Chapter 4
INFORMATION TECHNOLOGY USE IN COLLECTION DEVELOPMENT IN LIBRARIES

4.1 Introduction

In any research and development work Information Technology (IT) plays a key role. Today competitive and wired world information is the basic resource needed for survival. The whole process of collection development has changed due to the information technology. It is a vital ingredient for cultural and socio-economic development of any individual or nation. According to Kemp “Information is considered as the fifth need of man ranking after air, water, food and shelter” (Pujar, 2007, p.190).

Information is very vital for human life. Many researches have to be done to develop or acquire new information. Most of the information available today is the result of extensive research. The research field include science, technology, humanities, social science, etc. Research & development play a major role for generating the vast source of information, that world is being multiplied the information leading to the phenomenon called as “Information Explosion” (Laloo, 2002, p.1)

The traditional concept of libraries has changed due to rapid development in information & Communication technology. The conventional libraries has developed a metamorphic change in relation to storage of information, preservation of resource in different media format such as audio, visual, print and other multimedia and dissemination of information. The invention of optical fibre communication, satellite and internet has resulted in explosion of information and globalization ultimately. The
The concept of libraries has to be changed from print media to digital resources. All the earlier conventional types of storages, retrieval and dissemination of information have been changed to digital format.

**Information need:** The Librarian’s thesaurus defines information need as “that need which library services or information intended to satisfy” (Soper, 1990, p.2).

Line (1974) has defined information need as “What an individual ought to have for his work his research, his edification, his recreation etc” (p.87).

### 4.2 Application of Information Technology in LICs

“Information technology” is a generic term with wider use in libraries. It includes a telecommunication and computer technology which is used for collecting, organizing and disseminating information. Mathew (2011) in his work while describing an information technology stated about as:

- Methods and tools of recording knowledge like computer storage media (Magnetic: Floppy disk, hard disk, tapes and optical storage devices-like CD-ROM, DVD (Digital versatile disk) Re writable CDs and DVDS)
- Methods of record keeping: computer software, computer hardware and other computer databases
- Method of indexing information and other document: machine readable catalogues, computerized indexes, etc. and
- Method of knowledge communication: facsimile transmission, electronic mail, electronic journals, teleconferencing and data communication network.
**Information Technology and Library**

The application of information technology in library and Information centres has developed in the western countries since 1940’s. In 1960’s the use of information technology has been started in the developing countries and that too are in different stages. The rapid development of Information and communication technology has made a special impact on the method of information acquisition, Processing, Storing & dissemination of information. The invention of Internet has brought a major change in the scenario of library and information services. Due to this impact of information technology it has created challenges and opportunities for the information professional around the world.

The impact of Information Technology is very huge for the library and information work. University libraries have undergone rapid transformation upon introduction of new technologies from the old conventional method which is shown in the form of the table 4.1.

**Advantages**

There are many advantages of Information Technology. Some important points are cited below:

- Easy to collect different library resources
- Collaboration & creation of Library network
- Avoids time consuming effort done by the librarian
- Increases the range of services offered
- Less time consuming
- Efficiency can be increased
• Easy & speedy access of information
• Improves the quality of library service
• Increases in the knowledge & experience
• Integration within the organization
• Improvement in the status of libraries
• Improvement in the communication facilities
• Remote access by users
• 24x7 service can be offered
• Access to unlimited information from different sources
• More up to date information
• Flexibility of Information to the users
• Work load reduce of library staff
• Combining of data from different sources

Kumar (2003) has rightly identified the issues in regards to IT used in the libraries. He has underlined the different information activities by some conventional methods and adoption of new technology.
Table 4.1: Developments in Information activities (Kumar, 2003)

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Information activity</th>
<th>Conventional method</th>
<th>New Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Generate, originate</td>
<td>Writing, Typing</td>
<td>Word processing, Text editing, Character recognition, voice recognition</td>
</tr>
<tr>
<td>2</td>
<td>Preserve, store</td>
<td>Manuscript, Paper print media</td>
<td>Electronic publishing, magnetic storage, Videotext, Tele-text, Computer disk, Rom</td>
</tr>
<tr>
<td>3</td>
<td>Process</td>
<td>Classification, Cataloguing, Indexing</td>
<td>Electronic data processing, Artificial intelligence, Expert system</td>
</tr>
<tr>
<td>4</td>
<td>Retrievial</td>
<td>Catalogues, Indexes</td>
<td>Database management system, Information retrieval off-line, On-line</td>
</tr>
<tr>
<td>5</td>
<td>Disseminate/ communicate</td>
<td>List, Bibliographies, Abstracts, Hard copies</td>
<td>Electronic mail, Electronic document delivery, Computer conferencing, Tele facsimile, View data</td>
</tr>
<tr>
<td>6</td>
<td>Destroy</td>
<td>Physical weeding</td>
<td>Magnetic erasera, Optical erasers, Re use the medium</td>
</tr>
</tbody>
</table>
Disadvantages

Though this can be ignored, a few points can be raised as disadvantages factors on the use of IT in the libraries. They are:

- Lack of trained LIS professional to handle IT devices;
- Establishment cost;
- Other recurring expenditure;
- Lack of infrastructure and above all;
- Rapid growth and development of IT devices and their implementation in the automated environment.

4.3 Information Technology Based Library Services

Information technology has changed the function of the library. University libraries are using the information technology to increase the efficiency and effectiveness of their day to day library work and services.

Acquisition, cataloguing, circulation or binding are the works connected with library services. These activities cover the administrative services, technical services, reader services and special services. Administrative services include the budget preparing and administrating; selecting, supervising and training staff; library development planning; policies and procedures creating and supervising. The function of acquisition, cataloguing, classification and circulation works fall in technical services. Readers’ services include the reference & Information services and documentation services. These types of services can be managed by the help of integrated library automation software. The influence of information technology can be seen in the following readers’ services.
Selective Dissemination and Information (SDI) Services

Various methodology are used to address the recent development in internet specially the web information overload. The information retrieval has become synonymous with browsing which can be stated as the inability to search the required bit of information. The ranking is used as the most important feature of every search engine which emphasizes only on its weak point, high retrieval ratio and low precision ratio. The web environment provides facilities where the end user can subscribe the SDI services which have the same SDI features found in the online commercial vendor system. In the intelligent agents which address the personal information needs of the ends users, it can transform the nature of web browsing and make it personally productive and effective environment for both data based producers and end users.

Online Searching

The typical area of information professional work covers online searching. It includes all level of searching from information broker, who gives services at a fee to that of professional employed in a private company who is paid for on line searching and is highly specialised in the subject.

The navigator who is to search the internet via Gopher, Archie and the web-can be said as an online searching because it is done in the real mode (i.e. via Transmission control protocol/ internet protocol and client server architecture). Internet could also be regarded as fastest development on line infrastructure consisting of a wide variety of navigator and search services. These developments are very critical in predicting current and future trends of the online searching environment. The documents which are needed for learning activities can be browsed online and there is no need to subscribe the costly
printed journals. The materials which are downloaded can be stored in computers. Many a times it happens that the actual data does not resemble the down loaded data due to which the ratio between recall and relevance does not match and for error-free search strategy multi skill is required.

**Web-based Indexes and Databases**

The CD-ROM becomes widely available in the late 1980’s was determined as a medium of highest storage and longitivity. Due to its advantages all the library resources were made available through CD-ROM as it has decreased the cost. The libraries now a days are witnessing another migration to web based bibliographic databases from bibliographic databases on CD-ROM. The web-based interface provides fast access to users by using hyperlink and other facilities in the web document from the full text publisher web sites. The CD-ROM version of the bibliographic databases has been migrated to the web based version and due to which the resources are open for remote users.

**OPAC to Web OPAC**

The integrated library management software, now-a-days, uses web base interface and has replaced the telnet connection by using the web sites instead of telnet links. The webs OPAC are hyperlinked to other records in the database like an author is a hyperlink to all the records to the database for that author. The library websites are turning themselves to a more logical gateway for the catalogue and other web based library resources. The acceptability of web-based interfaces is much known to the users with its graphical and navigational interfaces.
Digital Reference Service

The key areas of digital library include reference service and imparting training to the library users. Now the librarians use the digital reference format instead of waiting for the reference desk. The reference librarian also delivers reference services that requires deep intellectual understanding which can be delivered through electronically mediated reference services which are available through libraries for other information centre.

The digital reference service provide internet base question and answer services which can be called as ask-an-expert or ask a librarian service which connect individual to specialize person of that particular subject, who are also known as volunteers or mentors, time information specialist and are affiliated to various libraries virtual reference desk.

Electronic Document Delivery

Electronic document delivery does not need the sender and receiver of information to be available at the same time. It can give varieties of option such as creating, editing, storing, retrieving, transmitting and receiving the stored information when needed. This can be helpful to the people who are working on a large project which is spread over geographical area and wants to communicate each other. The preparation and delivery cost are comparatively less for electronic transfer of information compared to the traditional services such as telex, letter or courier. If some materials are not available in particular system then it can be acquired from other system and can be transmitted to the required users. Video tape, video desk, magnetic tape, CD-ROM etc can be used effectively in an electronic document delivery system for instant and convenient access to the electronic documents. This mechanism is faster compared to the online ordering
of document where due to communication short coming, it may take several days before they require documents received by the users. The transmission of information can be achieved by several means which includes telefax and facsimile transmission which uses telecommunication link to transmit both textual and geographical materials.

ADONIS (Advanced document over network information services) is an example of electronic document delivery system and is a consortia of major European publishers including Blackwell, Springer-verlag, pergamon, Elsevier, Academic and wiley in association with many governmental agencies and British library documentation supply centre. This consortium has a database of about five thousand important journals which are supplemented by back files provided by the publishers. The feature of electronic document delivery system includes dissemination of content, list of periodicals, books monograph etc; supply of full text of document requires; online documents ordering; automatic document delivery as per specific document, such as documents on standing order of regular basis and selective dissemination of information through profile matching.

**Electronic Clipping Services**

On lines of SDI the clipping services provides professional news both in real time and with periodic update by many database vendors. The users can register the profiles on major databases to monitor and provide customise services to the customers which includes current events company and industry news. The example of clipping services include passport of data time Alert service of Dialog (Knight- Ridder), CLIP of DOW Jones/Retrieval, News Flash of News net, Eclipse of Nexis, etc. The world wide known foreign news alert service that is the world news connection is an online use provider developed by NITS (National technical information service) of US department of
commerce uses open sources information from government, private industry and academician. The customizable news services like custom clips, Forcast, Internet News Alert, News Hound, Heads UP, etc provide only that news which is important and filter the noise to rescue the user from information overloading.

**Internet Bases Services**

The users’ application of internet covers some subject fields like business, commerce, culture, education, research, science & technology, recreation etc. The areas of internet are unlimited and endless. It provides access to both commercial and non commercial sources which include full text databases, table of content books and newsletters, electronic and online journals, library catalogue, e-mail directories etc.

Internet can be used as a means for accessing varieties of information which includes free software internet news, paper electronic shopping merchandise clip ware etc. Wealth of information for the University libraries is provided by the internet. It includes acquisition, reference services, price verification, clarification regarding price exchange rates can be done by the internet.

The internet has raised the concept of digital villages that have no location yet they connect individuals and shares objective and interest. The most active users of the internet are the scholars who have diverse discussion forums which uses e-mail, e-journals for debating and sharing their ideas.

**4.4 Information Technology Application on Collection Development**

Information technology is of utmost importance in every sphere of life such as in insurance, Air lines, Railway, Banking etc. So, libraries were also not lying behind in this field. Earlier the print media such as books, journals and other reading materials
were available, but today University libraries are equipped with computer, scanner, printer, compact discs, hard discs, floppy discs, barcode reader, RFID and other commercially available databases to provide information to the users through net. The traditional card catalogue has been changed by the on line public access catalogue. In the traditional system there was a huge line of catalogue cabinets which is more time consuming but now due to on line public access catalogue the reader does not faces such types of problems. The internet, online journal services, e-mail services has provided a helping hand to the library users for providing comprehensive information in their respective subjects.

The services of the University library have changed drastically due to the application of Information technology. The activities of the libraries such as ordering, cataloguing, classification, Reference & Information services can be done easily with the help of Information technology. If the trends continue for some year then by year 2020 it can be expected that library automation will be completed in all the University libraries in India. The scientist will be able to find out their required information through their own networked desktop in their lab.

The process of collection development includes analysis the needs of the users and to ensure that it is served adequately towards meeting the needs of the users.

**Selection Process**

The proper identification of resources is the main aim of the selection process. It determines the money available for collection development and allocating a specific amount of specific category or subject. It also includes development of a plan for identifying potentially useful material to acquire and search for the required resources.
The electronic tools which are commonly used in the University libraries for collection development process include online publisher catalogue, online sides (e.g. Amazon, book finder etc), CD-ROM databases, online book review for magazine and newspaper, readers suggestion through mails.

Library Web Sites

It acts as mirror of University libraries in which online catalogue can be used to access the information by the library websites, the information of all the University libraries can be acquired. The information that is available in the websites mainly depicts the condition of the University libraries, as it is the main source of gaining information of that particular University library.

Online Databases

The online databases are the main source to access the electronic books and journals in the University libraries. The access to online databases can be acquired through login to the portal of the University libraries. The online databases are mainly a collection of electronic information sources by publisher from various fields. The access to the databases are free of cost of some portal by publishers and vendor and others required subscription for such databases. By subscribing to the databases the researcher get access to thousands of scholarly article in the field of specialization or research.

CD-ROM Databases

The databases which are stored in CD-ROM can be accessed without any internet connection it is highly cost effective and can be carried anywhere by the users. They can be printed when they are required by the users. The CD-ROM has storage capacity of approx 650 MB so the researchers felt the need of a higher storage device which leads...
to the emergence of DVD technology which can store information on both sides and in two layers. Several publishers are making their publication available in the CD-ROM version as well as in printed format.

**Online Public Access Catalogue (OPAC)**

Online public access catalogue is developed to meet the needs of the library users. It is mainly a machine readable catalogue which can be used in the place of card catalogue. The facility of accessing the library housekeeping operations, especially circulation facility can be made available through the use of OPAC. The OPAC when available in the internet can be called as web OPAC. OPAC can also be used as an access tool and resource guide to the library holding/ collection which contain the data in the machine readable format.

The OPAC can be used at a gateway for accessing information in the libraries as they provide facilities to browse search and locate information. The web OPAC can help to realise the resource sharing activity among the libraries.

**Union Catalogue**

A union catalogue is an assemblage of catalogue records from two or more libraries. It may be local, regional and national levels. Union catalogue can be framed in different range of media including microform, book format, card and electronic data bases. The union catalogue helps the reader to locate the material and acquiring it through inter library loan services (ILL) from other libraries. It acts as an important tool for document selection.
Acquisition

The traditional system of acquiring resources in the University libraries take a lot of time but after the use of information technology the process of selection and acquisition has become very fast. Through the e-mail the University library gets the list of selected books and journals from the various departments, which has removed the unnecessary correspondences, wastage of paper and time. The order of books and journals are now send directly to the publishers, vendors and book sellers by e-mail and the response is very quick.

We can get the information, comparison of all the books in a single click of a computer. This has definitely helped the library staff for acquiring books & journals in very fast way and also removes the traditional constraint of acquiring books. Earlier when depending on the print media we have to wait for months for accessing the books & Journals, but now we can access the online journals & books in a much stipulated time. The online subscription of books and journals can be accessed through library consortia such as E-ShodhSindhu, National Knowledge Resource Consortium (NKRC), Consortium for e-Resources in Agriculture (CeRA), DBT e-Library Consortium (DeLCON), etc. If any library joins in the consortia they can provide large amount of resources to the users. The main function of the acquisition section is the book ordering and Payment of bills.

Ordering

Ordering system includes:

- Place new order
- Place new order directly
- Print/e-mail purchase order
• Send reminder letter to vendors

• Cancel any specific order

The librarian has to place orders for the approved title to different vendors depending on their ‘specialization’ e.g. some vendors specialise in supply only information technology books, some on social science, engineering etc. Some time the librarian has to place ‘Direct order’ to specific vendor or supplier.

**Bill Payment**

The librarian or the acquisition section in charge checks the books with the ordering files. The next step in the reference is to process the payment the items accessioned/received. The payment process allows to:

• Process the invoice for the title received

• Complete payment process (Cash/ Cheque/ Account Dept)

• Generate ‘credit note’ or ‘Refund’ amount for advance payments

• Forward the invoices to account department (Letter/ e-mail)

The invoice process include

• Invoice no & date

• Over all discount % rate (if any)

• Currency (if different from placed order)

• Additional charges like postage, packing, forwarding etc (if any)

• Discount % rate for individual title

• Budget head
The librarian has to make payment either in cash or by cheque/demand draft/ credit card processed within the library. In large set-up the librarian is sent to the main accounts department of the University for Payment.

**Processing**

After selection and acquisition of reading materials processing work is started. Processing involve the accessioning, classification and cataloguing of documents.

**Accessioning**

Different University libraries follow different procedure to accession their documents. Some libraries just allocate continuous to any type of materials received that may be printed books, CDs, cassettes, e-book etc. Some libraries group the document like textual documents and digital materials (CDs, etc) and follow different series for each of them. Some of them Prefix/suffix the accession number with alphanumeric code to identify department, collection (Lending/ reference) etc.

It is not possible to assign duplicate accession number to any documents. Precaution needs to be taken to ensure that number is not skipped in sequence while assigning the accession number to any documents.

**Cataloguing**

Catalogue is a list of books holding in the library. It is a key to open the treasure of library. Cataloguing in the traditional way is to prepare different entries (Such as title, author, series, editor etc) to satisfy the various approach of documents searched by the users. With the advent of digital technology all the information filled in the catalogue are stored in the digital database designed in the software so that data can be accessed easily by the users. With the use of OPAC the users will no longer need to visit the
library and waste time. They can get the information by sitting on department through their computer network. The users do not need to remember the long title of the document or its author to know the availability, combination search and keyword search with Boolean operators (AND, OR, NOT, *) will help to remove the problem.

The University libraries now move towards digital collection building. Digital resources are collected and old collection is being digitized. It is not possible to digitize all the documents due to copyright act.

Through OPAC we can access the full-text of digital collection in addition to access the bibliographical detail of print and digital resources.

Classification

To organize and locate the reading materials classifications plays an important role. Classification of document can be done through different library classification scheme. In future the library documents will be classified online with the help of keywords of the title.

Google has recently digitized 150 lakh books and put in the internet and classified according to categories. The purpose of it to access the books from anywhere in the world at any time by the readers.

Circulation

During the issue of books in the traditional format the users have to stand in long queue with knowing about availability of the books. Now by applying the information technology the user can utilize less time for issue of the books. The overdue charges are calculated automatically and statistics, reminders are generated easily. In the manual
system to check the issue status of a particular book will take time but in an automated system the users will know immediately.

The manual issue and return work may reduce when the print media collection decreases and digital collection is increased. Now the maximum information is available on online and can be downloaded easily. At present the library system is heading towards self issuing of books as like the ATM in a bank. This process can be made readily available by the library staff with the bar coding every book or by pasting electromagnetic strip. In USA the University libraries are using advanced technology which is known as RFID (Radio Frequency Identification Device) for self-issuing of books and other reading materials. RFID is also helpful for checking theft, stock verification and tracing the misplaced books of the University library.

Information technology is used for users’ needs analysis, especially when doing users surveys and checking usage statistics of both printing and electronic resources. Information technology is also used in bibliographic description of the records in the University libraries.

4.5. Impact of Information Technology on Collection Development

Collection development covers selection, acquisition, processing, evaluation and weeding out of reading materials. Collection development is understood as an important concept for extension in higher education and research activities in University libraries. Now-a-days the collection management is a more demanding concept which goes beyond a policy of acquiring materials to policies on housing, storage, preservation, weeding and discard of stock. The collection management mainly gives importance to
systematic management and maintenance of existing collection of libraries rather than selection and acquisition of reading materials.

**Impact of CD-ROM**

CD-ROM is the standard storage device which is widely being accepted now-a-days. The CD-ROM has the storage capacity of approx 650 M.B. The real life of the CD-ROM is yet to be proved but it is estimated to about 100 years. The CD-ROM can be used until its damage or scratched. The most important part of CD-ROM is that it is less expensive. The databases of all the subjects are available in the CD-ROM. As the multimedia databases are becoming popular the CD-ROM are also widely accepted by the beginners in any subject. This development is accepted by almost every librarian. It has decreased the cost of acquiring periodicals as it is not being printed now-a-days and they are mostly available on CDs. The important advantage of CDs is that it requires least space and can be searched effectively by any Boolean expression.

**Impact of Internet**

The advent of internet has revolutionised the library environment of modern age. It is known as the network of networks. Now we can search and use the library resources very easily and very quickly. The users are being attended round the clock with the help of web based library services in almost all the countries. The library resources can be accessed by almost all the users as various library sites and topics can be accessed at the click of a mouse. Now all the libraries have become web based and accessible through library web pages. A student of any University of India can access the web materials of any library of the world through the internet connection. The information in the internet
can be in the form of books, journals, reports, sound recording, video films and wide varieties of other sources.

As the materials in the internet can be uploaded by any one, we have to be conscious in selecting the proper library resources, so that we may not misguided.

**Impact of Digital Libraries**

Digital library is an extremely new concept of carrying out the function of libraries by using new types of electronic resources, new approaches to acquisition and new technique of storage and preservation and new approaches to classification and cataloguing especially of electronic data, by extensive use of electronic system and dramatic shifts in intellectual, organisational and electronic practices. It is also known as distributed text based computerized information system and service. The digital libraries have the provisions for access documents which are highly valued mostly from other organisations.

In the digital library system the software are produced locally and the required information are obtained by remote login or accesses. In digital libraries the information is less permanent in nature. It becomes difficult for librarian to decide:

- What resources should be accessed and stored by the organization
- who should be involved in acquiring the resources
- The required standard to be followed.

Different types of data or information are stored in digital libraries and for its organization the librarian requires cataloguing practice which requires appropriate data modelling for organization of data in standard font. Special technique is needed for
organization or compressing of data which is the major challenge in the digital library environment.

The philosophy of collection development needs to be modified in information technology based environment and for this it requires policies which control the acquisition of both traditional and electronic forms of documents.

4.6 Resource Sharing in Collection Development

Resource sharing is an important concept of library collection development. It has played an important role for the formation of consortia in library management. It has replaced the earlier traditional concept of space, limited budget, and highest cost and as an economic means. An independent library cannot satisfy the need of users. So this problem has been overcome by the use of resource sharing. Resource sharing of the library involves co-operative acquisition which includes access to the catalogue, in process and on order information of the participating libraries, inter library loan which comprises determining the location of the required resources by verifying its availability and physical transfer and common storage for the material use. The services and procedure of resource sharing includes: bibliographic access to holding catalogues for cataloguing and classification. Sufficient speed is required to the users for resource sharing technique so that the client receives the desired resource before the need is evaporated. Cost for the local collection should be less or at least equal to the cost of purchasing the same materials.

The resource sharing will be successful when several key requirements will be made successfully. Appropriate communication technology and delivery system are the key requirements. There should also be a mutual understanding (in respect of acquisition
policy, sharing of resources, loan period, bibliographic control, renewal etc) among the participating libraries. It should be governed by a strong management or other government mechanism. Success full resource sharing involved the use of modern technology and a less amount behaviour modification.

Internet plays an important role in resource sharing which requires less effort and required less resource for proprietary networking solution. All the libraries which are digitized should have a high speed internet connection so that good user interface can be provided to the web browser which will enable integration and will be able to access the shared resources.

The World Wide Web and internet has given a strong policy for consortia based sharing of resources, electronic journals and bibliographic databases.

Factors of Resource Sharing

The factors of resource sharing includes-

- Growth of knowledge in various subjects
- High speed growth of literature and publication: The traditional library in the second half of the 20th century it was very difficult to manage the publication which includes about three million documents published every year. The documents include conference papers, articles, books, technical reports etc. Which are to be double after every eight to ten years.
- Increasing trend of newly developed subjects and specialization.
- Fund limitation: The cost of books and other reading materials are increasing every year but the budget of University library is limited. So resource sharing is adopted by the University libraries.
- Increasing in the cost of publications: The cost of publication is increasing rapidly. The average price of foreign books has raised to $143.09 in 1989 from $41.34 in 1976

- Increasing the number of members which includes students, faculty members and research scholars of the Universities.

- Wider scope of academic learning and other information resources.

- The information needs of the users are recurring or repetitive in nature.

  Resource sharing is necessary for acquiring information about a particular subject at low cost among the University libraries. It should play a pivotal role so that resource sharing becomes the focal point of co-operation.

**Areas of Resource Sharing**

Resources that could be shared are:

  i. Materials-Books, periodicals, audio-visual aids, floppies, CDs etc.

  ii. Experience and skill library manpower.

  iii. Infrastructure - It includes hardware and software of computer and networking.

**Forms of Resource Sharing**

There are various forms of resource sharing for the benefit of libraries in general as well for the as users. The forms are

  i. Cooperative acquisition

  ii. Cooperative processing

  iii. Cooperative storage &

  iv. Inter library loan.
University libraries procure books, periodicals and other materials from the publishers and booksellers situated in and outside the country. In the acquisition work selection, placing orders, giving reminders, passing the bills and few other activities are included. All these activities can be reduced greatly through cooperative acquisition of documents. Moreover it may bring down cost, earn a large discount and save time and clerical labours of the staff members.

The procurement of the foreign periodicals poses so many problems such as exchange of foreign currency, postal problem etc. Such types of problems can be solved by cooperative acquisition.

Inter library loan is the most common and an old form of resource sharing. In this, a library gets a book or a document from another library on loan for a certain period of time. The transaction takes place only between the libraries.

**Resource Sharing of University Libraries**

In 1986, UGC has stared INFLIBNET which is a national level resource sharing technique among University libraries. In this system the communication link is the main source of resource sharing and co-operation. The purpose of INFLIBNET is to create data bank among different subject fields so that it can be used by all libraries to their readers. INFLIBNET can also be used to conserve the library resources and to prevent duplication at the national level.

**4.7 Networking**

Networking can be defined as a group of individuals or organizations that are interconnected as a common form or through the computer. This linking includes a communication mechanism, and may networks exist to express purpose of facilitating
certain types of communication among their member organizations. Thus networking is a system with a predominant flow of service and reverse flow of demand.

A network is a form of arrangement or an administrative structure that links a group of individuals or organisations who have agreed to work together and share their resources.

**Types of Networks**

There are three types of networks. Such as

a) **LAN** (Local Area Network): In a LAN, two or more computers are directly linked within a small well defined area such as a room, office building or a campus. It has relatively small or less number of users.

b) **MAN** (Metropolitan Area Network): It is a network that is basically a bigger version of LAN. It is called metropolitan since it normally covers the area of a big city.

c) **WAN** (Wide Area Network): A WAN is composed of a number of autonomous computers that are distributed over a large geographical area, often a country or continent. Wide Area Networks are usually limited to use by the large organisations and government agencies due to high costs involved in building and maintaining them. It is a satellite based wide area network with national coverage.

Networking has played an important role in collection development in Indian University libraries. NICNET, ERNET, INFLIBNET, DELNET, I-NET, SIRNET are important library networks develop in India which provide high speed of transmission worldwide coverage an unpresented connectivity. The advent of Internet has played a significant role for resource sharing in University libraries due to easy selection and procurement,
document delivery and access to specialize material and journal in less time. The concept of file transfer protocol (FTP), remote login, e-mail has played an important role for accessing of the electronic information.

Use of networks for collection development related activities (Seetharama, 1977):

- Receiving patron requirement for new journals, books and media
- Providing/ requesting Inter library loan (ILL) to other libraries
- Ordering / requesting library resources
- Providing/ requesting missing issues, duplicate issues and exchanges
- Identifying the proper document sources
- Getting quick copyright mission
- Accessing the new status and electronic journals
- Communicating with customer & other vendor
- Searching union list and remote catalogue
- Scanning journal table of content
- Searching online system for e-resources
- Use of file transfer protocol for retrieving file
- Receiving technical data & Document
- Searching file for article and acquisition list

The main uses of networks for collection development work can be found in library literature. Research scholars have benefited from OCLC, JANET, EURONET networks. Scholar also benefited from international network such as MEDLARS, DIALOG and CA.
4.8 Consortia

The word ‘Consortia’ was originated from Latin word in early 19th century in the sense of partnership. Oxford advanced learners dictionary describes Consortia as “a group of people, countries, companies, etc. who are working together on a particular project”. Library consortium means an association or group of libraries that agree to share their resources to satisfy the needs of the readers. The salient features of library consortium are:

- To cope up the newly generate knowledge published in different forms such as printed document and electronic media on various disciplines, multidisciplinary and new innovated subject area.
- To eliminate the different problems faced by the libraries to provide better service to the users
- To meet the needs of the people due to rapid growth of population all over the world
- To collect all the documents published at the national and international level because of the limited library budget.
- To overcome the language barriers.

Need and Purpose of Library Consortia

The main purpose of establishing a library consortium is to share resources amongst the members. Internet collection, Suitable software, sufficient manpower, reprographic facilities etc. can supplement the environment feasible for sharing resources and other component through consortium. Other purposes like purchasing e-resource, sharing resource, shared archives and storage facilities, share core collection, shared digital
library project development, shared e-resources, training of users and library staff, support of technology to member institution, joint achieves and storage facilities.

**Roles of Library Consortia**

Roles of library consortia are balance collection development, Create database of resources among participating libraries, document delivery service, establish a standardize resource sharing system, strengthen communication system, prepare the union catalogue among participating libraries, library co-operation and consideration with contractual obligation for each participant.

**Types of Library Consortia**

There are several types of library consortia in India. Such as

- **Open Consortia**: This type of consortia is open ended to provide flexibility for the libraries to join, leave at their need, convenience and will. It is generally driven by small homogenous group who have a need to cross share the resources in a specific subject area. E-ShodhSindhu consortium runs by INFLIBNET Centre, Ahmadabad by the directive of MHRD, Govt of India is an example.

- **Closed Group Consortia**: The closed group consortium stays exclusive within a defined group. NKRC, IIM consortium are the example of closed group consortium.

- **Centrally Funded Consortia**: In this model the very existence of consortium will solely depends on the central funding agency. E-ShodhSindhu, NKRC, etc. are example of this model.
• **Shared-Budget Consortia:** This is the only alternative where central funding is not coming. IIM and FORSA are example of this model but the fund management does not have a central authority.

• **National Consortia:** This is a conceptual model or frame work as far as India is concerned, which is not being seriously attempted by any of the ongoing consortia in the country.

**Indian Consortia**

At present there are many consortia being run successfully by different organisation in India. Some of them are:

- E-ShodhSindhu ([http://www.inflibnet.ac.in/ess/](http://www.inflibnet.ac.in/ess/))
- Consortium for Educational Communication (CEC) ([http://cec.nic.in/Pages/Home.aspx](http://cec.nic.in/Pages/Home.aspx))
- DBT e-Library Consortium (DeLCON) ([http://delcon.gov.in/](http://delcon.gov.in/))
- MCIT Library Consortium ([http://mcitconsortium.nic.in/](http://mcitconsortium.nic.in/))
- ICMR e-Consortia ([http://icmr.nic.in/icmrnews/e_consortia.htm](http://icmr.nic.in/icmrnews/e_consortia.htm))
Benefits of Library Consortia

The consortia helps the collection development of University libraries. It avoid duplication of core collection especially for core journals, easy access to resources sharing on Internet by developing common resources database, effective document delivery system, reduce cost of information, time saving, improved resource sharing, and more professional services to users.

4.9 Collection Development in Digital World

Libraries are the storehouses of wisdom and ages which are kept in the form of recorded information or data which can be used by the present and the future generations. There were many problems to storage of informations for many decades in the form of paper or other traditional techniques but with the advent of digital storage the job of storage has become very easy and comfortable. The main job of the traditional librarian includes documents selection which has been replaced now-a-days to website maintenance or new website creation, teaching specific references, rising of fund or many other important tasks for which collection development has become a hybrid work which has incorporated both technical and public services. Sometimes it becomes difficult to evaluate the positions that blur the lines among this type of organisational units.
Fig 4.1: Processes of digital collection development. (Susana Sanchez Vignau, 2006)

Digital Library Collection

In digital library the collections are stored in digital formats and accessible by computers. The digital content may be stored locally, accessed remotely via computer networks. On the other hand a digital library is a collection of documents in organized electronic form available on the internet or on CD-ROM databases. Following are the collection of digital libraries:

- Metadata describing the data and also having facility to provide link to other related database.
- Open communication protocols for information retrievals
- Information access tools like browsers, display and search engines
- Electronic publishing tools
- Data compression
- Digital storage device
- Scanning and conversion technology
- Multimedia for integration technology
**Trends in Digital Collection Development**

The digital collection development has replaced the old age traditional collection development process. Now-a-days, the users need not run from one library to another for gathering the data, they can now find it in a single repository or databases. The data in this repository are gathered adequately and are properly organised.

According to the National information standard organisation (NISO) a digital collection is comprised of digital objects that are selected and organised to facilitate access to them and their use. A digital resource collection can be said as the various objected of information, being produced or designed in an electronic format or which are digitalized from a printed original one (Sanllorenti, 2005).

The digital collection can also be said as the application of computer and other technologies for acquisition, organization, storage, retrieval and dissemination of information.

**Stages of Digital Collection**

The stage of digital collection development starts from the collection of information to its various stages, with the vision of the information professionals. It should start from the basic out living of the collection development to the peculiarities involve in the digital environment.

The digital form of collection development may not be same with the traditional collection procedure but we cannot ignore the logic and the process of traditional collection development. The stages of collection development are:

- Gathering of information contents
- Evaluation of information contents
• Organisation of information contents

• Construction of digital collection and

• Maintenance of digital collection

**Challenges in Digital Collection Development**

The problems of digital libraries are discussed below:

• **Complicated procurement and Preservation system:** There are limited reliable suppliers of digital information in India. Also, there is a problem in finding a comprehensive and up to date selection tools. There is also a problem with the today’s hardware and tools which may not work after a decade, as it changes radically and frequently. So, while evaluating the preservation or maintenance system we have to take into account the constraints which we might face in future.

• **Technological obsolescence:** The technology needed for the digital library collection has to be updated or migrated regularly because of the daily advancement of computer technology. Migration helps in preserving the integrity of digital objects and retains the ability of clients to use them in the future. Continuous upgradation is required for the long life of the digital information.

• **Financial constraints:** The cost involved in maintaining the digital library is very high and the budgets that are allotted to the libraries are very less and static, due to which the libraries face problems in up gradation of digital collection and its quality deteriorates day by day.
• **Decentralization of library services**: After the digitization of library services, the librarians fear that they may lose their importance among the readers as all the information of the library resources will be available directly at the readers’ desk.

• **Access related problems**: All the documents or resources that are available in the net are not accessible to everyone, because it may require special programs, software, licence for its downloading, which are not affordable by everyone. This used to create a great hindrance in digital collection development.

• **Security in library environment**: The attack on the computer by viruses, spywares, Trojan horse is on the rise in the computer environment and it has become a great headache of the librarians. The librarians have to install antivirus and update it regularly so that it functions efficiently. The whole database of information that is stored may become corrupt at a second of time if it is not updated at regular intervals; also the issue of piracy has to be stopped. These are somewhat overcome after the intellectual property right (IPR) act and trade related aspects of intellectual property right act, and it has given some relief to producers of digital data and resource at international level.

• **Absence of national repository of digital documents and legislative provisions in this regard**: There are no specific locations in India for locating electronic publications; there is also no provision to deposit electronic & optical publications at national centre. After much of the hurdles faced by the libraries the national centre for digital publication was established at the foundation for innovation and technology transfer (FITT) at IIT, Delhi which focuses on knowledge and information products and titles published on CD media. This
centre is now considered as a milestone for digital collection development in India.

- **Problems related to check the reliability and authenticity of digital information:** The vast repository of information which is found in the internet is worthless and it is very difficult to find the data which as accurate and sincerely designed and which have important virtues in the transmission of an assertion. So from time to time we have to hear the reports that contradict or disapprove previous impregnations, also we have to be very judgemental in deciding the reliability and authenticity of the digital information.

4.10 Conclusion

Rapid technological development and application of information technology has changed manual library operation and services into modern one. The application of modern information technology has allowed to access and store information quickly. Information technology makes faster speed of retrieval of information, update facility and generate a better management of information. The recent technology has forced the libraries to digitize information and has changed the forms of library classification and cataloguing. There are also some hurdles faced by the University libraries during the application of information technology such as the increasing cost of subscription of electronic resources, slow internet due to which much of the valuable time is wasted on accessing the online journals books and databases.

Some of the faculty members and research scholars prefer print resources rather than electronic resources. There is also a difficulty that some books which are listed online
may not be available and there may be a lack of experience staff to carry out of the collection development process.

The reference service can be replaced with virtual reference desk which will decrease the print collection and will increase the digital collection such as subscription of online journals and CD-ROM databases. The RFID technology can be used for self issuing the reading materials and will also reduce the theft of it. Keeping in view all these the libraries need redefining or reengineering as they may be named as knowledge management centre.