<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Topic</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Introduction</td>
<td>118</td>
</tr>
<tr>
<td>6.2</td>
<td>Steps in Library Automation</td>
<td>121</td>
</tr>
<tr>
<td>6.3</td>
<td>Impact of it in Academic Libraries</td>
<td>124</td>
</tr>
<tr>
<td>6.4</td>
<td>Computerization in Academic Libraries</td>
<td>125</td>
</tr>
<tr>
<td>6.5</td>
<td>Library Automation Softwares</td>
<td>130</td>
</tr>
<tr>
<td>6.6</td>
<td>Networks of Libraries</td>
<td>133</td>
</tr>
<tr>
<td>6.7</td>
<td>Digitalization of Library</td>
<td>136</td>
</tr>
<tr>
<td>6.8</td>
<td>Abstracting Service</td>
<td>137</td>
</tr>
<tr>
<td>6.9</td>
<td>The Computer and Pharmacy Library</td>
<td>138</td>
</tr>
</tbody>
</table>
CHAPTER 6: LIBRARY AUTOMATION

6.1 INTRODUCTION

Library computerization is the advancement of library, which make it service and function more specific and useful in nature, by implementing the computer in library as material storing and easy accessible mode of the materials it accumulates and generate the new technology in terms of storage and maintenance of library materials than old functioning of the library. Computerize library will serve as advance and handy source of the material to make teaching easy and understanding. Time reduction and easy availability of materials and universal availability is the main important advantage this technology for the users, these needs proper planning and active implementation.

The starting of library automation was started with the advent of computer in personal computer (PC) form which belongs to use of computer, use of internet, various magnetic information storage devices like, CD, Floppy, disks, optical media, etc. It sure the users for information required at any place at any time at anywhere in the world with in the click of mouse. It fulfills the necessary demand of the user by performing every activity effectively like: easy access, speed, efficient working, economical, rapid, adequate and handy etc. So ICT make it easy and pave the way for automation in libraries (Ahmad & Iqbal, 2009).

Radio-frequency identification is functioning at its peak for paving the way to protect the library from thief. It is more commonly known as RFID tag applied to or incorporated into an information product for the purpose of its location in the geography. Numbers of softwares are available for the library automation: Evergreen, CDS Invenio, Koha, New GenLib, PMB, Php My Library, Open Biblio as well as many commercial software: SOUL, Alice for windows, Netlib, Libsys etc.
6.1.1 Definition of library computerization

Library Computerization may be defined as the application of computers to perform traditional library housekeeping activities such as acquisition, circulation, cataloguing, and reference and serials control.

According to Encyclopedia of Library and Information Science “automation is the technology concerned with the design and development of process and system that minimize the necessity of human intervention in operation” (Allen 1997).

6.1.2 History of library computerization

The standard Punched cards were founded by Hollerith in 1880 and it used in framing the US census data. The library at the University of Texas was the first to use punched cards in 1936 for circulation control. The Library of congress used the unit record machines for the generation of catalogues in 1950. Many libraries in the United States followed the system for automating their activities.

Library Computerization entered into its second era in 1960 with the advent of personal computer. The notable ventures were MARC, MEDLARS, etc. Until the early 1990, “Library automation” involved generally the same features as those in place since the advent of machine-readable cataloguing record in the late 1960s. Libraries formed integrated text based systems using micro/mini computers in which traditional library housekeeping procedure was computerized using the library’s information as the foundation.

In the last decade, library computerization has undergone a change that reflects converting definitions of library service in general and access to resources in particular. The advent of the networking through the internet changes the information sharing and the networking with distance placed library is increased.

This advance library system not only perform the old age library function but also it make the library enough strong to connect it with the local as well as the global system for the sharing and using of information.

6.1.3 Need for automation in library

The need for automation has several reasons. Need of computers is present in all areas depending upon its usage. They range from acquisition control, cataloguing and circulation control. They
are also used for library manager’s evaluation of reports, statistics etc. For the good administration of the library, computers are use in all levels of workflow. Above all, the unique characteristics of computer made it right voice for the library world.

It is the challenge of library to maintain its function and services in this changing era. This change is just imagination and implementation of today’s resources for the use and to satisfy the need of tomorrow. It is the process which brings the library form the house maintenance of material to the global networking system for sharing the material. Marketing, quality, and technology costs are the major change elements, out of these, quality is easy to recognize but difficult to define, which play important role for the maintaining the quality of library. Library automation helps in managing library resources and provides better and wider access to resources to the users. Therefore, complete automation in libraries has become the need of future because shortage of staff will not adversely affect the services and functions of the libraries in advance library environment (Rajput & Jain, 2006).

There are various reasons for automation:

✓ Information explosion (Growth of documents)
✓ New techniques
✓ Lack of space
✓ To save the time of the reader
✓ To improve the control over collection
✓ To avoid the duplication of work
✓ Greater efficiency
✓ Accuracy and promptness

6.1.4 Benefits of library automation

It fulfills the implications of the Ranganathan’s five laws of library science; especially the concept of the fourth law i.e. ‘Save the time of the reader’. In addition, there are many benefits of it which are listed below:

1. It gives the multimedia facility. Some automation S/W gives the image of resources in OPAC (such as Alice for Windows S/W).
2. It prevent theft of library resources with RFID system.
3. Staff can implement rules only one time and S/W will provide results automatically.

4. Check-out process of library document is very easy or it may be self check-out process, so there will be no queue of users in library.

5. Circulation is one of the most affected area of library

6. Services, which saved a lot of time of users as well as staff.

7. With the help of WEB, users can search information from anywhere at any time. Users can easily do the reservation of library sources.

8. Users can do self circulation of library resources.

6.2 STEPS IN LIBRARY AUTOMATION

6.2.1 Redefining and planning for library automation

Library automation is a very complete process and needs exhaustive planning looking to the present and future needs of the users. This includes hardware, software, money work force, materials and mechanics (4M’s), obsoleteness, updating, adoptability and very fast changing IT environment (Pandey, 1995).

6.2.1.1 Feasibility study of your plan

Immediately after the analysis and design for the system has been completed, a feasibility study must be conducted. The aim of a feasibility study is to determine if the project is achievable, if the benefits outweigh the disadvantages and to examine alternative solutions.

6.2.2 Selection of hardware & others required equipment

System Purchase:

The following configuration of hardware and software would be preferable:

- **Processor**: Intel Core i3/i5, 2.10GHz, 1333, 2M cache
- **Operating system**: Windows XP Professional/window 7
- **Memory speed**: DDR3, more than 1GB
- **Graphics**: Integrated 1GB
- **Hard Disk Drive(s)**: Up to 500GB 7200 rpm Serial ATA
- **Networking of Computers (LAN) in library**: Wi-Fi and Bluetooth Connectivity, USB 2.0
Conversion costs: This includes the costs of maintenance of the catalog and patron records.

Site preparation: Updating electrical wiring, updating power supply cable for networking, furniture that may need to be done, and sufficient HVAC system.

6.2.3 Selection of library software & others required software

To select the right software, the librarian has to set the following selection criteria: who made the software, whether it is company, parent institute or any private organization. The first preference is to parent organization and then private company. One has to be skeptical about the software developed by individuals as there will be no continuity. In addition, the number of things should be checked after the installation of the software.

Integrated library management system: System in which the various applications share one bibliographic database. Each system comes with a set of different modules from starting to end, which can be added on, if necessary. The system should

Core modules: Cataloguing circulation and online public access catalogue are necessary minimums.

Client-server architecture: A client-server system must require efficient server that handles database maintenance and retrieval while leaving the user interface to the desktop client software.

GUI interface for all modules: Menu-driven interfaces and graphical have or are replacing command- driven interfaces in systems.

MARC 21 and non-MARC compliance: First, library systems developed to use MARC records. Now systems must allow for cataloguing formats, such as internet resources, for which no MARC formats yet exist alongside MARC records.

Web-based patron catalogue: Patron access is increases when catalogues can accessed remotely via the World Wide Web.

UNICODE: This protocol expands the character set allowed and is essential for collections with materials in non-roman languages.

RFID (Radio frequency identification technology)
RFID is the latest technology to be used in library theft detection systems. Accordingly, today’s integrated system must not only provide access to the circulation, public catalogue (OPAC), traditional cataloging, and acquisitions modules, but must be able of connecting through the local system into the systems of other remote bibliographic databases, CD-ROM drives, vendor, on a local area network and the Internet.

6.2.4 Finance matter

Finance is an important aspect of any planning and automation like Hardware, Software, Training, Staff, Networking (LAN, WAN, MAN & Internet).

6.2.5 Developing a strategic plan

Planning of library automate should initiate a process by which working staff and users can identify service needs and objectives. The main purpose of this is to articulate their interests and concerns share perspectives and learn about possibilities in a collaborative setting. Group interaction is an important contributing factor in the success of the goal, which is to develop and sustain library automation in the years ahead.

6.2.6 Setting service priorities

Strategic vision should now facilitate the framework or context for the next step in the automation procedure, which is to estimate which library functions should be automated and in what order of priority.

6.2.7 Developing a formal specifications document

Utilizing RFP to solicit written responses from vendors makes it possible for you to cost, channelize and compare functionality, support, maintenance, and all the other issues that are involved in system purchasing. The process will be useful in cost cutting and save time.

This highlight the important topic among the few: Technology plan, Mission statement, Libraries service plan, Library background information, other supporting information, technical inventory of your existing software/hardware, and infrastructure.

6.2.8 Criteria for vendor (For hardware & software) selection

System evaluation and selection is started with the availability of the vendor proposal. This process involves the numbers of key factor and parameter:
✓ Assign score or point values to the criteria listed in the RFP and to different proposals.
✓ Compare studies: Do compare study of all received proposal from vendors with theirs features etc.
✓ Let the vendor show their policy; however, be prepared with the question and queries with which the vendor will come out with answer.
✓ System demonstration should be evaluated.
✓ Plan a team for the evaluation and report of the functioning system with those who are efficient in the respective field.

6.2.9 Implement your system in work

After the selection of any system there are few stem which must me follow to step it ahead. The personal negotiation with the vendor by communication is required. Test the stem as per your requirement and use. You will want to make provisions for system maintenance and select appropriate conversion plan.

6.2.10 Database

To acquire hardware and software, librarians do not under estimate the value of database, Database is a heart of any information required by any type of users.

6.2.11 Results of your good planning

✓ Confidence that you are aware about the firm basis of understanding and a methodology (the planning process) for future planning;
✓ Confidence that you have the capability to respond quickly and effectively to unexpected opportunities and challenges
✓ Confidence that you have chosen the best possible system available, give technological and financial constraints;
✓ Confidence that automation activities are being administered as part of a clearly articulated, overall plan for the development of library services; and,
✓ Confidence that you have satisfied the priority needs of your library;

6.3 IMPACT OF IT IN ACADEMIC LIBRARIES

Since last few decades, Computer based library have increase the efficiency of working environment. It is the vital effect of the information technology on the resources is being used.
Academic libraries and research libraries in India need to coordinate their information requirements and plan for resource sharing. Information technology play role in library are listed below:

- Aim is on effective & focused use of technology
- The introduction of technology should enhance the learning environment.
- Efficient delivery of information
- Provides opportunities to share, collaborate…
- Enabler

### 6.4 COMPUTERIZATION IN ACADEMIC LIBRARIES

Library which serves for the technical and educational institute to facilitates the requirements of resources for the teaching and research function. In developed countries, computerization of libraries started in 1940s. The first use of computer in library and information centers in India was reported in 1965 at INSDOC, now known as NISCAIR, New Delhi. Some of the well known library software of foreign origin is Alice for Windows, Libsys and Virtua etc. Other Library software packages developed in India SOUL, Granthalaya, Maitreyi, Sanjay, DELMS, Librarian, WYLYSIS, LIBSUIT, etc. Few of them have been developed by the Govt. organizations, while other by private software companies. Networking is the linkages of working procedures for exchange of information resources. Presently the term “computer network” is used in place of “resource sharing”. Resource sharing is defined as a mode of operations, whereby information resources are shared by a number of participants. Digitalization is an essential and expanding medium for providing online access to journal articles, databases, project, images and more (Harinarayana, 1991).

The SOUL software is developed by the UGC specially for the university libraries. The scientific and technical libraries working under R & D institutions (CSIR, ICMR, ICAR, and DRDO) have initiated the library automation. Several software development and research programmers are running by these institutions which have played an important role in increasing awareness of the use of the new technologies. Hardly, very few libraries have use the information and implemented the automation in library. The few reason of it is here:

- The academic libraries are part of institution.
- The lack of highly qualified faculty, technical and research staff.
✓ Academic libraries are emphasis for the performances and improvement for services as are scientific and technical libraries.
✓ Libraries have to compete for limited resources.
✓ Academic libraries function in a relatively less autonomous environment in India.

6.4.1 Areas of library computerization

As a first step in a planning process, it is desirable to formulate a model for computerization listing all itemized and prioritized information systems being maintained on a manual basis by the library. For this exercise it is necessary to break down these procedures into their constituent parts. When further subdividing these activities, each item is to be considered of its functional elements. The systems and subsystems listed below are only indicative and may vary with differing library system environments. These are (Mahapatra, 1985):

✓ Acquisitions
✓ Technical services
✓ Cataloguing
✓ Circulation
✓ Serials control
✓ Reference Services
✓ User tools
✓ Bibliographic utilization
✓ Reprography
✓ Inter-library communications
✓ General administration
✓ Grants administration
✓ Library publications
✓ Bindery
✓ Periodical citation searching
✓ OPAC
✓ Bibliographic database

6.4.1.1 Growing information and shrinking space
The enormous growth or information explosion of literature in each area, subject in number and size and results fragmentation of literature and increasing specialization in every field of knowledge. Computer application can solve this problem, as it is capable of storing huge bulk of information on tiny storage mediums i.e. a CD-ROM can store the text of the complete set of Encyclopedia Britannica. Serials, abstracts, indexing periodicals etc. are already available on CD-ROM.

6.4.1.2 Incensement of users and organizing the flood of information

Increasing the number of clientele of library and information centers and their specialized desires forces us to change the method of organizing information because traditional methods is going to become inadequate. The manual method has serious limitations and, facing problem to make users reading material available from the wide range of publication form many different resources.

6.4.1.3 Cost hike of printed as well as electronic reading materials and resource sharing

The rapidly enhancement price of information materials motivated the library and information centers to share their resources. They realize that the only way they could fulfill their client groups is by effective cooperation between libraries, information centers and networks and by sharing of all type of resources.

6.4.1.4 Enhancement in budget

As increasing the members of the library, cost of information materials, services and growth of information or information explosion, the budget of the libraries is also raised. That is also allowed us to automate the library activities and make maximum utilization of the library funds.

6.4.2 Areas and services of library automation

Library automation is process which include the different terms related to the, update, acquisition, storage, location, manipulation, processing, repackaging or reproducing, dissemination or transmission or communication, an improving the quality of products and services of library and information centers. It enhance the speed, productivity, adequacy and efficiency of the library professional staff and save the manpower to avoid some routine, repetitive and clerical tasks such as filing, sorting, typing, duplication checking etc.
6.4.2.1 Information resource building

Acquisition of books, monographs, audio-visual, electronic materials such as CD-ROM, maps and so on. There are some specific functions of an acquisition process. Suggestion, recommendations and selection of library collection:

- Duplication checking, library holding checking
- An vender selection
- Preparation of order, cancellation of order lists with terms and conditions of the supply, checking of overdue orders
- Record of items on order
- Record of received and non-received items and receipt to the vender
- Items verification with order file and invoice
- Inspection of items by the concerned department
- Prepare for payment after accessioning
- Prepare budget and maintain accounts and statistics subject wise etc.
- Final report, Items, subjects wise, chronologically, booksellers report etc

6.4.2.2 Data entry

Database is required for each

- Books
- Clients/members
- Serials
- Audio-visual
- CD-ROMS and Floppies
- Gifted items
- Maps, Reports etc.

6.4.2.3 Classification and cataloguing

- Catalogue card production
- On-line cataloguing
- Duplication checking of catalogue cards
- Production of duplicate catalogue cards
✓ Preparation of authority file subject heading list
✓ Shorting, checking and filing of catalogue cards
✓ Automatic generation of added entries (author, title, series, etc.) generation of monthly accession list
✓ Developing centralized and on-line cataloguing

6.4.2.4 Circulation control

✓ Registration/ cancellation and make bound time for membership
✓ Issue, return, renews reservation of documents and produce the slip for proof
✓ Charges for late, lost book, binding and production of penalty slip
✓ Maintenance of circulation
✓ Interlibrary loan.
✓ Use of bar code system
✓ Report statistics of circulation

6.4.2.5 Serial control

✓ Input essential serials data.
✓ Order list of new serials
✓ Mode of payment, prepare for payment
✓ Receipt and updating the records
✓ Receipt to vendors or publishers
✓ Preparing the list of present holding, additions, missing, cancelled serials chronologically, subject-wise etc.
✓ Renewal and cancellation of present subscriptions
✓ Sending reminders and follow-up of missing issues
✓ Binding control
✓ Accession register of bound serials
✓ Prepare budget and maintain accounts statistics such as subject wise, binding etc.

6.4.2.6 Documentation and allied services

✓ Indexing and abstracting of micro and macro documents. Thesaurus construction
✓ Compilation of union catalogue
✓ Bibliographic control
✓ Current awareness services
✓ Literature search
✓ Selective dissemination of information
✓ Newspaper clippings

6.4.2.7 Information retrieval

✓ Database creation and maintenance, interactive, searching, saving of in house as well as external databases
✓ Search and print outs of quires against specified requirement.
✓ Such as about the books (issued, reserved, lost, overdue, weed-out), member-ship, inter library loan, penalty charges, periodicals, newspaper clippings, reports etc.
✓ According alphabetically, chronologically, subject-wise, members-wise, keywords with each particular such as accession no wise, title, author, call number, edition etc.

6.4.2.8 Communication networks

✓ Library cooperation
✓ Access to database
✓ CD-ROM services
✓ Online search
✓ E-mail
✓ Access to internet

6.5 LIBRARY AUTOMATION SOFTWARES

In the recent few years the plentiful of new softwares have been developed for the library. DESIDOC, SAIL, ICRISAT, BHEL R&D, INSDOC, NIC, and IIT Kanpur have succeeded in this sphere. Libsys, Soul, Sanjay, Alice for Windows, Suchika, Maitayee, Koha etc. are software packages used by various libraries (Patel & Patel, 2012).

SOUL

SOUL (Software for university libraries) is the software designed and developed by the INFLIBNET an inter university centre of UGC. INFLIBNET is working in the field of library
automation, database development, networking, and resource sharing. Software development for library automation is one of its important activities, which were initiated in nineties to overcome the monopoly of commercial software vendors. SOUL is installed in 1455 institutions (Up to 27th December 2007) (INFLIBNET, 2007) which works for the client-server atmosphere. By looking to the name of software anybody can judge that it is used for the library only, but it is useful for the any organization for the implementation to any type o library in any size. Many academic, special and public libraries from India are using this software for their library automation (www.inflibnet.ac.in).

**ALICE for Windows**

It is an integrated library automation software package is the product of Sofrlink, a Brisbane based Australian company. AFW is using for library automation with over 15000 installations worldwide, including about 180 in India.

It is meaningless mentioning here that out of the above fields barcode, GMD, accession date and loan category fields are mandatory to be recorded to navigate further. The class number field of a catalogue entry may make use of any of the two-classification system, i.e. library of congress classification scheme or dewey decimal classification. It is noteworthy Alice supports USMARC format. Title of any resource triggers automatic duplicate evaluation that brings the closest match, provided the title is not present in the database. AFW caters for cataloguing multiple copies of individual titles, which may be shelved at one or multiple locations. A numbers of materials may be catalogued including sound recordings, bits maps video recordings, equipment World Wide Web sites, electronic documents, etc.(www.softlinkasia.com).

**LIBSYS**

It is a fully integrated multi-user library system based on client-server model and supports web-based access, open system architecture, and GUI. This indigenous LMS is designed and developed by Lib System Corporation, New Delhi. LIBSYS has seven basic modules – Acquisition; Cataloguing; Circulation; Serials; OPAC; Web-OPAC and Article indexing (www.libsys.co.in).
The major advantages of using LIBSYS are as follows:

- Based on client-server model and TCP/IP for communication and networking provides ANSI Z 39.50 complaint web access for making the server accessible through Internet/intranet
- Internet/intranet Supports web OPAC for access of bibliographic databases through internet/intranet
- Supports standard bibliographic formats like USMARC, UKMARC, CCF, UNIMARC etc.
- Includes images and multimedia interfaces with LIBSYS search engine
- Supports barcode technology for membership card production and circulation
- Offers SDI, CAS, fine calculation, e mail reminders etc. utilities

SANJAY

The NISSAT sponsored a project to DESIDOC for developing programmes on UNESCO’s CDS/ISIS for enabling a library to do acquisition, circulation, etc. DESIDOC has successfully modified the programmes and a new package based on CDS/ISIS was released in 1992 by the name of SANJAY. So, Sanjay is an augmented version of CDS/ISIS with modules prepared for the various housekeeping operations. The software is totally menu driven and works in windows environment with LAN support. In India, NISSAT is the marketing agent of this software. The package was released for marketing in September 1995 (www.netugc.com).

GRANTHALAYA

This CUI based (DOS & UNIX) modular LMS is developed on FoxPro by INSDOC for medium range libraries. It includes all the modules required for day-to-day library operations. The package is made of seven modules–Library administration; Query; Circulation; Acquisition; Serials control; Technical processing and Data administration. The salient features of the LMS are based on object-oriented design (www.egranthalaya.nic.in):

- Supports CCF and ISO 2709 for import & export
- Generates a dictionary for various data elements for easy searching
- Supports Boolean operators and range searching
- Provides online help through screen messages

KOHA
It is the first open-source Integrated Library System (ILS) developed under GNU license. Initially started at Horowhenua Library Trust (HLT), a New Zealand consortium, now it is used worldwide; growing community of libraries drives its development (www.koha.org).

**CDS/ISIS**

It is set of information system developed by UNESCO, distributed in India by NISSAT free of cost is table driven, generalized information system focused for handling non-numerical information of any volume, with special features of advanced programming in PASCAL. It has a version that runs on disk operating system VST, MVS or DOSIVS or IBM 370, 303x, 43 xx., its mini-micro version can be run on PDP- II series or on IBM- PC (XT -AT) or compatible microcomputers (www.unesco.org).

### 6.6 LIBRARIES NETWORKS

Networking is defined as coordination of various activities related to physical network supports system. Presently, the term “computer network” is used in place of “information sharing with universe” or coordination of various activities. Information sharing or networking is the mode of operation to share information resources by a number of participants having the same thought and objectives in their same direction. Thus, the user of one library can get his/her information by another library if the local library fails to serve his needs or requirements. The main object networking is to achieve maximum results with minimum input in various develop and developing fields. This is clearly consonant with the nature of our economy. Networking is inevitable in all types of libraries (Rao, 1986). The benefits of information resource sharing are given below;

- To prepare the cataloguing data and catalogue cards details which are available in net libraries;
- Maximum utilization of rare collections;
- Storage of documents;
- E-Learning
- Creating center of excellence
- Provision of bibliographies;
- Saving in the cost of library services, in the long run to provide better service to users.
In present age of modernization and globalization in the field of telecommunications and information technology internet facilities have been developing fast at villages, towns, cities and Mega cities as well as at foreign i.e. all over the world since the three decades. Considering the present needs of the users UGC as well as government machinery is giving support in developing INFLIBNET, DELNET, CALIBNET, BONET have started functioning in libraries.

**INFLIBNET**

INFLIBNET started functioning in 1988 with the aim of optimizing the utilization of resources and avoiding their duplication. INFLIBNET has proposed to network 303 universities, 7,277 colleges, and over 207 research organizations attached to space technology, engineering, agricultural, medical, social science, and defense organizations (DRDO). The main objectives of the INFLIBNET are (www.inflibnet.ac.in):

 ✓ To evolve a national network, interconnecting various libraries and the information centers and create database of projects, institution, and specialist for proving online information services.
 ✓ To provide reliable access to document collection, bibliography, factual data numerical database and document delivery services
 ✓ To implement computerization of operation and services in libraries and information centre to facilitate scientific communication amongst scientists, engineers, researchers, social scientist, academics, faculties and students.
 ✓ To develop suitable professional manpower and evolve standards and uniform guidelines in technologies

**The salient features of INFLIBNET are given below:**

 ✓ Help the libraries to develop unique collections and avoid duplication in procuring costly books and journals to improve their efficiency
 ✓ Contribute to pooling, sharing, and optimizing resources as an information centers.
 ✓ Help the libraries to update and arrange their catalogues.
 ✓ Operate at different levels -national, regional, sectorial and local.
DELNET

DELNET was started at the India International Centre Library in January 1988. It was registered as a society in 1992 and was initially supported by the National Information System for Science and Technology (NISSAT). It was subsequently supported by the National Informatics Centre. It was established with the prime objectives and aims of promoting resource sharing among the libraries through the development of a network of libraries to collect, store, and disseminate information besides offering computerized services to users, to coordinate efforts for suitable collection development and also to reduce unnecessary duplication wherever possible. It has 4218 libraries as its members, of which 241 libraries are in Delhi, 3954 outside Delhi in 32 States and Union Territories and 23 in overseas countries.

DELNET has been actively engaged with the compilation of various union catalogues of the resources available in member-libraries. It has contributed a lot towards the modernization of libraries in India (www.delnet.nic.in).

CALIBNET

This network links 38 science and technology libraries in the Calcutta metropolitan area. The plan focuses on the introduction of automated systems into the participating libraries before networking them. Each library will have to automate its book acquisition, cataloguing, serials control, fund accounting, user services and circulation control. (www.itt.nissat.tripod.com.).

BONET

Bombay Library Network (BONET) was inaugurated in 1992 in order to facilitate reliable access to document collection, bibliography, factual data numerical database and document delivery services and access to the resources of many libraries in and around Bombay. About 50 libraries were covered by this network. Using computer facilities provided by NCST, any member of BONET could get network access. This access covers electronic mail and on-line access to remote databases, both Indian and foreign (Satyanarayana, 2003).

NICNET

NICNET has been set up to link government departments for decision optimization. With the successful implementation of data communication between NICNET at Delhi and RJE station based on microcomputer at Ahmedabad through apple satellite, linking computer in 16 major...
state capitals in India to NICNET via the INSAT-IB satellite. This would facilitate the development of interactive database with query systems for the central and state governments (www.gurgaon.nic.in).

6.6.1 Constraints of networking

There are several constraints in the networking of Indian libraries. Higher education authorities still have a dilemma as to whether or not resource sharing is possible through networking. These are the problems faced by the libraries:

✓ Information infrastructure is not up to date
✓ Lack of trained manpower, funds, compatibility, standardization and motivation
✓ Lack of effective networking and communication technology
✓ Lack of foreign exchange for importing proper hardware

6.7 DIGITALIZATION OF LIBRARY

✓ Libraries have to provide the best services to its users, in order to meet the user’s requirements, libraries in the past have updated their collections. In the present scenario, libraries must not only update their collections but also provide better access to information through the new information highways. This can achieved through digital archives. Digitization in libraries is today’s response at a faster delivery of information to its users through the digital archives. The concept of digital archives originates the rapid advancement of ICT. The advent of digital archives has great impact on libraries. It provides information very fastly to the end users. The digital archives means: collect the information & stored it, in machine-readable format or digital format for dissemination to end users. The digital content can easily reproduce at globally. Digital archives can be as (Ahmad & Iqbal, 2009):

6.7.1 Digital library

A digital library is a library in which all collections of a library are stored in digital formats and anyone can access to these collections without any problems. The digital content may be stored locally or accessed remotely via computer networks. A digital library is a highly organized collection of electronic resources.
6.7.2 Repository of institutional

An institutional repository (IR) is a web-based database system of any institute’s scholarly materials which include works of various stages in the process of scholarly inquiry. In addition to published works, an IR may include preprints, working papers, thesis & dissertations, data sets, images, course materials or anything else a contributor deposits. The main function of institutional repository is to collect the necessary materials to store and disseminate in digital format for widely used.

6.7.3 Advantages of digital archives

Some basic advantages of digital archives, which are as follows:

1. To provide a large number of users’ at single time access to unique or special collections.
2. Users accessibility for information and content can be delivered directly to end-users and retrieve in control way.
3. Digital materials are easy to reformat, edit and print.
4. To providing access to the primary material can help to “publicize” the material to other departments and peers, and to demonstrate the benefits of the collections.
5. Useful to save the place.
6. Time saving to the users in searching of information.

6.8 ABSTRACTING SERVICE

Abstracting service is providing current and retrospective literature chosen fields with abstract as well as citations of articles and papers appearing in reports, current journals, conference papers and proceedings. Abstraction is the process or result of generalization by reducing the information content of a concept or a detectable phenomenon, in order to retain only information, which is appropriate for a particular purpose.

Bibliographic service is applicable to control the different varieties, complexity and variety of information. For recording bibliographic information, there are several national and international standards e.g. IS 2381-1963: Recommendations of Bibliographical Reference, R77-1958: Bibliographical Reference-Essential Elements, R690-1968: Bibliographical Reference-Essential and Supplementary Elements.
Reproduction of documents includes supply of photocopy of document. Usually supply of photocopy is made for journal articles, conference papers, brief reports etc., this service is given only on the individual basis to avoid copyright violations.

Inter library loan service in a network environment can be carried out by sending request through e-mail. The receiver locates the relevant material if it is available and sends the required information to the requester thorough e-mail, courier or fax.

Union catalogue service provides the union catalogue of books, monographs, serials and non-book materials held at different libraries in the country and information regarding the specific library or libraries where required information is available.

6.9 THE COMPUTER AND PHARMACY LIBRARY

Due to development in technology in the field of pharmaceuticals and their education, there is an inbound effect of use of the computer. This effect will be continuing in future. For the researchers and pharmacists latest, information technology is essential. Example for measuring injuring to body and system used to diagnose this matter by recent chemical analytical methods. Their contribution in the profession of pharma field is important than the other profession. In the world today’s research will be outdated tomorrow, as a results of pharma professions are required to up-date their students regarding latest use of technology and system. During the theory and practical classes in pharma education as a teacher, we have to provide sufficient guideline to the students about novel technology. Today, education without computer in pharmaceuticals education is relying not fulfills the current requirements. Subjects have their own contribution for the use of computer knowledge. In future, the long lasting effect of use of computer in pharma profession is ongoing process.