The main objective of college library is to become instrument of instruction. In order to determine, how far it has succeeded in achieving the objective, one should determine the extent to which the user uses the library resource for their assignment as an integral part of the curriculum. In other words we can say that the teaching in the classroom must depend more on library than the textbooks. A college library is expected to support the objectives of the college. Therefore the basic function of the college library is to provide study materials to its users in short possible time and serve the requirements of the students, teachers and researchers towards reading, study and research.

3.1 INFORMATION

Information is regarded as an important resource for all human activities. “The right information from the right source, to the right user at right time is everybody’s right”. Information is the product of human brain in action. The simple meaning of information is “knowledge, intelligence, facts or data, which can be used, transferred or communicated”. Information is the result of experience, observation, interaction and reading.

Thus, the information created should be made available to the users. Therefore, there is a need to provide the information to required users at
appropriate time. The information requirements of users depend on social, economic, political, scientific, technological and psychological changes appearing in the society from time to time. Therefore the information professionals are required to develop skills in organizing and arranging the information, and provide the same to the needy users.

3.1.1 Information: Meaning & Definition

The simple meaning of information, in a restricted sense, is sensible statement, opinion, fact, concept of idea or an association of statements, opinions or ideas. Information is meaningful data used for decision making.

Information means - knowledge communicated or received concerning a particular fact or circumstance; it can also be considered as knowledge gained through study, communication, research, instruction, etc.

The term information is defined in Webster's New International Dictionary as “the communication or reception of knowledge or intelligence”.

3.1.2 Nature of Information

Mc.Garry¹ summarizes varied attributes to see the nature of information:

1. Information can be regarded as a near synonym of fact.
2. It has a transforming or reinforcing effect on what is known, or believed to be known, by a human being.
3. Information is used as an aid to decision-making.
4. Information is the freedom of choice one has in selecting a message.

5. Information is a necessary piece of something when we are faced with a choice; the amount required depends upon the complexity of decision to be made.

6. Information is raw material from which knowledge is derived.

7. Information is exchanged with outer world, not merely received.

8. Information can be defined in terms of its effect on the recipient.

**3.1.3 Features of Information**

The important features which affect the quality of information are:

1. Accuracy.

2. Comprehensiveness

3. Latest (currently/up to date) and Timely

**3.1.4 Information: Concepts**

Mc Creadic² and Rice summarize the concepts of information as given below:

1. Information as representation of Knowledge:

   Knowledge is information for which the decision making is deferred, possibly to distant time, and where the possible decision makers are drawn from a very large population base.

2. Information as Data in the Environment:

   Data is a representation of facts, concepts or instructions in formalized manner suitable for communications, interpretations or processing by human or
automatic means. It is generally kept in files of records and the set of relative files of records is termed as database.

3. Information as a part of the Communication Process:

Information is a message communicated by a communicator to a receiver. Information is also the product of human brain in action. It may be abstract or concrete. When a person begins to think, a variety of images and sensations flash through his mind, which makes some information to accumulate in the mind, and his memory retains these pieces of knowledge.

4. Information as a Resource Commodity:

Obviously, all other things remaining equal (namely resources, competence, opportunity, knowledge, etc.), it is information that makes one human being advance more than his counterpart. Though information is a very important resource, it can be treated at par with other resources such as Men, Materials, Machinery, and Money.

The principal reasons (for this) are:

1. Information provokes one up man ship.
2. Information is volatile.
3. All Information is not public.
4. It is difficult to price information products and services.
5. Management of information is rather complex.
3.2 EMERGENCE OF INFORMATION TECHNOLOGY (IT)

The information revolution of today is indisputably caused by the unprecedented advances in technology. Computers, Telecommunications, Micrographics and Reprographics have emerged to give shape to the familiar phase known as “Information Technology”. This advancement has made accessibility to world information and knowledge possible from any part of the globe. In other words, the increasing importance of information and the need for its users has resulted in the application of different technologies widely termed as information technologies.

The term Information Technology is a recent origin and comprehensive term. The term ‘Information Technology’ in English, ‘Informatique’ in French and ‘Informatika’ in Russian encompass the notation of Information handling. In its strictest sense, Information Technology is a new science of collecting, storing, processing and transmitting information.

The world ‘Information Technology’ is a combination of two words. One is ‘Information’ and the other is ‘Technology’. Information means knowledge, it can be a bit or a para or a page. In addition, dictionary definition of technology is the systematic application of scientific and other organized knowledge, skills to practical tasks by the use of computers and communication.

Information Technology is a generic term used to denote activities connected with computer based processing, storage and transfer of information.
It includes micro processors, cable access television, fiber optics, satellite, tele text, word processing, electronic mail, video, robotics and such others. Information Technology is collective term for the whole spectrum of technologies providing ways and means to acquire, store, transmit, retrieve and process information. Information Technology is not one technology but many, which have converged to serve the needs of the information revolution. Computing technology, Telecommunications, Audio and Video technology, printing technology all are part of it. Any definition of Information Technology (I.T.) must therefore be very broad.

### 3.2.1 Information and Communication Technology (ICT)

Information and communications technology or information and communication technology (ICT), is often used as an extended synonym for information technology (IT), but is a more specific term that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary software middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information.

The term ICT is now also used to refer to the convergence of audio-visual and telephone networks with computer networks through a single cabling or link system. There are large economic incentives (huge cost savings due to elimination of the telephone network) to merge the audio-visual, building
management and telephone network with the computer network system using a single unified system of cabling, signal distribution and management.

ICT is an acronym that stands for Information Communications Technology. There is not a universally accepted definition of ICT, because the concepts, methods and applications involved in ICT are constantly evolving on an almost daily basis. It is difficult to keep up with the changes - they happen so fast.

A good way to think about ICT is to consider all the uses of digital technology that already exist to help individuals, businesses and organizations to use information. ICT covers any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form. For example, personal computers, digital television, E-mail, robots.

So, ICT is concerned with the storage, retrieval, manipulation, transmission or receipt of digital data. Importantly, it is also concerned with the way these different uses can work with each other.

3.2.2 The Development of Information Technology

There are three distinct strands in the development of information technology. They are:

- The techniques used to record and store data.
- The techniques used to analyse data.
- The techniques used to communicate data.
Today, there has been a convergence of these technologies and much modern equipment carries out all three tasks. So, we tend to forget that in the past they were quite separate operations. All three have gone through stages of development which correspond to man’s general technological advance.

The stages are:

- Mechanical Methods.
- Electromechanical Methods.
- Electronic Methods.

### 3.2.2.1 The Technology of Recording and Storing Data

The development of this technology has been determined by the storage media used at various times in history.

- Clay Tablets
- Paper
- Punched Cards
- Electronic Media

### 3.2.2.2 The Technology of Analyzing Data

The task of analyzing data included both calculating and comparing. Calculating means primarily adding, subtracting, multiplying and dividing. Comparing means determining whether value of one item of data is greater or less than another and it is often carried out with a view to sorting data into order.

The main developments in this technology have been:
The abacus
Mechanical calculators
Punched Card equipment
Electronic computers.

3.2.2.3 The Technology of Communicating Data

This Technology is being used to communicate the information from the available data sources to the needy users. The main developments in this technology have been:

- Messenger and Postal services
- Mechanical and electronic systems
- The Telephone and related systems
- Digital telecommunication systems

3.2.2.4 Components of Information Technology

Currently ‘Information Technology’ is the latest buzzword in the information arena. In fact the ways of communicating available information from the various sources to end users are among the major challenges now a day. Today information can not only be stored, retrieved, disseminated in enormous quantities but also at phenomenal speeds. Information Technology opens and unprecedented opportunity in the way information is stored, retrieved, manipulated and exploited. Basically, ‘Information Technology’ connotes an ensure-able of technologies – The trinity of computer, telecommunication and micro-electronics. There are three key components of the new technology.
These are:

- New ways to store information compactly and cheaply.
- New mechanism to manipulate, scan and research such records and
- New facilitates for cheap and rapid transmission of information over long distances.

### 3.2.3 Advances in Information Technology

Advances in Information Technology which are being utilized for library and information activities are as follows:

- Computer Hardware and software
- Storage technologies
- Data bases
- Telecommunications
- Information systems
- Micro-forms and micro graphics
- Expert system
- Videotext and tele-text
- Electronic Mail

### 3.2.4 Application of Information Technology in Libraries

Information Technology is very useful for libraries in creating databases of their own and meeting them available to users through networks. It also enables libraries to provide effective and efficient services. Most of the library operations like book acquisition, circulation, office management, information services, etc.
are inter-related, inter-dependent and mutually supportive for overall administration of library.

The modern technologies, i.e. Information Technology gadgets which are convergent and highly relevant for application in modern library and information system can be grouped into four areas, as follows:

1. Computer Technology.
2. Communication Technology
3. Reprographic Technology
4. Printing Technology

3.2.4.1 Computer Technology

Computers are now extensively used in the library operations and has great impact in the management of libraries and information centers. Computer technology can be used in various fields of library activities. Some of the areas where computer application takes place are:

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 vendor 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 vendor.
- Items verification with order file and invoice.
- Inspection of items by the concerned department.
- Prepare for payment after accessioning.
- Preparation budget and maintain accounts and statistics subject wise etc.
- Final report. (Items/subjects wise/chronologically/booksellers reported etc.)

2. **Data Entry:**

Database is required for each:

- Books.
- Clients/Members.
- Serials.
- Audio-visuals.
- CD-ROMS, Floppies.
- Gifted items.
- Maps, Reports etc.
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.

4. **Circulation Control:**
   - Registration/cancellation and make time for membership.
   - Issue, return, renew, reservation of documents and produce the slip for proof.
   - Charges for late, lost book, binding and production of penalty slip.
   - Maintenance of circulation statistics.
   - Inter library loan.
   - Use of bar code system.

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 holdings, 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 - subject wise, binding etc.

6. **Documentation and allied services:**
   - Indexing and abstracting of micro and macro documents.
   - Thesaurus construction.
   - Compilation of union catalogue.
   - Bibliographical control.
   - Current Awareness Services.(CAS)
   - Literature search.
   - Selective Dissemination of Information.(SDI)
   - Newspaper clippings.

7. **Information Retrieval:**
   - Database creation and maintenance, interactive searching, saving of in house as well as external databases.
   - Search and print outs of queries against specified requirement.
Information about the books (issued, reserved, lost, overdue, weeded-out), membership, 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.

3.2.4.2 Communication Technology

Communication is the process of transforming information from an information source to a destination. Communication, the exchange of information and the transmission is very essence in a social system or in an organization.

Dictionary meaning of communication is news or the act of making oneself understand the means of sending information between one place to another.

In modern days, various means of communicating the information came into existence. There is a need to communicate information effectively, efficiently and timely by applying modern technologies such as communication technology.

The major areas of communication technology are:

1. Audio-visual technology
2. Fax
3. Telex
4. E-mail
5. Video text
6. Tele text
3.2.4.3 Reprographic Technology

Reprography is also known as micrography. It is a reproduction process. It has made a great impact on document delivery system. Today it is possible to record micro images in various microforms such as microfilm, microfiche, ultra fiche and COM (Computer Output Microform). Micro-graphics is a powerful micro-force for records management and information control.

Reprographic technology covers:

1. Photocopying.
3. Optical/Digital process.
### 3.2.4.4 Printing Technology

Printing or Printing Technology has great importance and playing important role in information and communication process. It has various evolutionary changes from making of paper and invention of printing to the modern printing technology of laser printers.

Printing Technology covers:

1. Technical Writing
2. Editing
3. Publishing

### 3.3 IMPACT OF ICT ON LIBRARIES

With the invention of Information and Communication Technology, libraries now use various types of technologies to aid the services they render. Everyday new technological advances affect the way information is handled in libraries and information centers. The impacts of new technologies are felt by libraries in every aspect. Computing technology, communication technology and mass storage technology are some of the areas of continuous development that reshape the way that libraries access, retrieve, store, manipulate and disseminate information to users. The academic library has been from its inception an integral part of institutions of higher learning, rather than an appendix or adjunct.
The introduction of various information / communication technology (ICT) trends has lead to reorganization, change in work patterns, demand for new skills, job retraining and reclassification positions. Technological advancement of the past twenty five years, such as the electronic database, online services, CD-ROMs and introduction of internet has radically transformed access to information.

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

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

The Exponential rise in generation of new information, especially Scientific and Technological information since World War II has gradually reduced the effectiveness of the traditional tools and retrieval aids used by librarians. We are now in the age of information technology revolution along with information explosion. Due to information explosion, automation of library service is imperative for efficiency and effective working of library and information center. The automation is defined as a technique of making a process or a system that operates automatically.

Though generally library automation may mean use of suitable machines to perform the activities of library mechanically without much manual or mental efforts by human beings, today library automation signifies “mechanization of library housekeeping operations predominantly by computerization”. The most commonly known housekeeping operations are acquisition control, serials control, cataloguing and circulation control. In recent times, even the related topics such as information retrieval, semi-automation, automatic indexing and
networking of automated systems are also treated as part of library automation. Although computers have a major role in library automation, telecommunication and reprographic technology have an equally important role because of the extent of support they offer.

Most of the Library and Information Centers (LICs) of India have started using computers and Information Communication Technologies in organizing their collections, housekeeping operations, processing, retrieval and dissemination of information to the end users. The use and impact of ICTs is now visible in Indian library and information centers which may be due to the drastic reduction / escalation of the cost of hardware and software and their easy availability in the markets with service support from the suppliers or vendors.

The impact of IT is also evident on the activities of many LICs associated with universities and other institutions of the national importance. Thanks to University Grants Commission for establishing INFLIBNET which have been playing an important role since its inception for initiating the automation and networking activities of library and information centers of universities, colleges, R&D laboratories and various institutions of higher learning. So far 142 universities have been covered under the INFLIBNET Programme which enables the university libraries to purchase computers, modem, printer, air-conditioner, software (Operating and application software) and get telephone connectivity, etc. The recurring grant is also provided for meeting the expenses of data support work, salary of Information Scientist, telephone charges for accessing
INFLIBNET databases through Internet and maintenance charges for first five years from the date of installation of systems.

3.3.1 Library Automation

The automation is defined as the technique; a process or a system that operates automatically. According to the Encyclopedia of Information and Library Science, “Automation is the technology concerned with a design and development of the process and systems that minimizes the necessity of human intervention in their operation”. Library automation may be defined in simple sense as “a process of mechanization of library operations which are of a routine and repetitive nature. This covers usually housekeeping operations such as acquisition, serial control, cataloguing, circulation, references and administration work”. In more wider sense, it can be said that computerization of all library operations is known as Library Automation.

3.3.2 Need for Library Automation

Computers have revolutionized all fields of knowledge. It has been gradually weaving electronic webs in various parts of the globe for quite a few years now. Now it is being used extensively in libraries by developed countries and in a limited scale in the third world countries. Today, information technology coupled with computer technology has conquered even space and time with regard to dissemination of information. The word ‘Automated Library’ is used to denote a library in which the collections of library materials are primarily on paper but in which the library’s procedures have been computerized.
Library Automation is required mainly for the following reasons:

- Obtain increased operational efficiencies;
- Relieve professional staff from clerical chores so that they are available for user oriented services;
- Improve the quality, speed and effectiveness of services;
- Improve access to remote users and other stakeholders (e.g., the general public);
- Improve access to resources on other networks and systems, including the Web;
- Provide new services not hitherto possible;
- Improve the management of their physical and financial resources;
- Facilitate wider access to information for their clients;
- Facilitate wider dissemination of their information products and services;
- Enable their participation in resource-sharing /library networks; and
- Enable rapid communication with other libraries (including libraries) and professional peers.

### 3.3.3 Areas of Library Automation

Following are the areas of Library Automation:

- Acquisition;
- Cataloguing and Indexing;
- Circulation;
- Serial Control;
- Library Administration and Management;
• On Line Public Access Catalogue;
• CDROM Database Searches;
• Resource sharing through Library;
• Network/INTERNET;
• Desktop Publishing (DTP);
• Office Automation;
• Information Retrieval

3.4 ATTITUDES TO TECHNOLOGY AND CHANGE

The advent of new technology into the workplace and into society generally, can be very frightening for some people. The media and academia have contributed to the discussion as to why people are frightened of new technology, from dishwashers to computers, giving rise to expressions such as “techno phobia”, “cyber phobia”, “computer anxiety” and “techno stress” to describe such fears. The research in the USA has explored human reactions to the introduction of additional technologies into the home and the workplace in recent years. They studied the responses of clerical and support staff, managers and executives in businesses across the USA and found that, although there are people who are genuinely excited by new technology and enjoy using it, there are a substantial number who are resistant to technology.

Human fears of technology may emerge because of its introduction, or increase in use, appears to threaten the status quo, that could be a change in the routine at work that was happily undertaken for the past 20 years, or the fear of
being left behind, or replaced by others who have the relevant technology skills. Change generally can bring both uncertainty and discomfort into our lives. It may provoke strong emotional reactions in people ranging from the confusion, fear and stress (Cooper, 1998)\(^3\) often associated with loss and bereavement.

The effects of automation on library staff have been a focus of research for the last 20 years and the introduction of automated library systems was a major point in the working lives of library staff since it involved learning new technologies, new processes and procedures. Years of routine were overturned instantly with the introduction of a computer for staff to work with. More recently, change might have involved moving to a more modern library management system or the acquisition of CDROMs and e-journals all of which might prove very intimidating for staff in libraries with little or no prior experience of such innovations. Hudson argues that libraries generally “are in a period of general uncertainty” which can be worrying for staff and might provoke hostility or resistance to the introduction of new technologies.

3.4.1 Attitudes to technology

Attitudes – chiefly positive attitudes – are assumed to be fundamental in the acceptance, implementation and success of new technologies. Literature relating to people’s views of technology is expressed in terms of attitudes to technology or attitudes to change. For ICT systems to be successful, it is suggested that staff need positive attitudes to ICT (Fine, 1986\(^4\); Evald, 1996\(^5\)).
According to Spacey et al., (2003)\textsuperscript{6}, Attitudes – chiefly positive attitudes – are assumed to be fundamental in the acceptance, implementation and success of new technologies. Literature relating to peoples views of technology is expressed in terms of attitudes to technology or attitudes to change. For ICT systems to be successful, it is suggested that staff need positive attitudes to ICT (Fine, 1986\textsuperscript{7}; Evald, 1996)\textsuperscript{8}. Attitudes have been suggested to influence behaviour but the research in this area is varied in its conclusions. Social psychologists, Fishbein and Ajzen (1975)\textsuperscript{9} submitted in the Theory of Reasoned Action (TRA) that an individuals behavior is determined by ones intention to perform the behaviour and that this intention is influenced jointly by an individuals attitude and subjective norm (the latter is a measure of how people are influenced by their peers opinions) Applying this understanding to an individuals acceptance of Management Information Systems (MIS), the Technology Acceptance Model (TAM) (Davis, 1989)\textsuperscript{10} suggested that attitude influences behavioral intention to use, and subsequent actual use. TAM also includes the constructs of perceived usefulness and perceived ease of use. Perceived usefulness is the extent to which a person believes that using a system (or computer programme, for example) will enhance their performance, whilst perceived ease of use is the extent to which a person believes that use of the system will be free from effort. These two constructs have an important impact on a person’s attitude towards using the system but, unlike the TRA, Davis found that attitude did not completely mediate between beliefs and intentions. This
suggests that an individual could hold negative attitudes to a system, but would still use it because it has high-perceived usefulness (Dillon and Morris, 1996)\textsuperscript{11}.

3.4.2 Attitudes of library staff to Technological change

Research, which explored the influence of the attitudes of library staff, found that attitudes towards computers were positively associated with computer use and were also predictive of the number of hours of work performed on a computer. The authors suggest, “Attitudes towards computers are an appropriate focus for organizations attempting to increase the number of hours that their employees use their computers” (Winter et al., 1998)\textsuperscript{12}. A study by Jones et al. (1999)\textsuperscript{13} noted that focus group participants had expressed negative attitudes towards technology, whilst a review of the literature had suggested attitudes are important in relation to both ICT and to the success of training.

It should be noted at this point that there are many variables which seem to have relations with or influences on the attitude of the librarians towards the use of ICT. They are age, gender, prior knowledge and training, anxiety and educational qualification.

Implementing information communication technology (ICT) in the library depends largely on the attitudes of library staff to its usage. The application of ICT has caused significant changes in libraries; for Ex. automated cataloguing, circulation, information retrieval, electronic document delivery, and CD-ROM databases, for example. The advent of the Internet, digitization, and the ability to access library and research materials from remote locations created dramatic
changes by the end of the twentieth century. Ramzan (2004)\textsuperscript{14} observes that expert systems, wireless networks, virtual collections, interactive Web interfaces, virtual reference services and personal Web portals have brought changes since the start of the new millennium. There have been fast and significant changes in librarianship, where digital and electronic libraries complement and in some cases replace traditional libraries.

Fishbein and Ajzen (1975)\textsuperscript{15} explore the role of attitude in their Theory of Reasoned Action (TRA), which looks at the relationship between attitudes and norms and their influence on behaviour. Others have considered how people are influenced by peer opinions. Attitudes affect behaviour and must be considered in managing staff, especially during change and innovation (Spacey, Guilding, and Murray, 2004)\textsuperscript{16}

Information Services Center at Wipro releases many e-Newsletters on a monthly basis in consultation with experts heading different domains/technologies. These e-Newsletters are found quite useful by experts and their team and serves as an SDI services which is through ICT. They are hosted on ISD portal and as well sent to concerned team from ISD.

Using and implementing information communication technology in the library depends largely on the attitude of library staff toward this digital age. There is no doubt about the fact that significant changes have taken place in libraries in the developed world due to the application of information communication technology (ICT) in automated cataloguing, circulation systems,
According to (Ostrow, 1998)\(^\text{17}\) the advent of the Internet, digitization, and the ability to access library and research materials from remote locations have also created dramatic changes by the end of the twentieth century. Ramzan (2004)\(^\text{18}\) asserted that developments like expert systems, wireless networks, virtual collections, interactive Web interfaces, virtual reference services, and personal Web portals bring about greater changes since the start of the new millennium.

Attitude measurement in management information systems (MIS) research, for instance, has been shown to be informed by a specific understanding of the relationship between attitudes and behaviour as proposed by Fishbein and Ajzen (1975)\(^\text{19}\) in their theory of reasoned action (TRA). (The theory posited that an individual's behaviour is determined by his/her intention to perform that both behaviour and intention are influenced jointly by the individual's attitude and subjective norm – a measure of how people are influenced by their peer's opinions.) Based on this reasoning, attitudes play important part in affecting behaviour and must, therefore, be taken into consideration in managing staff, especially during processes of change and innovation (Spacey, Guilding and Murray, 2003)\(^\text{20}\). According to these, the authors concludes that attitudes are also open to influence. The category of a member of staff in the library system, for example, might have some bearing on an individual's opinion of the efficacy of the Internet and subsequent decision of whether to use it at work.
It should be noted that the drastic change in library practices brought about by rapid changes in information communication technology is posing challenges to the Librarians in recent time, particularly in the developing countries. To cope with these challenges posed by ICT, Librarians in developed countries moved quickly to learn and adopt new information technologies (Ramzan, 2004). Computers, software, CD-ROM, email, Internet, networks and other information management and communication technologies were introduced to perform different library functions and to provide innovative user services. At the same time, library staff raised their level of knowledge of new information technologies through continuing education programs, professional training, and through revisions in their library and information school curriculums. This helped them to leverage the benefits of new technologies. Ultimately their libraries became well equipped with sufficient hardware, appropriate software and effective technology-based materials (Ramzan, 2004).

Adekunle, Omoba and Tella (2007) reported the research work in states that attitude is a learned emotionally toned disposition to react in a consistent way favourable or unfavourable towards a person, object or idea. Generally, attitude may be defined as the total of a man’s inclination and feelings, prejudices or bias, preconceived notions, ideas, fears and convictions about any specific topic. A person’s attitude prepares him to react to a given stimulus in one way rather than in another.
3.4.3 Training and Library staff

Training is generally acknowledged to be essential in introducing successful change in the workplace. Furthermore, it is a key strategy in overcoming any resistance to change and in providing staff with the requisite skills as both New Library and Building the New Library Network identified. Training appears to affect perceptions of technological change and attitudes to ICT and change (Craghill et al., 1989\textsuperscript{24}; Biddiscombe, 1997\textsuperscript{25}; Gilmore, 1998\textsuperscript{26}; Cooper, 1998\textsuperscript{27}; Jones et al., 1999\textsuperscript{28}). Good training is shown to have beneficial effects on staff and their reactions to new technologies. Respondents in a study of university library support staff saw training as a means of building staff morale, curing techno stress and reassuring them of their ability to do the job (Jones et al., 1999\textsuperscript{29}).

Training without the necessary skills or understanding of staff fears might reinforce anxieties about using ICT. Training, then, must not take place for the sake of training and must provide the necessary skills, be of the right amount, of good quality and may have to combat fears, as well as promote understanding and confidence in using ICT.

Time is a vital for good training. It is important that staff have the opportunity for hands on practice during a training programme, such as taking time away from the desk to practice. Similarly, once staff have undergone training, they should be able to put their skills to use straight away. Different training methods suit different people. Small (2001)\textsuperscript{30} notes that library staff
prefer training which includes self teaching with support within a specific framework and training programme.

3.5 CURRENT TRENDS

Library is a vast storehouse of information. Emergence of Internet and Communication Technology (ICT), libraries has been acquiring different approaches of the same and mode of service is changed. Therefore, different types of libraries have born in society, such as:

**Hybrid library**: The hybrid library is a term used to describe libraries containing a mix of traditional print library resources and the growing number of electronic resources. Hybrid libraries are mixes of printed books and magazines, as well as electronic materials such as downloadable audio books, electronic journals, e-books, etc. Hybrid libraries are the new norm in most public and academic libraries.

**Automated library**: A library where access points and housekeeping operations are computerized is called an automated library. The graphic records are still print-on-paper publication (Sharma, 2005).

**Digital library**: A library in which a significant proportion of the resources are available in machine-readable format (as opposed to print or microform), accessible by means of computers.

The digital content may be locally held or accessed remotely via computer networks. “A digital library is popularly viewed as an electronic version of a library where storage is in digital form, allowing direct communication to obtain
Digital library is not only digitization of physical resources, but also thoughtful organization of electronic collection for better access. Such organization provides coherence to a massive amount of shared knowledge base.

**Virtual library**: The access point as well as the graphic records are in electronic/digital form when these electronic/digital libraries are connected via various networks, particularly the INTERNET, this is called virtual library. A "library without walls" in which the collections do not exist on paper, microform, or other tangible form at a physical location but are electronically accessible in digital format via computer networks. Such libraries exist only on a very limited scale, but in most traditional print-based libraries in the United States, catalogs and periodical indexes are available online, and some periodicals and reference works may be available in electronic full-text. Some libraries and library systems call themselves "virtual" because they offer online services (example: Colorado Virtual Library).

### 3.5.1 Changing Concept of Libraries:

The concept of Library and Library professionals has changed as changes takes places in the field. Some of the changes, for example has stated below for understanding of the changes.
### Concept | Library science | Information science
--- | --- | ---
1. Unit | Library centre | Information centre
2. Medium | Book | Data base
3. User | Reader | Recipient
4. Staff | Librarian | Information officer
5. Service | On demand | As & when needed
6. Tool | Catalogue | Controlled vocabulary

#### 3.5.2 Changing Roles of LIS Professionals

Presently, librarians are playing an integrated role beyond their traditional job. In a fast changing world, there are new demands and influences on libraries and information centers. Using modern technologies, libraries all over the world are now shifting their emphasis from traditional to multidimensional work force. As a corollary to this, LIS professionals are supposed to play versatile role in different areas of libraries and information centers to meet the expectations and needs of the present situation.

**Advocate:** LIS professionals act as lawyer when they deal with the issue relating to law such as copyright law, intellectual property right, etc. Librarian champion the cause of academic libraries through various advocacy programs to promote the library and resources. They can communicate news about the library through newsletters, web sites and memos to parents and staff. Their job is to keep principals and teachers up to date on what is happening in the library and to promote library activities and special projects. “Schools are learning communities encompassing students, teachers, administrators and parents”. Librarians must communicate the mission, goals and objectives of the resource centre to the entire user community.
Consortia manager: The LIS professional for Consortium operations is responsible for coordinating and overseeing consortium operations, including strategic planning, systems development and project management. Related responsibilities include facilitating communication among the participating libraries. In addition to these responsibilities, the Librarian for Consortium Operations acts as the consortium’s representative with vendors for contracted products and services.

3.5.3 Skills Required for the New Age LIS Professionals

The electronic environment of the 21st century will demand a range of skills from Library and Information Science (LIS) professionals, including:

i. Technical skills.

ii. Information Technology (IT) skills.

iii. Managerial skills (Sridhar, 2004).

As per the National Knowledge Commission, India, skills required fulfilling the changing role of libraries are:

i. Library and information handling skills.

ii. Service orientation.

iii. ICT knowledge skills.

iv. Communication and training skills.

v. Marketing and presentation skills.

vi. Understanding of cultural diversity.

vii. Knowledge mapping skills
3.6 FUTURE TRENDS

Since past decade or so, many philosophers have predicted severe consequences resulting from an aging workforce and technological change. LIS professionals have done a commendable job in seizing new technology, but they will need to become much more aggressive and proactive in the future as they face increased competition from a variety of groups who think they can do a better job in providing information to the user. So in the near future, the LIS professionals should have to take necessary responsibilities in:

- As providers of resources, they can help to enhance the amount of available resources by making stakeholders aware of the importance of sharing. In particular, as far as the sharing of content is concerned, they can operate by promoting digitization campaigns and the open access approach. These actions may result in a vast amount of new digital information accessible online which can be exploited by advanced services.

- Within a digital framework, libraries are certainly the best carrying out content description, maintenance and preservation of resources. By exploiting their large experience acquired in the past, they can contribute to the long-term availability and to the quality of the resources disseminated by the digital libraries (DLs).

- Long-term availability also requires the implementation of models able to support the sustainability of the resources provided. Libraries, either alone or as members of library consortia, can also act as the organisations deputed to define and put in place these models.
As main resource providers, libraries can work jointly on the definition of common policies and standards. An agreement on these aspects would strongly contribute towards facilitating the design and development of the new complex services required to fulfill the emerging user needs.

In the future libraries can also play an important role as mediators between the infrastructure and the user communities. In particular, they can proactively promote and facilitate the creation of DLs that respond to the needs of the user communities. They can also assist users by providing, if necessary, the skills required to select, update and exploit the DL content and services.

It is not hard to realize that in near future library and information centres would be globalized and maximum services will be available from remote places.

In a nutshell, it can be said that the Library and information professional communities are being affected by a range of ICT developments and so find their roles changing worldwide. A librarian with diverse talents and training, and who is flexible, will be able to meet the challenges of future library scene. The container of information is not only the print materials but this is the age we are living where a huge rate of information born in digital format. Technology alone cannot help bring about the required changes. Attitudes, practices, and policies need to change if libraries in India are to truly benefit themselves and their community of users by the application of new technologies; as the core objectives of LIS professionals are unchanged although the mode of services is changing to cope with paradigm shifts.
REFERENCES


