Chapter 5

ICT BASED SERVICES AND ITS IMPACT ON SELECTED SPECIAL LIBRARIES IN ASSAM

5.1 Introduction

Application of information communication technology (ICT) has brought a tremendous change in today's libraries. In the ending of 20th century libraries were following traditional method to do all the housekeeping operations. But now libraries are using different much more developed technologies in housekeeping operations and services. Application of ICT not only changes the concept and activity of library with that it helps in saving the time of users and library personnel. Development of information communication technology (ICT) is playing a crucial role in reshaping of libraries. The trend of library services and sources has tremendously changed due to the application of ICT tools. Dr. S.R. Ranganathan the founder and father of Library and Information Science formulated the famous five laws of library and information science and now it has become a challenge by the tremendous progress of ICT and its application in the area of library science.

ICT has impacted on every sphere of special library activity especially in the form of the library collection development strategies, library building and consortia. ICT presents an opportunity to provide value-added information services and access to a wide variety of digital based information resources to their clients. Furthermore, special libraries are also using modern ICTs to automate their core functions, implement efficient and effective library cooperation and resource sharing networks, implement management information systems, develop institutional repositories of digital local contents, and digital libraries: and initiate ICT based capacity building programs for library users.

Information communication technology (ICT) has brought unprecedented changes and transformation to special library and information services, conventional LIS such as

OPAC, users services, reference services, bibliographic services, current awareness services, Document delivery, inter library loan, Audio visual services and customer relations can be provided more efficiently and effectively using ICT, as they offer convenient time, place, cost effectiveness, faster and most-up-to-date dissemination and end users involvement in the library and information services process. The impact of ICT characterized on information services by changes in format, contents and method of production delivery of information products. Emergence of internet as the largest repository of information and knowledge, changed the role of library and information science professionals from intermediary to facilitator, new tools for dissemination of information and shift from physical to virtual services environment and extinction of some conventional information services and emergence of new and innovational web based services.

5.2 ICT is basically uses in the following library environment

- **Library management:** The activities of Classification, Cataloguing, Indexing, Database Creation, Database Indexing, etc. are done by the use of ICT.
- **Library automation:** Automating a library reduces the human intervention in all the library services, so that any user can receive the desired information with the maximum comfort and at the lowest cost. Major areas of the automation can be classified into two parts organization of all library database and housekeeping operations of library.
- **Library Networking:** Library networking means a group of libraries and information centers are interconnected for some common pattern or design for information exchange and communication with a view to improve efficiency.
- **Audio-Video Technology:** It includes photography, microfilms, microfiches, audio and tapes, printing, optical disk, etc.
- **Technical communication**: Technical communication consisting of technical writing, editing, publishing, DTP systems, etc.

Today libraries are uses various types of electronic equipment and communication technologies to ensure the smoothness of library activities. Some of the common resources available in the libraries today are:

Computers: Computer based technology have become dominant forces to shape and reshape the products and services of the library has to offer.

OPAC: An online public access catalogue of the materials held by a library or group of libraries.

Union catalogue: It is a combine library catalogue describing the collections of a number of libraries. Union catalogue have been created in a range of media including book format, microform, cards and more recently networked electronic databases.

CD-ROM: It presents a state of art review of the applications of all aspects of library involvement and staffing implications.

Scanner: It is a device that optically scanned images, printed texts, handwriting, or an object and converts it to a digital image.

RFID: Radio frequency identification is a term used for technologies utilizing radio waves for identifying individual items automatically. RFID is used very similar to barcodes.

Tele text: It is a television information retrieval service developed in the United Kingdom in the early 1970s. It offers a range of text based information, typically including national, international, and sporting news, weather and TV schedules.

Facsimile: It is a copy of reproduction of an old book, manuscript, map, art, or other item of historical value that is a true of the original source as possible.

Photocopy: photocopier is a machine that makes paper copies of documents and other visual images quickly and cheaply. Xerography is the most current photocopiers widely used in libraries today.

Printing Technology: In computing, a printer is peripheral which produces a text and/or graphics of documents stored in electronic form, usually on physical print media such as paper or transparencies.

Barcode: A barcode reader or Barcode scanner is an electronic device for reading printed barcodes.

5.3 Some electronic sources provided by ICT

Audiovisual materials: The audiovisual collection contains a wide range of audiovisual materials to support the research and study needs of staff and students.

Internet: Though internet communication has become easier and faster and decision are made instantaneously. Internet made it easier to have access to information to all people at all places and at all the times.

Library website: It helps to recognize the facilities and information sources available in the library.

Database: Database is an organized collection of data for one or more purposes, usually in digital form. The data are typically organized to model relevant aspects of reality, in a way that supports process requiring the information.

5.4 Following are some of the services provided through ICT in the libraries

Document delivery services: Through this service, library delivers copies of journal articles and book chapters from participating libraries.

Inter library loan: It is a comparative arrangement among libraries by which one library may borrow materials from another library.

Indexing and abstracting services: It is a method which is used to retrieve information from a table in memory or a file on a direct access store or the art of compiling an index. The preparation of abstracts, usually in a limited field, by an

individual, an industrial organization, and these are being published and supplied regularly to subscribe.

Chat services: Online chat may refer any kind of communication over the internet. Online chat may address as well point to point communication as well as multicast communications from one sender to many receivers.

CAS: The purpose of the current awareness services to inform the users about new acquisition in their libraries. For this display boards and shelves are used. Some libraries produce complete or selective lists for circulation to patrons.

SDI: SDI refers to tools and resources used to keep a user informed of new resources on specified topics.

Scanned Copies: A scanning service for material not available electronically, which is held by the library. This includes articles from journals and chapters from books.

Bulletin board services: It is a computer system running software that allows users to connect and login to the system using a terminal. Once logged in, a user can perform functions such as uploading and downloading software and data, reading news and bulletins and exchanging massages with other users.

Electronic services and E-resources: these are mainly CD_ROM, OPACs, E-journals, E-books, ETD and internet which are replacing the print media. These are found to be less expensive and more useful for easy access.

Digital Library: A digital library in which collections are stored in digital formats and accessible by computers. Digital contents may be stored locally, or accessed remotely via computer networks.

Electronic mail (E-mail): This medium can also be used to send and receive mails. This is commonly and widely used with the internet facilities. Email is very useful for sending messages to and from remote areas with enhanced network. Further, it is also

useful in various aspects of library environment. Thus, it may be stated that e-mail may play a significant role in information dissemination services.

Fax (facsimile transmission/ Tele fax): Fax, sometimes called as telecopying or telefax, is the telephonic transmission of scanned printed material. It is used in some libraries for delivery of documents and other academic communications. It is a method of converting an image into electronic signals that can be transmitted over a communication link and converted back into an image at the receiving end.

Institutional repositories: An institutional repository is an online archive for collecting, preserving, and disseminating digital copies of the intellectual output of an institution, particularly a research institution. For a library, this includes materials such as journal articles, both before (preprints) and after (post prints) undergoing peer review, as well as digital versions of theses and dissertations.

Library management software package: Software consists of the step-by-step instructions that tell the computer what to do. In a Special Library, the most common computer software used is library automation software, database management software, antivirus software and application software. Many software packages for various applications in the field of library & information services and management are CDS/ISIS, SOUL, LIBSYS, KOHA etc. used for automation purposes.

Library retrieval systems: This involves using Compact Disc Read Only Memory (CDROM) technological mechanism of acquisition of specialized CD-ROM databases in various courses such as sciences, law, technology, agriculture, social sciences, medicine, humanities etc. They are available commercially.

Library website: A library website provides a library with a website to 20 offer its services and to tell its story to its community. In most of the library website online catalogue is included. A library web page or Universal Resource Locator (URL) facilitates single window access to various web enabled library services.

Micrographic & reprographic technology: These technologies are still widely used technology in libraries globally. Most of the research libraries have reprographic machine and provide photocopies of any document on demand. Microform is a generic term for all information carriers which use microfilm or similar optical media (including study) for the high-density recording and storage of optically encoded information in the form of micro images of printed document, bit patterns or holograms.

Networked electronic information resources: Networked electronic information resources are new vision of information of the future. These are the mainstay and life blood of present day information centers. Libraries are providing their users with access to networked information resources, i.e. databases, electronic scholarly journals, encyclopedias, public government information, etc., provided by various publishers or suppliers.

Networking technology: The important function of network is to interconnect computers and other communication devices so that data can be transferred from one location to another instantly. Networks allow many users to share a common pathway and communicate with each other. The networks include the local area network (LAN) in library housekeeping and resource sharing and wide area network (WAN) that covers wide geographic area such as a country or state, that covers limited geographic area such as campus, or building e.g. - DELNET, INDONET, INFLIBNET, MALIBNET, NICNET, ADINET etc. are major WAN in India.

NPTEL services: NPTEL provides E-learning through online Web and Video courses in Engineering, Science and humanities streams. The mission of NPTEL is to enhance the quality of engineering education in the country by providing free online courseware.

Online full text service: A full-text database is a compilation of documents or other information in the form of a database in which the complete text of each referenced document is available for online viewing, printing, or downloading. Online

instructions: Libraries are also implementing online based bibliographic or library use programs. These include online tutorials on searching online resources and virtual tours of library collections.

Online public access catalogue (OPAC): It is the computer form of library catalogue to access materials in the library. OPAC is an online database of materials confined by a library or group of libraries. It is a computerized library catalog available to the public. Most OPACs are accessible over the Internet to users all over the world. Libraries are implementing Web based versions of readers' advisory services and reference services. It helps to find the right information/reading material for the right person at the right time and provide the best information that matches their needs, interests, and reading level.

Open source software (OSS): Open Source Software or the OSS is freely available computer software, which allows altering the source code and customizing the software to anyone & for any purpose. In the last few years we have seen the development of a number of ILS products in the open source world such as Integrated Library Systems (ILSs) like Koha; Digital library software, like Greenstone; Digital Repository Software, like D-Space; Content Management Software, like Moodle, etc.

Printing technology: A printer is a device that converts computer output in to printed images. There are a number of different kinds of printers used in library such as Dot Matrix Printers, Laser printer, Inkjet, Bubble-Jet etc.

RFID Technology: RFID (Radio Frequency Identification) is the latest technology being used in modern libraries to prevent theft the library materials. Radio frequency identification is a term used for technologies utilizing radio waves for identifying individual items automatically. It is a fastest, easiest, most efficient way to track, locate & manage library materials and being used in the libraries for automatic check-in and check-out circulation process and also in stock management. It is an emerging, more effective, convenient, and cost efficient technology in library automation and security. RFID is used very similar to bar codes. Developments in RFID technology

continue to yield larger memory capacities, wider reading ranges, and faster processing.

Smart card for member identification: A Smart Card is a polyvinyl plastic card (like a regular credit card) with an embedded chip on which data is stored. Smart cards can provide identification, authentication, data storage and application processing. Smart card readers are used to read smart cards. It can store multi applications and can be used for services like electronic purse/ debit card/ credit card/ health/ insurance/ loyalty etc.

Storage technology: Optical disc storage technology is the most recent computer technology to enter the library community. CD ROM developed in 1985 has ability to represent various media such as text, graphics and animation, video clips and sound files into a digital environment. Digital video disk or digital versatile disk (DVD) is the next generation of CD. The main feature of DVD is the compression technology and storing data on multi-layer 24 sides, stores 17 GB data is currently the only credible true multimedia format.

Tele Text services: Tele text is a television information retrieval service developed in the United Kingdom in the early 1970s. It offers a range of text-based information, typically including national, international and sporting news, weather and TV schedules. Tele text information is broadcast in the vertical blanking interval between image frames in a broadcast television signal.

Teleconferencing: Teleconferencing is a generic term that denotes the combined use of telecommunications and electronic technologies as an alternative to in-person meetings.

Video conferencing: Videoconferencing is a method of holding conferences by transmitting and data communication networks, so that participants can both see and hear each other. It is convenient and less expensive for conducting a conference between two or more participants situated at different remote locations.

Videotext services: Videotext is a newer technology, but as in the online information retrieval, the information is stored in computer files and accessed through a telecommunication link. Videotext is any system that provides interactive content and displays it on a visual device, typically using modems to send data in both directions.

Voice mail: Also known as voice mail, voice message or voice bank is a computer based system that allows users and subscribers to exchange personal voice messages. Voice mail acts like a telephone machine that digitizes the incomings voice message and store for retrieval later. It is an alternative system of e-mail.

Web technology: The World Wide Web was developed in 1989 by Tim Berner Lee and by 1995 web has expanded to global proportions. The World Wide Web (WWW) is a client server based, distributed hypertext, and multimedia information system on the Internet.

5.5 Conclusion

This study has sincerely attempted to evaluate the application and impact of ICT on the Special libraries. The Special libraries of the twenty-first century are challenged to be digitized through the application of ICT facilities and services in their libraries. This is aimed at ensuring quick and easy access of the large numbers of library users to provide relevant accurate and current information from both remote and immediate databases to facilitate learning and teaching in the institutes. The availability and use of ICT infrastructures and services in Special libraries in Assam has become a necessary in meeting their day to day requirements of their users.

Advances in the field of Information communication technology have brought the revolutionary changes in the field of information management and handling. Now a day, libraries and information Centers are equipping themselves with the help of information communication technology applications in their operations, management and services. The ICT has tremendously increased the efficiency of libraries to acquire process, store the information and provide better access of information to users. The ultimate benefit goes to the users of the library such as students, scholars, researchers,

faculty, engineers, decision makers, planners etc. for whom the information is too precious. The major objectives of ICT application in the Special libraries are to improve the system to provide the most recent and accurate information promptly without wastage of time and efforts as per requirement of the users with the proactive approach. ICT facilitated the library professionals to make the library system more effective and efficient. The results of the same may be achieved in form of increased user satisfaction. This study is expected to examine various applications of Information communication technology in the libraries and information centers from library staff perspectives. It will also help to understand the skills of library staff on these ICT applications and their perception to evaluate the various aspects of these applications. Efforts were also made to understand the satisfaction level of library users and their skills to use the IT based services and facilities of libraries, and other aspects from users' point of view. The future of library and information services is bound closely with the development of ICT, as many of its activities and services can be enhanced and many new services developed using suitable ICT in an appropriate way. This work on ICT application in special libraries has revealed that ICT is essential for effective information service delivery.