensive technology.

Bar Code Technology

Automated libraries are using barcode technology for circulation & stock verification.Barcode technology improves the speed & efficiency of library circulation process.It helps in stock verification & help to eliminate the errors & time saving.

RFID Technology

RFID stands for Radio Frequency Identification.It is an automatic identification technology.Where radio waves are used to identify objects or people.RFID tags consist of a microchip attached to an antenna.This RFID technology solves to certain extent the book loss problems in libraries.RFID technology can prevent book theft.Indira Gandhi Memorial Library, Hyderabad used first time in India.

Telecommunication Technology

The popularity of telephones in communication of information is well known.It has been widely used for short & specific information in libraries.The latest advance in communication technology is the introduction of the fax machine.Fax message are transmitted either by telephone networks or by digital data networks.Electronic mail is a form of computer transmission of message

User Identification Cards (ID Cards)

ID-Cards are very useful for identifying the authorized users in the library.ID cards contain the entire user information.The cards are printed with barcodes as well as photos of the users.The user information is also available in library database.The barcode machine will read the user information through barcode in the circulation counter & easy to issue the books

NETWORKING

A library network is broadly described as a group of libraries coming together with someagreementof understanding to help each other withview to satisfying the information needs of their users.With the advent of networks, remote transmission of texts & graphics, video clips & animated clips are also possible.During the recent period quite a large number o libraries & information centers are forming networks.The advent of computer networking as an accepted part of the library & information infrastructure has had a very significant impact on the way in which library & information systems are perceived.India is thus on the threshold to a new era of computer communication networks both for general purposes & for library & information purposes.

Types of Networks

Presently there are three types of computer networks

Local Area Network (LAN)

A LAN isa number of related computers & Electronic devices that share information over a transmission media .A typical use of LAN is to tie together personal computers in an office so that they can all use a single printer & a file server.The LAN can be within a building or a campus wide network.

Metropolitan Area Network (MAN)

Attempts are being made to develop thistype of network in metropolitan areas such Delhi, Bangalore, Madras etc.

Wide Area Network (WAN)

A large scale network, involving offices in different cities & countries is referred to as WAN, which is specially designed to interconnect data transmission devices over wide geographical areas.

CATEGORIES OF NETWORK

Library networks have been divided in to 2 categories general network & specialized network.The latter can further be divided in to metropolitan network & countrywide network.

General Network in India

NICNET, INDONET, I-NET (VIKRAM)

Specialized Networks (Metropolitan Network)

CALIBNET, BONET, DELNET, ADINET, MYLIBNET

Countrywide Area Network:

DESINET, ERNET, SIRNET, VIDYANET, BTISNET, INFLIBNET, BALNET, MALIBNET

LIMITATIONS IN NETWORK DEVELOPMENT

A network may fail in the early stages if there is not proper planning or if adequate funds are not available.Moreover, a common memorandum of agreement signed by the participating libraries at the institutional level is essential for the success of a network venture.On a more practical level, catalog data must be in a standard, machine readable form for it to be shared & exchanged.And, finally, a continuous flow of external assistance is crucial for the network's survival

AUTOMATION SOFTWARES IN LIBRARIES

Libsys

Libsys is one of the major library application software in India used by about 500 libraries.All IIMS all ISRO Libraries, British Council Libraries, many CSIR Libraries & many Government Organizations are using this software.

VTLS

VTLS means (Visionary Technology in Library Solutions) software, VIRTUA-ILS (Integrated Library System) to establish a sophisticated & modern library automation and management.The software developed based on MARK21/UNIMARK standard.The MARK21/UNIMARK standard is used in world wide.This format of information is useful for exchanging the library information one library to other library.

SOUL

SOUL Software for University Libraries is used by many university & Degree College Libraries.This is developed by UGC INFLIBNET.Nearly 100 Government Degree College are using this software in Andhra Pradesh.

Acquisition Document

Amazon.com bookshop on the Internet has kept several lakhs of books titles on the Web & even the first chapter of the book available on the Internet.Several book sellers & educational institutions have their Web pages on Internets & they can be surfed for selection & acquisition.Earlier we were using printed publisher & bookseller catalogue for selection, which are outdated.Even to get latest publisher catalogue it is taking time to get it.With the help of the electronic library catalogue database & the circulation system, we can evaluate the library collection & built up a balanced library collection.MARC 21standard catalogue, which can support tologin to other library catalogues & access to catalogues of other libraries worldwide.Using the library software, we can maintain records regarding the library budget, allocated by Department wise & other areas amount spent, Duplicate.The balance available for the Department & the other areas & such other financial statements can be generated as & when required.To maintain such manually records it would have taken long time.

TECHNICAL PROCESSING

Library catalogue database in electronic form is much more comfortable & beneficial to the user compared to the card catalogue.Online publish Access catalogue (OPAC) the user can browse on the computer & scan several related titles & he can continue browsing screen after screen.User can search by any field.He can use Boolean Operators for searching information.This was not possible earlier with card catalogue.Another biggest advantage ICT is networking.The catalogue can be made available through LAN or WAN.Using OPAC on the LAN in the campus, user can search from any node.Similarly, the local, regional, national & international network can be created.The user can search the catalogues of other libraries available on the internet & documents can be borrowed on the Inter Library Loan by courier, Seed post, depending upon the need of the users.

CONCLUSIONS

The revolutionary developments in information & communication technology have three imparts.The implementation of ICT in libraries are very use full for users & library professionals for speed up the accessing & maintaining of the library information as well as the automation of the libraries.As more & more information is readily available in machine readable form there has been a fundamentalshift in the concerns of the information in print form. As computers are increasingly used for providing information, librarians & other information professionals must familiarize themselves with the latest technological development in this field of ICT.

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