

**Chapter 4****ROLE OF ICT FOR PROMOTION AND UPGRADATION OF SPECIAL LIBRARIES**

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**4.1 Introduction**

The Abbreviation ICT stands for information communication technology is combination of two words Information, Communication and Technology. Where, information means knowledge and technology means use of computer based tools and applications. ICT can be defined as “the amalgamation of computing, networking and information processing technologies and their applications. So, ICT means combination of computer based applications and communication technologies for gathering, storing, processing and dissemination of information.

The term “information communication technology” (ICT) first came into view in the middle of 1980. And it was defined as “All kinds of electronic systems used for broadcasting telecommunications and mediated communications”, e.g. Internet, personal computer, video games, mobile phones, electronic payment system, online application for educational purpose or job affairs, etc. ICT is consists of computer and computer based technologies. ICT is the tool for storing, processing and dissemination of information in digital form while it needs to be transfers into digital format. Moreover, ICT means a mixture of various technological applications for processing and dissemination of information in a very quick and easy access.

As per the definition used by United Nations information communication technology (ICT) can be describe as a varied set of goods, applications and services used to produce, store, and process, distribute and exchange information. They include the most familiar technologies of television, radio and telephone and the relatively newer ones, personal computer, mobile phones, satellite and wireless technologies and the Internet.

In India all these ICT are being used for various purposes not only for gathering information but also for giving opportunities to utilize them for imparting skills as well as enhancing the knowledge by way of showing various data to any remote locations with the help of connectivity through these technologies. Today wireless infrastructure developments in rural and urban areas are being utilized in various parts of the world through the penetration of internet and wireless service.

As per the report published by UNESCO in 2003 the advances countries including Australia, South Korea and Singapore have integrated ICT into their education system. This includes that all classroom have been equipped with a) computers and ICT, b) a high student computer ratio, c) a high level internet access for all schools, d) a curriculum revised to insure that ICT become integral nationwide and deliver all class becoming increasingly online. The library users should know about these internet and ICT technologies to search the information in digital age.

Information communication technology (ICT) is generic term that covers the acquisition, processing, storage and dissemination of information. ICT is like blessing for whole mankind. It gives the most easy and quick way to access information at hand. ICT has solved the problem of space and time among people, country, and continent and ultimately has led to the prominent concept of “global society” and “global village”. The new technologies that are coming out as part of Information communication technology includes Video conferencing/Net meeting, hyper media, data mining, data warehouse and data marts, Online Analytical Processing (OLAP), Geographical Information System (GIS), etc. The Net Meeting helps one to talk face to face with distance people over the web.

**According to the Webster’s New Encyclopedia**, “Information Technology is the collective term for various technologies involved in the processing, and transmission of information that include computing, telecommunication and microelectronics”.

**According to ALA Glossary**, “Information Technology as the application of computers and technologies to the acquisition, organization, storage, retrieval and dissemination of information”.

**According to the British Department of Industry**, “Information Technology is the acquisition, processing, storage and dissemination of vocal, Pictorial, textual and numerical information by microelectronics based combination of computing and telecommunication”.

"Information and Communication Technology replacing the older 'IT' and the alternative 'C & IT' to express the combination of computing hardware and software with the capabilities of communication networks that provide new opportunities for teaching, learning and training through the delivery of digital content. The expression arose from an educational context but has since expanded into other sectors and its use is now widespread".

The use of ICT provides quality services to users. Moreover, ICT have revolutionized activities in all spheres of life, especially library and information services. The presence of computer and information technologies in today's business and public sector organizations has expanded dramatically, Since the 1980s, about 50% of all new capital investment in organizations has been in information technology. Investment in emerging information technology applications can lead to productivity gains but only if they are accepted and used. It is widely acknowledged that organizations increasingly depend on information communication technology (ICT) for the execution of a variety of operational, tactical and strategic processes. However, although senior managers might make primary adoption decisions related to ICT, it is the individuals within organizations who are the ultimate users and consumers of the technology.

Now-a-days it is difficult to imagine a world without information communication technology. The use of ICT now becomes part and parcel of the entire education system to students, information professionals and institutions too. With the help of

ICT it's become very easy and fast to deliver services to the users and also it can save the time of both the users and staffs. Application of ICT has tremendously changed the previous concept of library and information center. Today's libraries have adapted ICT for performing both housekeeping operations as well as for providing developed services to its patrons.

#### **4.2 ICT application in libraries**

Rapid technological development and application of information and communication technology (ICT) has changed manual library operation and services into modern one. The application of new and modern ICT has allowed to access and store information quickly. It makes faster speed of retrieval of information; Computerization of house-keeping functions of libraries reduces a number of repetitive works. Thus, there is a visible influence of the application of ICT in library and information service and efficiency level of libraries. And today computerization of library is more and more becoming important for managing organization and institutions efficiently and effectively.

Application of ICT has the capability of changing the total scenario of the library world. It got the huge potentiality of expanding a wide range of innovative quality services to be rendered towards user community. With emergence of ICT tools and techniques libraries can enrich and enhance its service quality efficiently and effectively. Perhaps the application of ICT can be traced out with the introduction of computer technology in libraries to create mainly bibliographic databases. This event could be treated as the landmark towards library automation. Started with that, Library and Information professionals are always trying to keep them updated with the technological developments and its implications. Slowly the concepts of Library Automation and Networking are emerged encompassing many categories of tasks performed in libraries\_ library housekeeping activities, information retrieval services and network based different services etc. Sharing some resources by multiple users within the same organization among sister concern have become possible through network-based system. Indeed, one might say that organizations are becoming both

technology rich and information enabled. Librarians do need to be clued up about ICT and its implications, because ICT application, in addition to automated chores, helps libraries:

- to improve the total quality of library and information work and services.
- to improve the management of library resources enabling their participation in resource management,
- to introduce new innovative services including web services, to facilitate wider access to information for their users, to facilitate wider dissemination of their information products and services,
- to enable rapid communication with other sister libraries,
- to increase skills and efficiencies in handling technologies, and
- to avail user oriented services.

Copying with the paradigm shift in characteristics and environment of libraries are absolutely essential for librarians to survive and thrive in library and information services in the 21<sup>st</sup> century. For this purpose of the following matters are to be taken into considerations:

- Developing awareness among librarians, document lists& above all policy makers / management authorities for realization of the need for ICT application.
- Adopting various tools and techniques related to ICT for libraries.
- Improving the access and exchange of information available in different libraries.
- Accessing of library resources, internet / web resources towards betterment in rendering efficient and effective user services.

ICT has entered in every corner of our everyday life. No important field of human life remains immune to its influence; no corner of life is left undisturbed by its influence. The comprehensive descriptions of social impacts of ICT are given below:

- ❖ **Amplification:** Technology helps us to store more information, assess more information and send more information very quickly.
- ❖ **Globalization:** Information has now become a global activity fulfilling the dream of global electronic village. The growth of packet switched networks and satellite communications make it easier.
- ❖ **Massification:** Today greater amount of transient or volatile information is becoming available only in electronic means. Traditional communication system are becoming out of action. Concepts like e-commerce, e-marketing, e-education have already been popularized.
- ❖ **Decentralization:** Electronic access, distributed processing, teleshopping and flexi-working are encouraging a trend to decentralization local control and individual patterns.
- ❖ **Transformation:** Technology eliminates jobs; it also creates new jobs and opportunities. The progressive mechanization and automation results in the displacement of labor. Changes are taking place in the occupational structure for introduction of new technology.
- ❖ **Commercialization:** The growing awareness of the resource characteristics of information and the emergence of markets for information goods and services and the continuous needs for information goods and services and the continuous needs for financial accountability and control has gradually changed attitudes towards information. It is being realized that information is an important resource that can be capitalized, which has a market value. The most important changes have come through realization that the information is not free. There are costs associated with its generation, storing, retrieving, distributing and exchanging. Information can be both consumable investitures. As consumable resource information it is the end product of service being offered. As an investiture resource it contributes to an intermediate stage to the production of other goods and services.

The library is often called the heart and nerve of any society. It is storehouse of knowledge. It is becoming a complex organization day by day. It requires efficient and

effective management; otherwise the library services cannot meet the needs of clientele. As the libraries are facing different management problems, this present work is an attempt to investigate how the implications of ICT in libraries are having impact on the managerial operations.

The growth of information is multidimensional, continuous and it is increasing at a tremendous rate. Consequently, demand for utilizing such information is also increasing. As such the library has to play a pivotal role in information processing. The library as a procuring and supplementing agency has to provide the information to the clients pin pointedly, exhaustively and expeditiously. But the information is multidisciplinary in nature and scattered around the globe in different forms.

The advancement of information communication technology (ICT) has made a tremendous improvement and change almost in all walks of life. Information communication technology (ICT) is being increasingly used in library and information services for the acquisition, storing, processing and dissemination of information. Information communication technology can be used in libraries and information centers for the development of new information services and computerized library services.

Libraries and information centers have been using ICT based resources and services to satisfy the diverse information needs of their users. At the same time it is found that the use of information communication technology has become increasingly important in the libraries. Day by day Libraries are switching over to ICT based resources and services at an accelerated pace. E-journals, CD-ROM databases, online databases, e-books, web based resources and a variety of other electronic resources are fast replacing the traditional resources of libraries. By the application of information technology in the process of library work, the job of the library staff becomes easy, interesting and pleasurable.

Developments in ICT have made significant impact on all spheres of human life. The impact has been rather prominent in case of service activities such as banking, health,

transportation, education and libraries. Benefits of use of ICT in services can be broadly explained in terms of 4 Es, namely economy, ease, extension (or expansion) and efficiency. For the Libraries, ICT has tremendously changed the Management of Resources or House Keeping Operations as well as the way services are delivered. While general IT application tools and Integrated Library Management Systems are largely used in housekeeping operations, like acquisition, cataloguing, circulation control, serials control etc.; Internet has been used extensively as a resource as well as a tool to deliver the Library and Information Services (LIS). In this lesson we will study how ICT has had impact on delivery of LIS. In the specific context of LIS, one of the implications of use of ICT is that Libraries can reach out globally to provide their services 24-hours a day in very cost effective manner. ICT has enabled users to avail many services without any human intervention, the role of the LIS professional is changing from an intermediary to a facilitator and enabler. In this Unit we have grouped the ICT enabled services into two categories as follow:

1. ICT enabled conventional LIS that can be delivered more efficiently through use of ICT, and
2. New Services, which have been made possible due to developments in ICT.

#### **Benefits of using ICT in Libraries:**

- **Library Automation software:** Libraries themselves and commercial vendors are developing this type of software as per their requirement. Traditional integrated Library System (ILS) commonly includes the modules that perform acquisition, cataloguing, circulation, retrieval, serial control, etc. There have been lots of tremendous improvements on the capability of these library software's.
- **Web Based OPAC:** The OPAC has become more accessible to library patrons through web interface allowing them to access the library catalogue from any location. The most advanced OPACS today provide enriched content related to library holdings such as depictions of cover art tables of content summaries and reviews etc.



- **Resource Sharing and Networked Database:** Acquisition of all resources used for library patrons is not easy for a single library due to increasing cost and number of information resources. In order to promote optimum use of resources libraries and information centers are promoting the co-operative acquisition and resource sharing using networking software.
- **Internet:** Internet is the result of advancements in the field of information communication and networking technology. It is a big source of various kinds of information and supporting the libraries and information centers for getting electronically published information so as to provide better information services and quality information to their users.
- **Broadcast Searching:** Due to growth of vast amount of information resources particularly in the electronic form, it became a problem to identify the best resource to search the desired information. New broadcast search tools climate is the need for the user to make repetitive searches in different databases and present a single user interface for all searches. With a single query, library patron can search many different resources simultaneously.
- **Digital Library:** Keeping in view of the problem in managing traditional library with issue return of books from circulation counter and other services, mostly organization are developing digital library so that library patrons can access the information at their desktop. It has increased the quality of information saving the time of user. Digital library is not like a traditional library where information collected, processed and distributed to the users physical, but it is a network of multimedia systems and group of distributed repositories that users see as a single repository in digital form.
- **Reference linking:** reference linking software provide a means of intelligently navigating from one piece of information to other related information of interest. This saves the user time and allows discovery of more information related to a user interest.
- **ICT based Reference Services:** To save the precious time of the researches and scientists involved in R&D work, librarians are providing them information

services on their desktop. Use of E-mail, chatting helped the library patrons for putting the queries before the library staff and getting quick reply for their queries just sitting on their terminals in campus or outside.

### **4.3 Role of ICT for promotion and up gradation of Special Libraries**

Information communication technology (ICT) has brought significant changes to our day to day life. Today we are living in the information age. Information plays an important role in economic and social development of our society. The amount of valued literature is being published at a greater pace. So, applications of ICT in libraries have become the most important issues now. The present status of Special libraries in India is visible with the present status of ICT resources availability, library services with different pattern and variation in users demand from the libraries. ICT became a key for the special libraries to serve their campuses or institutions with communication technologies. ICT has enormously increase the organization of libraries to acquire, process, store the information and provide better service to the users. ICT helps the library personnel to make the library system more functional and organized.

According to S.R. Ranganathan, the growth of library is synonymously associated with the size of the library which has a great impact in the libraries in the ICT environment (Ranganathan, 1931). The emerging of information communication technologies (ICT) has brought many changes in the libraries. These technologies have facilitated LIS professionals to work together to acquire and share and provide better services to the user community. As a result, ICT is gaining increased attention in the service computing community. Library services in general and a reference and information service in particular refers to be personal assistance provided to users in pursuit of information. The reference and information services, provided to the library users may be categorized into three broad groups:

- Information services which are involve either in finding out the required information for the users or assisting the users in finding information.

- Instruction on the use of library resources and services; and
- User guidance, in which users are guided in selecting the most appropriate information sources and services.

The increasing availability of electronic information sources, emergence of web based digital libraries and use of desktop based search tools and agents have changed the notion of traditional reference and information services. The whole array of information and communication technology (ICT) enabled services are:

- Database search services.
- Bibliographic databases
- Full text retrieval
- Referral databases.
- Online database services.
- CD- ROM database services.

The computers have now become an integral part of our everyday life. They are used everywhere from industry to business, media to communications, schools to colleges to universities and where not. The recent advancement in communication & technologies has made tremendous changes in Library and Information science. The Library is an important component of any educational institution and organization. All traditional operations of Libraries are gradually shifting towards digitization. New issues like automation, digitization, networking, internet, multimedia, etc. are gradually coming up.

With the emergence of information communication technology (ICT) and the use of internet the traditional function of libraries, store houses for library resources have changed dramatically. ICT has a wide ranging impact on library activity. In present day the use of ICT in libraries is a positive sign to get right information at the right time in the right place at right cost.

ICT provides librarians the chance to re-explore and represent how the information or data collected are communicated to the users. As, information system is developing in

variations, so new resources are also coming out with variety. Librarians are becoming imperative adviser in the ICT environment. They are urging to help the readers (faculty and students) in finding out and analyzing many sources and to serve the readers as true adviser rather than just being the conservator of the library collections.

Special libraries and information centers are the natural outcome of the need for information, which serve a particular group of people and mostly maintained by associations, government departments, research institutions, commercial organizations. They make the users confident that they have the opportunity of getting all sorts of information they need in their own library. Normally a special library user wants specific information. Therefore, the staff of a Special library must be subject-expert, because the important function of special library is to provide information pinpointedly, exhaustively and promptly in the specific areas of interest.

Special libraries are attached to an institution or organization that always need valid, accurate and up to date information to make easier their balanced development and growth. To fulfill this balanced growth and competitive advantage, ICT has not only become an accompaniment to Special libraries but a crucial part towards providing effective and valid information services to its parent organization. ICT plays an important role in improving the services provide by Special libraries as a result of the incapability of the existing traditional method to handle the increasing and developed collections in the libraries. The ICT tools like computer and communication have appended various up to date proportions in handling information in libraries. ICT has provided an opportunity to libraries and information centers to arrange and serve new ICT based services and resources to the library users. ICT has made it possible to establish many new services, improved many existing services by applying developed technology, accessing of information become very quick and easy from anywhere and at any time. Using of ICT in libraries help the users to save their valuable time. So the impacts of ICTs are felt by the users in libraries in every side.

Scientific and technological revolution has led to globalization of science, technology and electronic communication which now-a-days play a dignified role in all scientific

endeavors. In the present scenario, the collection of libraries is not only limited to printed documents as earlier, but also accumulates huge amount e-resources and databases. In the last few decades, libraries have changed in many dimensions and directions than ever before after introduction of technological developments with the provision of unexpected opportunities and advantages for personnel and users altogether. In this context it can be said that, special libraries have acquired new skills to work on the new environment for better co-operation and co-ordination in library activities to overcome the challenges of new millennium. Libraries have a long tradition of universal repositories of knowledge. They are closely bound to the development of book culture and its manifestation as archives or independent documentation centers. However, with the introduction of completely innovative storage medium such as: Magnetic tapes, Magnetic discs, floppy disks, and CD-ROMs are having massive data storage capacity. The quality of work and activities of special libraries has been led from traditional to e-library. The modern libraries offer a variety of services like circulation of reading materials, reference services, and information services to their clients, optimizing services offering reading materials for the users from other libraries on inter-library loan basis, on-line information services at national and international level and so on. Apart from this, applications of electronic media are encouraging Special libraries to construct and participate in networks. A Library network helps to convert the entire libraries of the globe into a single information platform removing geographical barriers. Some of the popular library networks through which special libraries in India share their resources are enumerated in the following table.

**Table- 1: Special Library Networks in India**

Sl. No	Name of the Networks	Sponsor	Year	Application
1.	CALIBNET	NISSAT (Govt. of India)	1986	1) CAS 2) SDI 3) Union Catalogue 4) Library Automation 5) Full Text Documents
2.	ERNET	DOE & UNESCO	1986	1) E-mail 2) File Transfer 3) Remote Logon 4) Bulletin Board, etc.
3.	INDONET	CMC ltd. Informatics India ltd	1986, 1989	1) ACME 2) File Transfer 3) Int. Gateway
4.	DELNET	NISSAT & NCST	1988	1) Resource Sharing 2) Free S/W 3) ICE Online Facility 4) Books Thesis DBS
5.	BTISNET Network	Dpt. Of Biotech Govt. of India	1988	1) Data processing 2) Online Communications access 3) Facsimile Facility
6.	BONET	NISSAT & NCST	1994	1) Online Catalogue 2) Online Document Delivery 3) IRS 4) Inter Library Loan
7.	ADINET	NISSAT DSIR INFLIBNET	1994	1) Library Automation 2) Library Holdings 3) DB in Pryse
8.	MYLIBNET	NISSAT	1994	1) MYLIB Database 2) E-JIS 3) Food Patents 4) CFTRI Lib. Bulletin
9.	SIRNET	CSIR-NCST (Bombay)	1995	1) Scientific Communication 2) Leather Technology 3) Food Technology 4) Medeanal Plants
10.	DESINET	DESIDOC	1999	1) Scientific Research & Defence Communities
11.	NICNET	Planning Commission Govt. of India	-	1) ICMRNIC Center 2) MEDLARS 3) Chemistry Abstract Database
12.	VIDYANET	TIFR-Mumbai	-	1) Sharing 2) Resources, DBS, and Libs. etc.

From the above data , it can be inferred that the 1990s saw a remarkable growth of such networks in India facilitating sharing of a wide range of resources and applications- ranging from simple file transfer and e-mail to sharing of computer and Inter-library loan. Most of these networks, however, seem to be under administrative ambience of the Central Government providing limited access to their resources under the umbrella of so-called restrictive classes.

### **Benefits of using ICT in Special libraries**

ICT has provided new media, new modes of storing and communicating information. The application of ICT for various library operations and services has been increasingly steadily. Following are some factors, which have benefitted for application of ICT in Special libraries and information centers.

- **Information Explosion:** As a result of R&D, a huge amount of information is generated day today. And it is very problematic to manage such information using traditional system; Information communication technology covered these problems for betterment of libraries and information centers.
- **Rapid growth of information:** In this fast moving world information is being produced rapidly and within a small period it becomes outdated. ICT helps to provide the latest and updated in right time.
- **Electronic publishing:** Large number of database, journals, and periodical and other information resources are being published in the electronic form. In order to manage this type of information resources, libraries and information centers need computer and electro mechanical devices.
- **Quality Information Services:** To satisfy the users with quality of information services, libraries are providing them various kinds of computerized information services like SDI, CAS, Indexing, abstracting.
- **Time:** Researchers and Scientists are unable to spare much time for searching and filtering the information of their use due to their deep engagement in research activities. Therefore, librarians are using computerized storage and retrieval system and other services in IT environment so that users could get themselves updated with relevant information at their end without wasting the time.
- **Space/Storage:** Even for largest library of the world, it is impossible to manage the space to collect all material published in this world. But using computers storage devices has reduced the physical size of information resources. Online

electronic publishing and resource sharing has also solved space problem to some extent.

- **Manpower:** Now a day's job of libraries and information centers are not restricted up to acquiring and distribution of the books or information but becoming much more complex and difficult, if performed manually. Using computerized tools and techniques number of manpower may be reduced while efficiency can be increased.
- **Budget:** Cost of the information resources are hiking very much and budget of libraries are not adequate to acquire all relevant published information. Libraries are moving towards co-operative acquisition and resource sharing using networking and communication technology.

The library world is starting to be aware that it is moving into a new and very different environment from the familiar print based resource environment. This environment is electronic, digital, increasingly Web based changing rapidly. This gives rise to a number of constants such as rapidly changing technological environment; scarcity and shrinking resources, rapid increase in available information and changing and diverse user needs. These constant bring in change in the research and development information environment. In this scenario, the articulated mission of a Special library is to support the mission, strategies, directions and goals for research and development programs and institutional management of its parent organization. Moreover, there exists a direct relationship between the library's mission, the goals the libraries want to achieve, the means to achieve its activities and continuous assessment of its performance. Thus the special library's role to provide the information resources and related support services that user's need engaging in research. In our current evolutionary information environment the concept of evolutionary developments like new technologies, new user expectations, new information services are factored into continual operational changes. The rapid development that take places in the field of information communication technologies such as computer hardware and software, communication networks (computing and voice, and data communications) and computer application have drastically changed the shape of success and delivery of



scholarly information services in electronic form such as database, transaction processing system and other related resources. The technology continues to change at a rapid rate, as evidenced by the increasing power of the desktop, workstation, the emphasis on distributed computing, the ubiquity of electronic servers for text, numeric and graphic information and the evolution of the internet towards a national and global information infrastructure. The technological transformation has changed the information wrappings or content holders of journals, books, web pages, newspapers, media and reports. This change is continuous in nature. The mechanism of delivery of information content is changing also. This technological advancement makes an impact on the special library to provide user service with quality, depth and current necessary to support the mentor's well-defined objectives. This role necessitates the special library to rely heavily upon the high speed communication networks, computing hardware and software, access to external, networked resources, electronic scholarly information, library search engines and digital repositories, indexing and text data services and the like in order to provide the qualitative service to its users. The impact of the adaptation and assimilation of this recent technological advancement by the special library is highly visible in the services offered by it. In this scenario, computing and telecommunication technologies (the Network) in special library are perceived by many to be the vehicle that will enable the library to provide a cost effective and qualitative service to its users. Library resources, both local and remote, and local library services are increasingly dependent on local network structures. An increasingly slice of the library's and its parent institution's resources are allocated to creating and maintaining computerized networks. Considerable efforts are made to integrate electronic resources in order to foster the primary role of delivering quality research from users. In many ways, the library is in a leadership role in adopting and making efficient use of the new emerging technologies and the services that they enable. Thus there arises a need to benchmark the computer networking aspects that is taking place among special libraries.

**Problems in using ICT Application in Special Library Services**

It is misleading to assume that the introduction of ICT in Library services provides a perfect and trouble-free information management possibility. There are various problems encountered in the application of ICT in library operations, such problems include:

**Lack of funds:** ICT is a capital –intensive venture both in acquisition, installation, maintenance, training and sustainability. As a result, not all libraries do have funds to venture and sustain ICT on their own.

**Lack of adequate power supply:** ICT equipment depends solely on electricity power supply for functionality and effective performance. This is one of the reasons why many information professionals are not enthusiastic about computer-based Library system. Pertinently, frequent power outages remain a problem in the country and constitute a serious problem to automation. This makes the cost of running power generating plants prohibitive for libraries.

**Lack of appropriate technical skills, education and training:** Presently there is a low level of ICT skills among information professionals in the country; most of them have little or no skills to work with computers, browsing and surfing the internet to access and retrieve information.

**The issue of phobia:** This has been of serious concern, more especially to the traditional librarians who show fear in handling computers and its associated equipment.

**Inadequate infrastructural facility:** poor infrastructural facility portends a major constrain in the implementation of ICT. Information and Communication Technologies are a combination of both hardware and software to access, retrieve and disseminate information. Lack of adequate bandwidth size and the appropriate

antivirus and other necessary software can deny both information professionals and users optimum utilization of the facilities on ground.

#### **4.4 Conclusion**

Information is treated as valuable commodity in this world and it has a vital role to play in every sector of human life. In the pursuit of up gradation, the biggest challenges faced by the special libraries are probably the inadequacy of ICT infrastructure, hardware and software, as well as shortage of trained staff and professionals. ICT has dramatically changed the way in which information is retrieved and disseminated and provided essential services to the clients. The use of technology becomes the benchmark to the users of library to get relevant information services. Utilization information communication technology (ICT) in present situation to libraries is a buoyant to get right information at the right time in the right place and at the right cost. Information technology helps in developing the position of libraries and it helps in reducing the work pressure of the library personnel. ICT has crossed the worldwide boundaries to provide quick and better services to its users. The future of library and information services is depend mostly upon the development and application of ICT. The activities and services of libraries can be enhanced and developed by suitable use of ICT in an appropriate way. The explosive nature of information communication technology (ICT) has influenced and reshaped the environment and activities in all type of libraries in this new age of explosion. Information communication technology has changed the special libraries in an intense way. It has impacted on every sphere of special libraries. The main and foremost function of a library is to acquire information or resources from various sources and organize process and deliver them to the users at right time to fulfill their needs. It's difficult for a library to meet the needs of the users so quickly and fast, like the traditional way. So the application of ICT tools helps the librarian to communicate with the huge information according to the needs of users in quick and easy way. Effectual implementation of ICT in the libraries conveys users' satisfaction. The present environment of the libraries asked for modernize technology for very quick,

faster and easily accessible services. Unspectacularly new technologies are developing, so, there is the necessity to develop the skills and capacity of the library personnel to provide magnified library services. The development of ICT in libraries is the crucial part to expanding the level of library operations and services.

In this study an attempt has been made to examine various aspects and analyze the opinion and perceptions of library staff and users on ICT applications in Special libraries and information centers in the state of Assam. The study also attempts to discuss the present status of ICT resource availability, changing pattern in providing library services and changing approaches of users of Special libraries of Assam. It also covers the previous situation, present condition and future prospects of library services and functions of these libraries. The findings and recommendations of this study should hopefully lead to a clarification of many problems in the adoption of ICT tools and applications planning and policy making regarding overall management of library. It is assumed that it would help the librarians, policy makers and concerned authority to develop and implement suitable systems with effective use of ICT based tools and applications for better services to the users and monitoring library resources for greater accessibility. However, all the possible investigations have been made to collect data related to the study in order to give a complete opinion. If the work is found useful to the planners, librarians and information specialists, the efforts undertaken would be successful.