CHAPTER I

INTRODUCTION

1.1 INFORMATION AND LIBRARIES

Digital library is the newly emerging trend in the modern world and it’s the hope for the future. Apart from this there is more scope to these, but none addresses the field as a whole comprising digital libraries its research agenda. The field of digital libraries will be limited if viewed only as a sub field of prior research interests. To realize its full potential, the field must be viewed as a union of sub fields from a variety of domains combined with additional goals, and thus it becomes an important site for exploring new research issues. Digital library research must both respect the existing tradition of our physical libraries and transcend current practice in developing a new, broader research agenda.

The recent decades have witnessed tremendous advancement in information technology and its application. The latest technologies offer cheaper price computer processing power, mass storage inexpensive access to high speed networks and retrieval devices which gives us the ability to crate, manipulate, store and transfer large quantities of formation in digital form at low cost, as electronic publishing and resource sharing activities have become very easy and convenient today. These major changes have led to the creation and development of digital libraries. Digital libraries basically store of materials in electronic format and manipulate large collection of those materials effectively. The key technological
issue is how to search and display the desired selections from and across e collections. The main focus of digital libraries should be on issues of access, cost and digitization technology and how to develop the necessary infrastructure for effective mass manipulation of the information network.

Information can be regarded as the currency of the new age. Though the gold, silver and gems have been regarded as valuable commodities down the ages, in the contemporary age of knowledge explosion, information has ascended to the peak in the field of value. Information has become a strategic raw material and a dominating factor in all managerial aspects like goal setting and planning, decision making, and communicating. Scientific research with eventual development is heavily influenced by Information and Communication Technology developments.

Information has always played a significant role in history. The statement ‘knowledge is power’ is becoming ever more significant as it is backed with Information and Communication Technology tools and this increases the efficiency of the productive transformation process of inputs to goods and services as outputs. Information is the raw material for the process of communication, and that (information) should be treated as a marketable commodity regulated by economic forces alone. People require information to enable themselves live as reasonable members of the society. The volume of information is increasing rapidly. The availability and access to modern information services using advanced technologies in data processing and communications are of crucial importance for the efficiency of Research, Development and Demonstration (RD and D) activities, technology transfer and for the socio-economic development of the community.
Globally, in contemporary the New Information Age which is characterized by globalization of the world economy, information travels very fast one pole to another. Today the quality of a person is adjudged how ‘informed’ he or she really is. Though information is an essential need for every individual. Information means different things to different individuals. Though information is regarded in this manner. It has its own characteristics which differ from those of natural and anthropogenic resources.

In global scenario, the outputs of information are measured by both quality and quantity of information being used by respective scientists, researchers and so on. However, print media has still not solved the problems of accurately and faster delivery of information, irrespective of time, space and cost factors. The future of the library would be marked as culmination of techniques/technologies which would act as a state of the art library. It is our moral duty to note down the wordings of our former President of India Hon’ble Dr. A.P.J. Abdul Kalam in his visit to JNU University in Jodhpur. He asked all publishers of India to get ready to bring out their publications/books in CD formats or Digital books before 2020 to make India succeed in the gamut of world digital knowledge.

The outputs of information have been on the increase much faster now as compared to the previous five decades but their retrieval is comparatively less as compared to user needs. There is a need to bring out drastic changes in their conventional print media into digital form irrespective of time, space and cost factors. The vision 2020 world would be marked as blocks of digital information, concept of virtual library, global information access through internet, giant sharing of three professional bodies, i.e., library entrepreneurs, publishers, and technocrats.
Library entrepreneurship would be used for better management of information handling as a resource utilization which would help in initiating, promoting and maintaining economic activities of information handling.

There is a need to reshape library systems and services keeping in view the present library budgetary and delivery of information problems of the users and scientists.

Libraries also were formed along with the parent institutions to fulfill the need of the user community. A library as the fountain head of information from which flows the waters of knowledge has to extend its facilities, services to the users fully to make the users update their knowledge. Hence, the present study discusses the organizational setup of the library, library facilities, resources, services and physical facilities.

1.2 CHANGING FACE OF ACADEMIC LIBRARIES

Information Technology has changed and will continue to do so both in form and substance. It is time to reevaluate service models that have functional values for years. We have to creatively identify new solutions to old problems and achieve results. Being prepared to manage change can furnish us with the ability to flourish. We should attempt to reestablish standards, criteria or bench marks that are considered to be the basics for quality library services. The potential strength of information technology is being exploited for efficient, effective and cost benefit library services. University libraries, if not the first, started applying IT gradually for all their activities. While applying IT, care is taken in every step of implementation. Sudden shifting of the old system to a new one by way of
applying IT may prove not only dangerous but is sure to create several problems; Librarians must keep themselves briefed of all matters connected with application of IT for library activities to counter all problems.

Converting the library records into a machine readable form has to be tackled very cautiously. Converting the records of the most recently acquired documents first, and then convert the backlog later may be the good solution to satisfy the users. Before converting the total library collection, a management decision should be taken in weeding out of some of the old, damaged and unused documents. It is a prerequisite to identify the core, important and usable collection for conversion into machine-readable form. The entire library faculty as well as users need proper education and training in ensuring the new system is user friendly by which the consumers could utilize the facilities effectively and with confidence. They may be trained locally or should be deputed to attend the training programmes, workshops, conferences and exhibitions at national and international level. The initial training programme itself is not enough; it should be a part of a continuous process. It will help the library to keep its members abreast of the latest techniques and to impact training to the new entrants. What is considered the best at present may become obsolete in future. This is true in case of IT and its applications, once the new systems has been implemented, provision should be made to monitor, audit and evaluate it for refining the system. Obsolescence in hardware and software has to be managed with upgrading and replacement policy.

It is widely accepted that technological advancements always bring revolution in all disciplines and convert our dreams into reality. Similarly advances in information communication technology are very active with solutions for day to
day problems of University libraries. Now all the jobs involve in information processing to transact work effectively, efficiently and economically within less possible time. Besides these external discs of electronic media and online storage is an excellent solution for storage or space problems of libraries which would solve not only the space or storage problem but are also capable to make information accessible anywhere at anytime. Further, maximum utilization of available information is now possible due to easy accessibility of LAN, MAN, and networking through web.

It is evident that libraries play an important role in teaching-learning process even in historic times. While the learning process gradually deviated from teacher centric with different modes of informal education, a library occupies that pride of place by contributing and supplementing the role of a teacher. With the advent of science and technology, information and communication technology applications have become cheaper in providing education through conventional modes in general and particularly in open, distance and further learning. In the recent past a large number of educational institutions established with good ICT infrastructure and contributed in content educational materials in e-formats and technologies for their delivery have been improved drastically particularly in international higher education. In the context of Indian Higher Education professional institutions like medicine, engineering, science and technology, universities and research institutions have started intensively using information technology applications for academic communication and learning practices during this decade.
1.3 THE CONCEPT EXPLAINED AS INFORMATION TECHNOLOGY

The term “Information Technology” is used ambiguously in the literature of several fields. In computer science and its applications it is used as a synonym for information technology management (Synott and Gruber 1981) or as identical to data management’, where the emphasis is on the structures underlying quantitative data and their relationship to the design of databases. In business or management studies it has similar connotations to technology management, with an emphasis on the relationship of information technology to business performance and competitiveness (Synott 1987). In the field of Library and Information science, it is identified with the ‘emerging market’ for information workers (managers), whose perception of information embraces data, organizational intelligence, competitive intelligence, external information resources of all kinds and associated technology (IT) for handling these different sources. Compared with the other areas, Information Technology in this latter context is more widely concerned with the meaning of information for the information user and with information retrieval issues.

Schneyman (1985) elaborates on the definition of “Information Technology” covers five types of “Information Resources”

- Systems support and including computers and telecommunications, processing data and images.
- Conversion and transformation, including reprographics, distribution and commutation, including network management and telecommunications
- Retention of information
• Storage of Information
• Retrieval of Information

This covers libraries, record centres, filing systems, and internal and external databases. This expansion of the idea of course takes it into the difficult area of the interface between information resources in the sense of data and documents and the technology is used to manipulate, manage and transmit those resources, with the result that information technology becomes characterized as an information resource.

Fairer – Wessels (1974) attributes the application of Information technology in a library is viewed as the planning, organizing, directing, and controlling of Information within a library. Information resource management is viewed as using technology (e.g., computers, information systems, Information Technology) and techniques (both manual and technology techniques) effectively and efficiently to manage information resources.

In the words of Susan (1993) “Information Technology” is a philosophical and practical approach to managing information resources. Information is considered as a valuable resource, which should be managed like other precious resources and also contributing directly in accomplishing library goals and objectives. Information Technology provides an integrated view for managing the entire life cycle of information, from creation to dissemination. Information Technology views information and information technology as an integrating factor in the library. Further, Information Technology looks for ways in which the
management of Information and the management of Information Technology are interrelated and fosters interrelationship and library integration.

Vicki (1988) describes that Information Technology includes the management of (1) the broad range of information resources, e.g., printed materials, electronic information, (2) the various technologies and equipment that manipulate these resources. Overall, the intended purpose of the application of Information Technology in a library is to increase the usefulness of information.

According to Margaret (1993) Information Technology is a multidisciplinary practice, which applies sound management principles to the life cycle of an organization’s information resources. The information life cycle includes creation, evaluation, acquisition, organization, representation, control, dissemination, use protection and ultimate disposition of information –whatever the format or medium. In the words of K.D. Dabas and Sera Singh (2000) it is rightly said that “Information Technology” is nothing but application of information technology in Information handling activities. According to Elizabeth Adams (1992) application of Information Technology in a library is a top management function to develop a set of policies, programs and procedures too efficiently and effectively plan, manage and control information requirements and supporting information handling resources.

The 9th edition of Harrods’s Librarians glossary defines Information Technology as “An imprecise term for the various activities that contribute to the effective production, co-ordination, storage, retrieval and dissemination of
Information through computers in whatever format and from internal and external sources, leading to the more effective functioning of the library”.

1.4 PROBLEMS AND CONSTRAINTS IN APPLICATION OF IT IN LIBRARIES

According to Kanchan Kamila (2000) four types of problems have emerged in the application of IT in library and information centres. They are conceptual problems, human problems, organizational problems and technological problems. Conceptual problems mean lack of agreed definition of information management components and its relationship with information technology that creates conceptual problems. The process of Information handling activities must be desired, understood, accepted and adopted as the top priority of the organization in order to be effective. Human problem means the diversity of individual attitudes and information gathering habits in the workplace and this is one of the main barriers to wide acceptance of the application of IT information management activities.

Organizational problem means, organizational politics percent a potentially significantly barrier to the effective implementation of management. The main difficult in this part is to find leadership with the correct blend of general and specialized IT skills. Technological problems are related to the designing systems (IT) which can support the information resources management activities.
1.5 USE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN LIBRARIES AND INFORMATION SERVICES

The rapid advancement of Technology, networking, and customization of information represent the factors that affect the libraries. From its various modes and operations it can be said that communication is the major factor for the rapid modernization of the world. The impact of the primary modes of ICT on Library and Information services is of vital importance whereas other modes perform subsidiary function only.

Computers can provide pinpointed, exhaustive information, comprehensive and exhaustive searches and help in avoiding duplication of works. Computers have been used extensively in libraries to provide the following services i.e. Indexing services, Literature search service, CAS and SDI service, Translation and online Service, Offline and online services, Storage, retrieval and communication of information.

These services will certainly improve the quality of library and customer friendly activities which would enhance the user friendly environment. Thanks to the CD-ROM technology shelf space is minimized with the less maintenance cost and provides easy access to large volume of information. The production cost of it which is cheaper than that of a printed book involves storing, searching and retrieving large amount of information. Hence, it has emerged out as the best training tool in serving the library users in various professional and research institutions. A multimedia and CD-ROM database accept electronics form of journals due to the decreased number users of familiar printed journals and books, Eg. E-Journals, e-books.
1.6 IMPACT OF COMMUNICATION TECHNOLOGY ON LIBRARIES AND INFORMATION SERVICES

The word communication comes from the Latin word ‘communicare’, means “to share” and it consists of four types based on the levels. Four levels of communications as Intra-personal, inter-personal, Mass and cultural communications. Models of communication represent the process of communication consisting of three basic elements the source, the message and the destination. During the ancient period, knowledge was stored in the form of clay tablets, palm leaves and copper plates. The technological innovations are now associated with the shift from the oral presentation of knowledge to computerized web page. However, in the nineteenth century a revolution in communication began with the development of telegraphy and the telephone and continued with the invention of the radio and related technologies near the turn of the century. Here we deal with the introduction of and advancement in the electronic media of communication have brought a revolution the media that brought in the cultural revolution are: Telegraph, Telephone, radio, cinema, motion picture, television, computers, communication satellite, online technology, internet, e-mail, FAX, tele text, and videotext, data systems and networks, teleconferencing, fiber optics and microwave. Recent innovations, including those listed above bring work place to the home and office by making it ‘virtual office’, virtual class room and virtual library’. Access to library services outside the library building is possible because of such high-class technologies.
1.7 DIGITAL LIBRARIES

A digital library is a collection of digital objects. A collection of research papers is a typical example. When this collection gets sufficiently large, users of the digital library cannot examine each paper individually to find if its subject interests them. To address this problem, digital librarians create an interface to stand between the content of the collection and the user. In a traditional library, an example of this would be a card catalog – a collection of small cards that represent the larger objects contained in the collection. These cards are more manageable than the books that they represent. In a digital library, there are a number of ways that we can present the digital collection to the user. The first thing that we need to do is to describe each object in a manageable way. This description is called metadata – data (the description) about data (the digital object). This metadata is more manageable than the digital objects that it represents. Metadata is written in a standard format. This allows the metadata to be manipulated using automated tools.

Digital Libraries is a heterogeneous phenomenon. It is a system in which information is available in hard copy on various magnetic discs and also from online systems. It provides coherent access to large, organized, nascent and repository information and knowledge, according to the interest and need for the users. It operates on digital materials such as e-journals, web pages, database multi-medias, programs, bulletin board notices, sites and searches.
1.8 WEB APPLICATIONS FOR INFORMATION ACCESS AND DISSEMINATION

1.8.1 Search Engines

Search Engines are programs that search documents for specified keywords and return a list of documents where the keywords are found. Today, a large number of powerful search engines with a variety of search strategies are available. A search engine contains three components and these components are described briefly.

1.8.2 Web Directories

Search engines catalog individual Web Pages. A Web directory catalogs provide Web sites by topic or category, as soon as the category in the directory displays a list of sites related to that category. Since databases tend to contain different information, it can be a good idea to use at least two search tools when attempting to locate online information.

1.8.3 Using Search Tools

The search queries can be made through the search engine by using keyword and Boolean search.

1.8.4 Keyword Searches

A search query is one or more keywords that are entered into the search engine. A keyword is an important word related to the specific topic to be searched.
1.8.5 **Boolean Searches**

A Boolean search specifies how the search engine should use keywords to locate specific pages.

1.8.6 **Boolean Operators**

**AND** - The Search Engine locates only those pages containing both keywords. Many search engines use the plus sign (+) in place of AND.

**OR** - The Search engine locates pages containing one or both of the Keywords.

**NOT** - The Search Engine locates pages that contain the first keyword but not the keyword after the NOT operator. May search engines use the minus sign (-) in place of NOT.

1.8.7 **Robots**

Robots are also called “Web Wanderers”, Web Crawlers”, or “spiders”. These robots are programs that go across the World Wide Web (WWW) looking for the information specified. Robots move from one web document to the other by referring to the hyperlinks that are embedded in the web pages.

1.8.8 **Databases**

A Database is a collection of information, organized for easy retrieval. Databases are organized by fields and records. A field is one piece of information, such as a first name or last name. A Record is a group of related fields that contain
the information gathered about a particular person or item. The following are the main reasons for connecting a Web Site to a Database:

- To allow visitors to access information directly from the Database
- To provide a way to collect information from visitors and add it to the database

1.8.9 Static versus Dynamic Pages

Web site developers often use the terms “Static and Dynamic” to distinguish between pages that contain fixed information and those capable of change. On a static page, the information is embedded in the HTML Code.

1.8.10 URL Components

HTTP requires Web Page that has a unique address known as a uniform resource locator or URL. URLs enable a browser to locate specific page files on the Web. Without URLs users would not be able to browse between Web Pages.

- The Protocol indicates the types of server where the file is stored.
- The address is the Server’s address
- The directory path is the file’s location within the file structure
- The retrieved file is the name of the specific Web Page file being accessed.

1.8.11 Story Boarding

Many Web design professionals use story boarding when they are designing a Web Site. A storyboard is a visual representation of the Web Site.
Storyboarding involves illustrating your organizational ideas by roughly sketching the relationships among elements on each page, as well as the relationships among the Website’s pages. The storyboarding has a number of advantages:

- It helps in visualizing the basic structure of the Website
- It graphically illustrates the links between individual Web Page
- It provides a brief look at the contents of each Web Page

1.8.12 Frequently Asked Questions (FAQS)

A great service offered by the Internet is the FAQs. It stands for “Frequently Asked Questions” can be pronounced “fake” or simply “F-A-Q”. A FAQ is a text file that is created to answer common questions a user may have about a certain software programme or that a newcomer to a Website might have, regarding the site. This service is an excellent service of the Internet for sharing information about a particular topic of user’s interest.

1.8.13 Internet Relay Chat

The most personal and instantaneous methods of communication on the Internet are Internet Relay Chats (IRC). These services allow multiple users to carry out text-based (Typed) communication with others in real-time over the Internet. The IRC itself is a teleconferencing system, which (through the use of the client –server model) is well suited to running on many machines in a distributed fashion. The IRC Client program connects over the Internet to central IRC servers where the participants are all in the same virtual room.
1.8.14 Videoconferencing

Videoconferencing is a way to facilitate remote meeting between two or more individuals present in geographically dispersed locations. In general, it means that users can meet and share information virtually from wherever they are using videoconferencing and communicate using whatever type of network available with them. The video conferencing facility can be used were direct personal interaction with visual demonstration is required in a process of learning, teaching, research environment, business process for both the communicators and receivers and from different remote geographical location. This technology reduces considerably the time of travel, labor and expenses. Thus a large amount of human resources potential and finance could be saved.

1.8.15 Blogs

A blog is easy-to-create website that allows users to share their thoughts with the world managed by a lightweight content Management System. The word “blog” comes from “Weblogs” because a blog consists of a signed and dated log of individual postings. The topic of the blog can be anything, from the personal to professional. Blogging can be an interactive activity. Users can add comments to a blogger’s postings, others can respond, and a conversation ensues. Lately, bloggers have become well-known commentators on the political scene, but blogging can encompass any topic or no topic at all. The users can setup their own blog by visiting Blogger.
1.8.16 Rich Site Summary (RSS)

RSS is a new technology on the Internet. It allows people to place news and other announcement–type items into a simple XML format that can then be pushed to RSS readers and Web Pages. The RSS stands for Rich Site Summary or Really Simple Syndication. Users can subscribe to the RSS newsfeeds of their choice, and then have access to the updated information as it comes in. RSS is used for all kinds of purposes, including the news itself and announcing new content on Websites.

RSS content may be read by using an RSS Reader, or aggregator. This is usually free software that the users can install on their computer that posts new items and stores old ones in a graphical interface. RSS reader is similar to e-mail software in that it displays incoming items and can store content for offline reading. Subscribing to a newsfeed is usually as simple as entering the address of the RSS document.

1.8.17 Whois

Whois is a directory server, providing the client/server program, on networks that store phone numbers, addresses and e-mail addresses. It is a protocol used to find information about networks, domains and hosts. The Whois records normally include data on the organization and the contracts associated with these networks and domains.

Whois service operates through a whois server. Anyone can connect to whois server and send a query. The whois server will then respond to the query and
close the connection. The most common use of whois for finding information about domain names. Whois search can also reveal the name or network mapped to a numerical IP address.

1.8.18 Using the Web for Learning

Computer based training and Web –based training are two sites to teach various types. The most common technologies used for learning are

- The Internet allows students to register for a class, view prerecorded or live lectures, complete assignments, interact with teachers and other students, and take tests.
- Videoconferences: Video conferencing provides a “Virtual Classroom” where students and teachers can see and hear each other and participate in online discussed in as real-time lectures and discussions
- e-Mail: Students can use e-mail to participate in discussions, receive homework assignments, and deliver completed assignments, completed assignments to the instructor.
- Chat: Web based chat room for students and teachers to engage in real-time instant message sharing.
- Discs: Computer-based training uses compact discs (CD –ROMs) or digital Video discs (DVDs). CBT Programs can offer customized study for each student, and provide feedback on student performance. Many printed textbooks have companion discs that act as CBT, offering online tests and other features.
1.9 E-RESOURCES AND LIBRARIES

The letter ‘e’ has completely changed the face of libraries particularly higher academic libraries in terms of resources, facilities and services with the economy, accuracy and usability. The importance of Electronic Publications is that they:

- Tend to allow grated flexibility of access to materials which is critical in the virtual library environment
- Can allow remote access
- Access at any time, day or night
- Can allow simultaneous access by multiple users and
- Can permit linking between one part of a publication and another or indeed, between different publications.
- Eliminate the problem of missing late or stolen documents and the need for binding of materials.

1.9.1 E-Resources – Procurement, Access and Evaluation

The exponential growth of interest in the Internet in recent years has created a digital extension of the academic research library for certain kind of materials. Particularly some of the potential knowledge resources that are recently generated are available only in electronic formats, that need to be acquired, and accessed by the University research community in the contemporary globalization and knowledge driven world. It is imperative for the University libraries to make where abouts and the status of the knowledge resources generated and available
elsewhere and this could directed at their own user community Gaining momentum in creation and organization of information resources electronically makes it possible for convenient and easy access of a range of knowledge resources and relevant content that can be available in electronic form from which one can access via electronic gadgets and e-resources.

1.9.2 Relevance and Significance of E-Resources

Libraries have been integrating new formats into their collection management strategies, including microfilm in the 1930s, audio-visual materials in the post-world war II era and CD-ROMs in the 1980s. During the last decade, electronic journals, electronic books, the World Wide Web, and the full text databases have emerged as important formats that present numerous challenges to librarians.

- It enables technology based information access
- Making of information on the synchronous access makes available the information 24/7
- Convenient and easy to use access
- It saves and/or reduces the physical space taken up by library materials.
- Information literacy and training to user community on both print and electronic access
- It often adds enhanced searching capabilities and are more viable in digital formats
• The library materials are available at the user’s desktop, regardless of where the user is physically located.

• Provides the user with the capability to download and manipulate text

• Often allows for multiple, concurrent users

• Eliminates the problem of a book being missing off the shelf

• Less labour intensive

1.9.3 Use of E-Resources in Libraries

The Internet e-resources in transforming the library system and as well the way in which we view information sources. It has made simple and speedy purchase of information sources like books, journals and electronic publications. Many publishers catalogue tools like “Books in Prints” as well as forms for ordering documents are available on the Internet. Librarians can search the current publication on the area of activity and the user can browse any topic of interest existing in any part of the world and get response within seconds. The Librarians need quick access to book, journals and electronic publications. Intent access is the simple and efficient method for access and updating the documentation and interface of catalogue of all libraries.

The e-resources have made a tremendous impact on the researchers and the students. With the advent of e-resources a significant transmission can be seen in their approach and the way they seek information and the methods they employ for research and learning activities. This has become possible as e-resources provide a wealth of new course material and acts as a powerful supplement to the transitional ways of study and learning through e-resources facilitates electronic
communication, exchanges of ideas and collaboration in search globally. E-resources can be accessed for the latest development in one’s area of research at an amazing speed. It also plays a significant role in distance education, conferencing and thus transforming the academicians as facilitators providing guidance, to students and steering observations. The internet therefore creates an excellent academic environment where the research community can perform their activities in a rejuvenated manner. Hence, it is essential apart from others the research students can have excellent opportunities to use Internet based e-resources for various purposes such as information access, communication, scientific correspondence, publication of research reports and interactive session with other researchers and students in the field. Thus it is essential to have access and good knowledge about Internet technology apart from other IT competencies, Databases and web resources.

1.9.4 Challenges and Issues

To the highest priority of a library, electronic or any other is to serve the research needs of clientele. The development, maintenance and extension of its collection and its technologies must be supportive as well as subordinate to this primary objective. In order to face the challenges in the present electronic environment there is a need to study and understand the transformations which are now taking place in the technology field.

- Co-operation and co-ordination among all segments of the information sector
• Must develop mechanisms for sharing of information at local, national, regional and international level.

• Must implement a comprehensive and cohesive information technology

• Copyright and access issues

To the majority of the e-resources users and the scientists, executives, corporate employees, government employees, businessman, librarians, students, teachers and researchers, it gives immense help to researchers, information technology tends to be a catch all term to cover various developments taking place in recent times and continue to do so. However, to begin with, only a few specialists were aware of the value of IT for library and information centres operations. But this situation has changed considerably as is evidenced by the fact that a large amount of literature is now being generated on IT applications in libraries and information centres. With the advent of minicomputers, online services, compact disc technology, and library systems/servers catering to different requirements of different users have become economically feasible. Application of this new technology provides more and better services. As a consequence, it may be said that “we are in a time when many people involved in the library community are uncertain about what their role and the role of others will be in the near and distance future. All libraries today will have to be flexible and understand the true nature of their existence, or their missions. Products and services provided by all will have to change, but mission will stay the same (Luigendigk, 1996).

As Snyder (1996) says keeping up with technology and resources is an overwhelming task and concludes by suggesting that the paradigm of thinking has
been changed from viewing change as a threat to security to realizing that there is no security with our change. From the foregoing discussion, it is clear that libraries and librarians have little choice but to adapt and adopt interesting e-services for library activities and information services generation. Despite its enormous potential, IT is largely underused by libraries in developing countries such as India. Therefore, it is necessary that information professionals examine and design appropriate strategies in the selection and use of technologies to increase productivity in library operations and in the enhancement of services to users.

The information professional has to actively develop and manage a wide range of structured and organized knowledge resources by providing all types of access, remote access, physical access, personal access, intellectual access and networked access – to resources. This has to be done in a cost-effective and user centered way. This then leads us to the question as to whether the modern day information professional would be in a position to handle the challenge of traditional and electronic/digital librarianship. Probably, they can provide and improve their professional competencies in which scientific, research, methodological, managerial and economic skills are integrated with communicative navigated information seeking retrieval, and analytic design knowledge (Wormell 1996, Ingwersen 1994). To conclude the challenge that we face is neither a “paperless society” nor the electronic information centre. The challenge is to maintain and optimize the resources of the library with the help of new technology. Hence library must be ready emotionally, professionally and financially to accept and make good use of newer technology.
1.10 E-SERVICES IN HIGHER ACADEMIC LIBRARIES

The vast amount of information on internet can be utilized through the various services offered. These services are usually offered by the service provider. The general services available on internet are Library that heavily draws on e-resources and hence little or no printed materials and support staff, and a more traditional library that has a significant position of the collection gets transformed into the e-form.

Cataloguers are also moving into new roles as they attempt to provide enhanced access to the new sources. They not only process books, but also CD-ROMs, computer discs and multi-format items. Time and efforts of library staff can be saved for classification and cataloguing of books by accessing some of the large libraries OPACs spread all over the globe and develop one’s own online catalogue. Duplicate efforts of technically processing the same can be avoided. The request for Inter-Library Loan (ILL) can be sent via e-mail and the photocopies may be sent by post, fax, via e-mail after scanning the documents. The library professionals can be easily provide reference and information services by accessing and searching on-line catalogues of other libraries, even downloading a lot of available information in e-mail and get them transferred through e-mail.

1.10.1 Remote Information Services

A variety of information sources and services can be accessed over the Web either on payment of subscription/license fee. These include Springer journals, Elsevier journal (few), Science Direct, Academic Press and databases of Scifiner, Web of Science, and Scopus. Most sophisticated use of the Internet is to
mount internal publication like newsletters, reports and staff publications, on the Web server and provide accessible formats and it provides access to the table of contents with or without full text search support.

1.11 E-DOCUMENT DELIVERY

As compared with electronic publications, the actual application of electronic document delivery is basically no different from its hard-copy equivalent. However, increasing client expectation and decreasing resources warrant for networking and resource sharing. Electronic document delivery can be used to maintain adequate and rapid access to resources not held locally, in an era of rising costs and declining budgets. The major issue that affects electronic document delivery is that it needs to minimize the time delay between request and delivery to be useful. Library clients shall be satisfied only when electronic document delivery methods take less time than traditional hard-copy delivery. The other issue to be resolved in this area is the impact that copyright of the materials that are ‘born digital’. JCCC, DELNET, British and American Council Library resources are some of this kind.

1.12 WEB ENABLED LIBRARY SERVICES

Dissemination of information or communicating information is mainly an important function of any library. Communication is the process of transmission and acquisition of information. In other words it can be said that communication of information means the transfer of information from creator to its user. This is possible by the way of the following services. They are Current Awareness Service, SDI Service, Online Reference Service, Documentation Delivery Service,

Current Awareness Service is nothing but knowledge of recent developments. In this service, library may organize weekly display of new arrivals. Also library should display some current information on notice board, like important newspaper clippings, list of articles published by staff, list of special issues of journals etc. But nowadays owing to the emergence of IT, the new arrival of books and journals are communicated through Web-OPAC to the users, so that they can get access of these from their own places. Services available via the Internet/Intranet have added to the importance of CAS. A “News Section” of an Internet, can include and display the current arrival journals and new addition of list, policies, and important announcements. Information seekers are greatly benefited through the CAS available on the library Intranet or Internet. SDI is a personalized information service, which is matching user profile with document profile. On account of the increasing use of computer it has to deliver current and tailor made information to the interest of the user on their desktops. Through this service the user profiles can be searched online or in both mode and matching can be done E-resources.

SDI service can be integrated with the web for creation and updating of user profile through web. Push technology plays a vital role providing CAS and SDI service to the users. In this push technology the users may register their name with their topic of interest. Then it will extract the information of users’ interest and send to users desktop.
Reference service means establishing a contact between a right reader and a right document at the right time in right personal way. This can be offered through web on remote using Live Chat like tools and may be provided whenever the user feels that the librarian service is important. Online Document delivery is an important one in any networking system. Users could browse their information need and print them or possibly download them from anywhere else. The main objective of this service is to enable the widest possible access to users from a range of delivery points.

Use of information products in the form of CD-ROM databases has effectively helped the users to the literature search in various fields. A list of CD-ROM databases can be accessed through INTERNET or library portal for the user convenient. Internet access would also be provided to the users for accessing online database services, also to navigate the latest information apart from other well-known and traditional tools. Indexing and abstracting service are mainly used for searching article purpose. Federated Search is another terms of Web enabled services that enables the user to search all the including open access databases in the Library and improve the efficiency of the recall in least possible time.

As discussed earlier, blogs, RSS Feeds, Cloud computing, instant messaging, Mobile Casting and Web Casting are the web based information services integrated. The University library websites have wider range, remote access and quicker access. Hence, the Web has to act as media for providing and accessing modernize and sophisticated information services from higher academic research libraries and thus saving the cost of time, labour and importing the quality of services is possible.
The users are the key person in any information system. All the luxuries of information revolution and problems of the information explosion are centered on the user and his/her convenience. Understanding the user is success in half of the battle in providing information services. The success of any information system depends considerably on how best the system design is based on a close and accurate understanding of the users. The user is not only the most important aspect, but is also paradoxically, a dynamic component of information system. As such, understanding users is an important and continuous activity.

The user study has been defined variously by many information scientists. According to Wysoki (1989), user study or use studies could be concerned with studying the information processing activities of the users. Empirical studies of the use of the demand or need for information is usually called user studies. In fact, this study is focused on users with a view to understand directly or indirectly their information needs, use behaviours and use pattern which is usually called user study. The term user study is preferred to library surveys because studies of information needs or information use behavior focus upon a wider range of information sources and channels rather than simply libraries. User studies comprise the study of people’s need for and use of information. A user study may be defined as the systematic study of information requirements of users in order to facilitate meaningful exchange between information systems and users. User studies are to be conducted regularly at libraries and information centers to sustain and enhance their performance.
1.15 INFORMATION BEHAVIOR STUDIES

Researchers are being interested in information behavior over the years. Although in the beginning the concept was mostly connected with information centres. In the late sixties, Paisley (1968) and Allen (1969) introduced models which dealt with elements that influence information seeking behavior. Wilson (1981) has discussed the concept information seeking behavior in detailed was probably the first researcher on ISB. Wilson (1997) also suggested that the general information behavior model may include the following three main parameters:

- Information need and its driver, i.e., the factors that give rise to an individual’s perception of need;
- The factors that affect the individuals response to the perception of need; and
- The processes of action involved in that response

Information needs, information-seeking and formation behavior are interviewed concepts which make the concept information behavior very complete.

It is referred from the alone statement that information needs, information seeking and information use behavior are inter related concepts that make the concept of information seeking behavior.

Kuhlthau (1994) has conducted empirical studies of student’s information seeking behaviour in libraries. She has developed a model of the information search process which includes six stages: Task Initiation, Topic Selection, Pre-
focus Exploration, Focus Formulation, and Information Collection and, Search Closure. The model deals with three realms common to each stage, namely, the affective, the cognitive and the physical. In this six stage model of the search process, information professionals can intervene and help the users to identity as well as solve their information needs depending on where the users are in their seeking process.

Limberg (1998) states that content is crucial to know how people seek and use information. This is contrary to the understanding that information seeking is a general process which occurs independently of the content in the information. The aim within library and information science to establish a general view of information seeking restrains research and limits the understanding of the various ways in which people seek information. Hence, if it were accepted that there is more than one type of information process, it would stimulate a deeper understanding of the information seeking process in general within the field. Instead of trying to prove that the information seeking process can be described with one model, common for different users in different contexts. The differences between context, situations and groups should be examined and illuminated, not with the purpose of separating groups but to understand better information seeking as a phenomenon. In this context, strategies of user behavior and accessing their needs become an integral part of any major library environment in the rapidly changing academic situation.
1.16 PROFILE OF THE SELECTED SURVEYED COLLEGES IN CHENNAI UNDER STUDY

Accordingly the academic research and information environment prevailed in the selected surveyed Colleges has been described.

1.17 LIST OF SELECTED COLLEGES IN CHENNAI

1. Meenakshi College for Women, Chennai
2. Bharati's Women's College (Autonomous), Chennai
3. Ethiraj College for Women (Autonomous), Chennai
4. Dhanraj Baid Jain College (Autonomous), Chennai
5. Loyola College (Autonomous), Chennai
6. New College (Autonomous), Chennai
7. Women's Christian College (Autonomous), Chennai
8. M.O.P. Vaishnav College for Women (Autonomous), Chennai
9. Madha Arts and Science College, Chennai
10. Mohamed Sathak College of Arts and Science, Chennai
11. Anna Adarsh College for Women, Chennai
12. A.A. Arts and Science College (Women), Chennai
13. Stella Maris College for Women (Autonomous), Chennai
14. Justice Basheer Ahmed Syed College for Women, Chennai
1.18 MEENAKSHI COLLEGE FOR WOMEN, CHENNAI

Meenakshi College for Women, a Government–aided institution of higher education for women, is affiliated to the University of Madras and has been a pioneer in the field of higher education for more than 3 decades.

Meenakshi College enjoys an enviable track record in producing some of the finest and most disciplined young women in the country, who excel not only in academics and in their profession, but also in arts and sports. The College is committed to shaping young women into skilled, responsible, disciplined and socially conscious citizens with a strong value base. The distinguished alumni of the college have made a mark in various fields such as Science, Technology, the Fine Arts, the Civil Service, Sports and even Mountaineering.

(Source: http://www.meenakshicollege.com/about-us)

Started on 4th August, 1975 during the International Women’s Year by the Ganapathi Educational Trust, the College has shown stupendous growth from an initial strength of 100 students to more than 3000. It is now recognized as a vibrant
institution working relentlessly for the cause of women’s education. The College offers 39 different courses in the Arts, Science, and Commerce, including undergraduate, post-graduate courses, M.Phil. and Ph.D. courses.

In 1999, the college became one of the youngest colleges to be trusted with autonomy. Considering the creditable performance as an autonomous College, the UGC has extended the autonomous status of the college up to 2013-2014. The College was conferred A+ (A Plus) grade by the National Assessment and Accreditation Council (NAAC) at the very first accreditation in 2007.

This temple of learning is an institution that works towards the goals of continuous improvement in the discovery and sharing of knowledge – a goal envisioned by the founder, late Sri. K.R. Sundararajan, a great professor of Mathematics and a renowned pioneer of higher education in the country. His life’s mission was to provide young citizen with quality education, so that they imbibe the cardinal virtues of Faith, Fidelity and Fortitude. The College is now celebrating the Centenary Year of the Founder.

It is because of the dedication and hard work of Dr. K.S. Lakshmi, first Principal and Secretary, that the goals envisioned by the Founder have been realized in such a short span of time. It is under her watchful guidance that the institution continues to scale greater heights.

LIBRARY

The main library of the college, called Sri Bharathi Theertha Library is the cynosure of all eyes. Spread over about 10,000 square feet, the library is home to
about 47,000 books. Endowed with a mezzanine floor that houses a portion of the library's book racks, the library is centrally air-conditioned and provides a lovely ambience to sit and read. Open Access system is followed in the library for all books and closed access system for reference books and journals, magazines and periodicals. There are shelf guides provided to facilitate easy access to books. There is also an Online Public Access Catalogue (OPAC) that visitors to the library can use to know the availability of books. The OPAC area of the library is an enclosure furnished with 5 computers, which students and faculty members can use to access the OPAC.

(Source:http://www.meenakshicollege.com/facilities/library)

Library automation has been done using Autolib. All resources of the library have been bar-coded and bar-code scanners are used along with Autolib for the issue and return of books. Internet facility is also available in the library if students wish to browse for information.
1. **BHARATHI'S WOMEN'S COLLEGE (AUTONOMOUS), CHENNAI**

Bharathi Women's College (Autonomous) Chennai established in 1964 is a Government Autonomous College affiliated to the University of Madras. The Institution is named after the great Tamil Poet Bharathi who advocated liberation and empowerment of women through his writings. The mission statement of the College is to Enlighten and empower women to reach out and lift up the underprivileged by imparting value-based, job-oriented education and to inspire and instill integrity, chasten and chisel good citizens to launch the nation into the global league. The College is recognized by the University Grants Commission under 2(f) and 12 (B) of the UGC Act of 1956.

(Source: http://www.bwcas.com/)

**LIBRARY**

The General Library boasts of about 75,000 books which contain both archival and state-of-the-art books. Apart from being helpful for reference of
literature, the library focuses on researches using the digital library development for access and retrieval of digital information. The Library has been organized with macro and micro-documents (Cataloguing and indexing), selection and acquisition and acts as a gateway to the provision of information services.

(Source: http://www.bwcs.com/library.php)

The Digital Library has been constructed inside the general Library consisting of systems with the latest configurations and printers. Internet connection has been a boost to increase access to world wide web and hence introduce the unstructured universe of electronically available information to the students, teachers and the researchers. Along with a huge collection of the library books, the library also has a large collection of CDs containing information on various interesting topics like leadership qualities, employment skills, Indian culture etc, apart from the subject titles.

The General Library has decentralized almost 90% of the text books and reference books among the departments, and possesses the rare collection of books
alone. A wide range of dailies, periodicals and research journals (both in English and Tamil) are available for the usage among the students, staff and the research scholars.

2. ETHIRAJ COLLEGE FOR WOMEN (AUTONOMOUS), CHENNAI

Founded in 1948, the formative years witnessed a strong foundation through introduction of undergraduate courses in Economics, Botany, Chemistry, History, Zoology and English Literature along with the infrastructural facilities, resulting in the construction of the Science Block, Hostel, Open Air Theatre and the Old Library Block. The landmark development of this decade was the auditorium, which to this day remains the pride of the college. The decade of 1968 – 1978 saw the growth of the college with the introduction of Commerce, Mathematics and Physics at the UG level and a number of PG courses and the construction of PG block.

(Source: http://www.ethirajcollege.in)
A significant development of the next phase was the introduction of evening college in 1981. The thrust was on Research with introduction of M.Phil and Ph.D. programmes. The addition of the Annexe Campus of 59 grounds augured the new direction in the growth of the College. 1990-2000 saw a steady growth with the introduction of the variety of job oriented self funded UG courses like Corporate Secretaryship, B.Com (Bank Management), BBA (Business Administration), B.Sc. Biochemistry, B.Sc. Microbiology and M.Sc. Plant Biology & Plant Bio-technology and the introduction of post-graduate AICTE approved courses MBA and MCA, which was an important milestone in the growth of the College. The construction of New Science Block and dormitories in the hostel marked the new phase of development.

The beginning of the next decade witnessed the Day College becoming autonomous and the momentous growth of the College in its infrastructure: the N & D block, COE block, New Library, New hostel, Business Studies and Information Technology Block, all adding upto 2,66,000 Sqft. Besides these, the College has a Language Lab, Instrumentation Centre, Online access to the holdings in the Library, Internet Centre and Computer Labs. The College entered the global arena by signing an MOU with British Council for teaching Business English Certificate and First Certificate in English.

The core competency has been strengthened in many ways to suit the changing scenario. Botany was converted into Plant Biology and Plant Biotechnology, one section of History into Tourism and Travel Management, two sections of Zoology into Advanced Zoology and Biotechnology. In the self-financing stream, Economics into Business Economics, one section of English

In 2007, the department of Corporate Secretaryship and Plant Biology & Plant Bio-technology introduced the M.Phil. programs. The day and evening college together have 26 UG courses, 18 PG courses with departments offering research guidance / supervision for 12 M.Phil and 6 Ph.D programs. It has grown into a glorious edifice with a strength touching almost 7000 students in the regular and self-funded stream.

LIBRARY

The Library’s primary mission is to serve the academic community with high-quality resources, services and act as a gateway to information to meet the needs of the institution’s diverse instructional, research and outreach programmes.

(Source: http://www.ethirajcollege.in/library.html)
The Library housed in a sprawling 32,000 sq.ft. Three storeyed building provides a stunning range of library collections and information services to the teaching, research and service functions of the user community. The Library houses over 91,917 books and 52 print journals and is also sufficiently supported by over 6000 online journals (EBSCO’s ‘Academic Search Elite’ and ‘Business Source Premier’.) The research wing has the doctoral and M.Phil dissertations for ready reference.

Question banks and books for civil services examinations, bank entrance, TOEFL, GMAT, GRE, CAT, SAT, NET, SLET etc., are available. The Conference/ Seminar Hall are well equipped with gadgets like the LCD, OHP, Television, and Multimedia System.

3. **DHANRAJ BAID JAIN COLLEGE (AUTONOMOUS), CHENNAI**

In seeking to fulfill the above stressed objectives, The Dhanraj Baid Jain College, an offshoot of TEAM Trust was inaugurated by the Hon’ble Chief Minister of Tamil Nadu Thiru. M.Karunanidhi on the 30th June, 1972 at Mahalingapuram in Kodambakkam. Later the college was housed in a mammoth building with an expansive 42 acres campus in Jyothi Nagar, Okkiyam Thorappakkam, Chennai – 97. The foundation stone for the new college building was laid by the Governor of Tamil Nadu Shri.K.K.Shah on the 4th May 1974. Then the Education Minister Shri.V.R.Nedunchezian was the special invitee. Its cardinal objectives were to introduce and popularise high quality Commerce-oriented education. To look after the affairs and administration of these educational institutions, an exclusive Management Committee was constituted comprising men
of proven métier who were also known to cherish noble ideals and pursue them with heroic resolution.

(Source: http://dbjaincollege.org/)

The College is situated in a sprawling campus, some distance away from the seashore. The same place was, some three decades ago, a sleeping village, devoid of any facility. Today it is abuzz with intense activities, thanks to the pioneering effort of TEAM Trust in founding the institution in this remote part away from the Metropolis. An all-round development in and around the College has taken place, which incredibly transformed totally the landscape, in the last thirty years. The place is at present crowded by industrial houses; it has the pride of having the Tidel Park (Software corridors) and a string of business houses engaged in giving accent to Information Technology. A well laid out Highways Road links all the places and serves as arterial road.
LIBRARY

An expansive library has been constructed conforming to the present day growing needs of the students. A commodious reading room and special enclosures intended for listening and learning events of importance through audio/video electronic systems, Separate provision for Internet connectivity E-Mail transmission, Xerox Machine for Photo copying are now available. Bar coding of the books and indexing them with a press of buttons informing students about the availability or otherwise of the book for reference in the Library are facilitated. Above all a serene environment for study has been brought about in the Library, boosting the scholarly aspiration of students.

(Source:http://dbjaincollege.org/infrastructure.php)

The college library is housed in an artistically designed impressive new building. It is abound with enviable collection of both new and very rare old books. It has at present 22,000 books and annual subscriptions of 33 periodicals. This is the only library among city colleges to take recourse to open access system for the benefit of students. Books on various subjects/topics in different languages are
available. The well-deserved rolling cup for the best maintained library was awarded by Mylapore Academy to this college in the year, 1993.

4. **LOYOLA COLLEGE (AUTONOMOUS), CHENNAI**

   Father Bertram was born in Montigny les Metz, in the Lorraine province of France on 23 July 1870. He offered himself to Father Boutelant, the procurator of Madurai mission. Being a feeble boy with a very weak physique, he was a remarkably broad-minded man, the perfect type of a man of honour, a great organizer and an ideal priest. He served as the Principal of St. Joseph's College, Trichy, from 1908 to 1916, during which the college reached remarkable growth. He became a University syndicate member in the year 1916 and held the post till his death.

(Source: http://www.loyolacollege.edu/founderofcollege.html)

He founded Loyola College in Chennai on July 1925 and was the Principal of the college from then on till 1935 and also served the community as Rector from

LIBRARY

The Library having 10900 books, 200 Journals and Magazines are available in the library. In this library followed by DDC Classification scheme. OPAC and Autolib software used in this library.

(Source: http://www.loyolacollege.edu/helenkellerresearchcentre.html)

5. NEW COLLEGE (AUTONOMOUS), CHENNAI

The New College was established in 1951 and is affiliated to the University of Madras. Having completed 62 years of dedicated service to the nation, the college has earned an enviable reputation as a leading institution of higher education in Chennai. It was founded by the Muslim Educational Association of Southern India (MEASI) with the primary aim of providing higher education to the
educationally backward section in general and Muslim students in particular. However, its doors are open to deserving students irrespective of community, caste, creed or socio-economic considerations. With a humble beginning of 200 students in the intermediate course, it has grown to the current combined strength of over 5000 students in the Aided & Self-financed streams.

The Day College (Aided) offers 12 UG courses, 7 PG courses, 7 M.Phil and 6 Ph.D research programmes, while the Evening College (Self-financed) offers 8 UG and 5 PG courses spanning Arts, Commerce & Science programmes. The College has achieved several significant milestones. It was selected by UGC in 2004, - to offer Career Oriented Add-on programmes in Clinical Laboratory Technology (Certificate, Diploma & Advanced diploma courses), Computer Assembly & Servicing and Quantitative methods & Computer Applications. It was first accredited by NAAC with B++ in 2005. UGC conferred autonomous status to
the College in 2007. The Choice Based Credit System (CBCS) recommended by TANSCHE was introduced in 2008.

These have helped the college to focus on Quality and holistic education of students, carry out many academic innovations in curriculum design, conduct of examination and evaluation and groom students who are more employable with requisite life and personality skills. The College was re-accredited by NAAC in 2010 with the highest ‘A’ grade and CGPA of 3.18 on a scale of 4.00. The College is one of the most preferred educational institutions in Chennai due to its central location, excellent infrastructure, dedicated teaching staff and emphasis on “Teaching beyond the classroom and beyond the curriculum”. The curriculum includes modules on Deeniyath and Moral instructions, Computer skills, Personality enrichment, Soft skills and Environmental studies which help in the integrated/holistic development of the individual.

The College has a “remedial coaching scheme” for students who are academically weak, “students counselling programme” with a dedicated class counsellor to mentor and monitor the progress of the students and English language lab to train students in communication skills. It has an active career guidance and placement cell which has facilitated successful placement of students in many reputed concerns For etc., log on to www.thenewcollege.in
LIBRARY

(Source: http://thenewcollege.in/open-online-learning-and-certifications.php)

1.19 LEARNING RESOURCES

™ Open Online Learning & Certifications
™ Online Dictionaries
™ Open Source Journals
™ A Reservoir of Indian Theses
™ Indian Research In Progress
™ Online References
™ N - List Inflibn
6. **WOMEN’S CHRISTIAN COLLEGE (AUTONOMOUS), CHENNAI**

Women’s Christian College was founded on 7th July 1915 as a joint venture of 12 missionary societies from England and USA. In 1916 it was declared a first grade college and was shifted to its present campus on College Road in Nungambakkam located in the heart of Chennai City. It fulfills its mission to provide higher education to women of India in liberal arts and sciences. It is affiliated to the University of Madras and was given recognition as an autonomous college in 1982. At present it is a state subsidized minority institution following the Choice Based Credit System. It has grown to strength of over 3224 students and 180 members of Faculty in the aided and self-financing sections and 108 members of the non-teaching staff.

(Source: http://www.wcc.edu.in/)

The mission of this women’s college, as it was stated by the founder-Principal Dr Miss Eleanor McDougall is specific and contextual; “We can do no better service to India, than to liberate the energies of wisdom and devotion which
are latent in her women and to infuse into them the vital ideals of Christianity”. The mission was reinterpreted from time to time to suit the changing aspirations and needs of its wards and of women in general. While the mission is still couched in its original ideal of liberation of women for uninhibited total development, it is made comprehensive to include the objective of offering an education that can create generations of intellectually excellent, morally upright, spiritually inspired and professionally sound young women to illuminate their own homes and their home land. Within the first week of its start, the college motto, “Lighted to lighten” was decided; the college flower, the sunflower (flower of light) was chosen; the college crest was designed and the college song, “Alma mater” was set to the tune of Finlandia composed by Sibelius.

Almost from the beginning the college has been collaborating with similar institutions in both India and abroad. Mount Holyoke College in Massachusetts, USA, has adopted WCC as its sister college and it sends gifts of both money and books. As a gesture of gratitude the college has named one of its hostels after this patron. The annual inter-year cultural festival is also called ‘Mount Holyoke’. As many alumnae take to the teaching profession, the teaching training college, St Christopher’s Training College for Women, was started with a former member of the faculty, Miss Nora Brockway as its first Principal and it later moved into its own campus at Vepery. It may be perceived from this brief history that the institution, with its clear and specific mission, has grown through progressive phases of development to its present status of a premier women’s college in the city with the dedicated services of generations of teachers, administrators, students and workers.
7. **M.O.P. VAISHNAV COLLEGE FOR WOMEN (AUTONOMOUS), CHENNAI**

Sri Vallabhacharya Vidya Sabha, the prominent managing body of D.G Vaishnav College, in its silver jubilee year, collaborated with Dewan Bahadur M. O. Parthasarathy Iyengar Charities for the establishment of this women’s college in 1992, a dream realisation and the result of the determination and sustained efforts of the two trusts. Both these organisations have eminent industrialists, administrators and people committed to the cause of women’s education. The M.O.P Charities donated prime land worth Rs.100 crores in the heart of Chennai to the college. The infrastructure and administrative expertise is being provided by Sri Vallabhacharya Vidya Sabha.

(http://www.mop-vaishnav.ac.in/)

Since its inception in 1992, M.O.P. Vaishnav College for Women has been committed to its goals of attracting and supporting top caliber women students in the areas of higher education. The college has since then recorded a phenomenal
and continual growth. Started with just three courses – B.Com., B.B.A., B.Sc. (Maths) the college offers today 14 UG, 6 PG courses and a research programme in the Department of Commerce. The college, affiliated to the University of Madras, has strength of 3,030 students thus recording a qualitative and quantitative growth as well. The college offered itself for accreditation in its decennial year and has been reaccredited in 2009 by the NAAC (The National Assessment & Accreditation Council) with an ‘A’ grade and a 3.51 CGPA on a 4 point scale.

M.O.P. Vaishnav College for Women also has the distinction of being one of the youngest colleges in the country to have been granted autonomy by the University Grants Commission and the University of Madras.

LIBRARY

M.O.P Library strives to cater to the needs of its academic community to the best. With a humble beginning of around 600 books in the year 1992, the Library can now boast of around 28,000 books in a span of 20 years. Ever since its
inception, efforts have been put in by the management to develop the Library on the most modern lines.

The year 1997, when the former Principal Dr. Nirmala Prasad took over the leadership, the Library moved to a new spacious building. That year the number of books, which was around 4000, took a phenomenal increase and became 10,000. The Library was also given the 'Best Library Award' by the Mylapore Academy in the year 1998.

Today 'digital' is the buzzword everywhere, but at a time when all leading city colleges were following traditional method of transactions, M.O.P library was a pioneer to automate all its collections and started all transactions through computer systems with barcode scanners and search terminals.

Housed in two floors, the Library has a huge air-conditioned fully furnished reading hall with Books, Non-book material, National and International journals with reprographic facility. There is also a Digital Library unit with wi-fi enabled systems and 24 hours net connectivity. The library takes all efforts to maximize the usage of its resources through various programmes involving the students like Book weeks and by encouraging them to utilize the resources to the maximum.

8. MADHA ARTS AND SCIENCE COLLEGE, CHENNAI

Madha Arts and Science College was established by Loordhu Ammal Educational trust. After obtaining Govt. Of. TamilNadu permission (G.O.No:319 Higher Edu. (E1) Dept.Dt 12.09.05) and University Of Madras affiliation, the
college was inaugurated by the Finance Minister Hon. prof. K. Anbalagan on 17.07.06).

(http://www.madhaartsandscience.com/)

The Madha Arts and Science College was started in the year 2006 – 07. It is affiliated to University Of Madras and is approved by the Government of Tamilnadu to conduct U.G Courses such as B.Sc Biotechnology, B.Sc Microbiology, B.Sc Computer science, B.Sc Visual Communication and B.Com General. This college intends to impart quality education in the field of Arts and Science in an effective way.

This College is mainly to inculcate the state of the art of applied sciences computer sciences and media science where it basically needs in the scientific research and technological upliftment of our country.
9. MOHAMED SATHAK COLLEGE OF ARTS AND SCIENCE, CHENNAI

In 1991 with the aim of spreading Management education, the Trust approached the Government of Tamil Nadu and the University of Madras for establishing a College of Arts and Science in the city of Madras. The Government of Tamil Nadu accepted the proposal of the trust and permitted the starting of the Mohamed Sathak College of Arts and Science under Self Financing Scheme vide G.O.Ms.No.1123 dated 6.8.90.

(http://www.mscartsandscience-edu.in/)

The college has produced several University rank holders over the years, across the streams. This is because the students are exposed to high-quality training and practice by the well-qualified staff. The college infrastructure, with its hi-tech and modern labs also enables students to experience real-work environments.
LIBRARY

The library has a collection of over 15000 volumes, 25 technical journals and magazines and has a Delnet subscription.

10. ANNA ADARSH COLLEGE FOR WOMEN, CHENNAI

Anna Adarsh College for Women with strength of 3800 students is an institution of higher learning, located in Anna Nagar a tranquil, affluent, commercial and prominent hub of Chennai, the capital of Tamil Nadu. The College comprises an imposing structure set in a spacious campus dotted with lush greenery which contributes to the serene ambience. Ideally located the institution is easily accessible and well connected to the heart of the city as well as the suburbs. The members of the Punjab Association felt the need to provide women with a place of learning so that they could enjoy the benefits as well as contribute to the world without any discrimination. By founding “Anna Adarsh College for Women” they hoped to foster an insatiable thirst for knowledge, instill basic universal human values, adopt innovative teaching techniques so that learners could keep pace with the fast changing world and strive for high standards of excellence. The College offers 13 Undergraduate and 9 Post graduate Departments including 2 Research Departments and 5 UG Departments in the Evening College besides several Certificate Courses and Add-On Courses. A dedicated team of 184 faculty members are an asset to this institution. For the past twenty five years students have consistently secured top university ranks in almost all disciplines and the college has been the recipient of several awards for excellence in academics, co-curricular activities and sports. During the academic year 2008-2009, the college is proud to have produced 135 university ranks in all disciplines.
LIBRARY

The library, “brainstore” of the institution has a spacious reading room to nourish the quest for knowledge and academic ambitions and can accommodate at a time over 150 students. The library has a collection of 21,000 volumes and subscribes to 65 National journals and 5 international journals. A monthly library newsletter is published and circulated among staff and students. Online Journals and subscribed for the benefit of staff and students. The Library user Collection Accounts to 800 Students per day.

Library membership cards with photographs are issued to the students. Students are encouraged to borrow books during the working days and weekends using their membership cards. The library catalogue has been computerized to facilitate quick and easy access to books.
Library has a browsing centre to facilitate access to info available through the net. Bandwidth is 512KB. There are 6 terminals and 1 server for this purpose. A fee of Rs 50 is charged for 5 Hr of net browsing. Internet browsing cards can be held from the college office for Rs 50 on all working days from 2.00 pm to 3.00 pm.

Autolib-Integrated library automation management software. Multi User-Lan version 5.0 on windows with WEBOPAC module for providing library service on the campus intranet (sql version) with 12 modules is installed. Data entry is maintained and updated from this software.

It makes facility and services user friendly especially for the differently abled and visually challenged students. It provides audio book for the visually impaired. It also has a well-equipped audio-visual room with seating capacity of 50 students with a LCD projector and a browsing center.

11. A.A. ARTS AND SCIENCE COLLEGE (WOMEN), CHENNAI

Alpha Arts and Science College is a self-financed, co-educational institution approved by the Government of Tamilnadu and affiliated to the University of Madras. It was established in the year 1996 and upgraded as a post graduate institution in 2001. Situated in the semi-urban locale of Chennai, Porur the college, in a span of a decade, grew into student strength of more than 1000 attracting youth from across the country and abroad. The serene campus, away from the hustle and bustle of the city, provides an environment that is conducive for a multi-cultural community of students to interact and pursue their academic interests.
LIBRARY

The Library, housed in the first floor of the main block, is automated and follows the open access system. It is committed to knowledge enhancement of faculty and students through effective use of recent technology in the field, in addition to the other services offered for the purpose. The library offers an interesting collection of books, journals, periodicals and magazines, newspapers, CDs, DVDs and online resources – national and international - to facilitate reading and referencing. Library resources are updated every year through the supervision of the Library Advisory Committee. The library houses different sections under one roof for the convenience of its users. New Books are displayed for the benefit of staff and students in the Library. A specific library hour is allotted for each class in the regular time table. As part of Library Day Celebrations the library conducts a quiz on Books and Authors.
Stella Maris College, a Catholic minority institution of higher education for women was founded on August 15, 1947. Beginning in a small one-storey building in Santhome, Mylapore with 32 students, the College moved to its present campus “The Cloisters” on Cathedral Road in 1960. Today the college has an enrollment of 3,800 students from diverse backgrounds, communities and nations.
The College is an autonomous institution and is affiliated to the University of Madras. It is run by the Society of the Franciscan Missionaries of Mary, a religious congregation founded by Blessed Mary of the Passion (Helene de Chappotin) in Ootacamund, Tamil Nadu in 1877. Guided by her charism, the initiatives of the college arise from a sound philosophy of life based on faith in God and the contemporary reality of a pluralistic Indian society that is challenged by global ideologies and cultures.

The college is committed to serving the economically and socially marginalized sections of society and provides University education in a Christian atmosphere for students, especially those belonging to the Catholic community. Admission is open to all, irrespective of caste and creed, and their rights of conscience are respected. The College motto, “Truth and Charity”, has been the foundational philosophy of the quest for a value-based education. In keeping with its mission, the College promotes inclusive practices in the implementation of its
academic programmes, taking into account learning differences and the special needs of the differently-abled.

In seeking to mould women of character who will be self-reliant and work towards social transformation, the College has established an educational road map that provides a framework for quality education and stimuli for lifetime learning. A student-centric, participatory teaching-learning-evaluation system assures the students of optimal educational benefits. In encouraging multiple teaching-learning methodologies that take learning beyond the classroom, the College gives students cutting edge skills and capabilities that augment their self worth.

The College is at the forefront of higher education in India by virtue of its commitment to academic excellence through periodic revision and updating of its curriculum based on stakeholder feedback. The curriculum promotes national development, fosters global competencies and facilitates skills training to meet the challenges of a competitive workplace. It offers students flexibility and a wide range of programmes which includes both traditional Arts and Science courses and more contemporary ones, in emerging areas such as International Studies, Information Technology, Bioinformatics and Biotechnology. The infrastructure and facilities on campus have supported these efficient and effective academic transactions and placed the College on par with some of the best institutions of higher education in the country.

Running parallel with the nation’s trajectory towards selfhood and development, Stella Maris College has evolved into an Institution of repute, serving national, regional and local needs. The vision of the College is to build on
these achievements and work towards a new world order in which equity, access and justice for all will be a reality.

LIBRARY

Housed in a two storey building, the College Library is fully automated with a wide collection of the latest books, periodicals and CDs, which is expanded and updated every year. The library, which has an open access system, is committed to using technology in efficient and innovative ways. The Library functions in a networked environment, and maintains three servers and over 60 PCs to support its various operations and services. Electronic sources such as EBSCO host, NList and Questia are made available to all members of the library via the internet and the college intranet. The library also hosts Dspace, a digital repository of research. It contains published articles, conference papers, question papers, theses and other related documents, with full text wherever possible. Faculty and researchers may contribute their own publications for uploading in the Dspace. Question papers and syllabi of all the departments are available on Dspace for ready reference.

The top floor of the building houses the Postgraduate section and the research cubicles which are equipped with computers with the necessary software. The reference materials are located on the mezzanine floor, which also has four computers with headphones to view subject CDs and videos.
The mezzanine floor also houses “Stellarchives”, the college archives, which collects preserves and maintains the historical evidence of the institution’s heritage. It contains photographs, manuscripts, artifacts and ephemerals, some of which date back to the inception of the college. It also houses rare books, and books and articles authored by faculty and former students of the college.

The air-conditioned Audio-Visual room in the library is used to conduct the one year Certificate Course in Documentation and Multimedia. It is also used for orientation programmes, seminars and programmes on research methodology and training in the use of various databases.

Besides the main library, which houses the bulk of the print collection, there are two departmental libraries - the Fine Arts department library in St. Francis Block and the Commerce department library located in the Nava Nirmana building.
13. JUSTICE BASHEER AHMED SAYEED COLLEGE FOR WOMEN, CHENNAI

The Justice Basheer Ahmed Sayeed College for women (formerly "S.I.E.T Women's College") maintained by the Southern India Education Trust, founded by Late Justice Mr. Basheer Ahmed Sayeed assisted by his wife Mrs. Fathima Akhtar and other colleagues, endeavours to maintain a programme that will develop women of great integrity, high character and culture who are fully capable of making enlightened choice and intelligent judgment in a social order which is dynamic and which requires the best contribution from every man and woman.

(http://www.jbascollege.edu.in/)

From its inception the College has been rooted deeply in the spirit of the oneness of God and Universal Brotherhood of Man. Therefore, the portals of the College have been kept open for all eligible women students from all parts of the country and the world irrespective of caste, creed or religion. Cultural and spiritual unity is encouraged in the day-to-day life within the College campus.
The College maintains high standards of excellence in the academic sphere and in the physical amenities and facilities intended to implement the educational programme. The College endeavours to enroll students who hold high standards of performance, discipline and achievement.

In addition to the autonomous curriculum which is expected to provide a broad foundation of general education and a reasonable amount of specialization, a diversified programme of campus activities-social, recreational, cultural and religious-supplements and complements the academic study and provides facilities and opportunities for the development of individual talent, personal relationship and creative group life with high moral standards.

1.20 OBJECTIVES OF THE STUDY

① To identify the e-Resources and Web Resources that are made available in the Selected College Libraries in Chennai.

② To find out the Information services and Web enabled access facilities provided in the Selected College Libraries in Chennai.

③ To know the extent of development and use of Information Service in the Libraries surveyed and the access to library facilities and services prevailing in the College environments.

④ To study the information access and Web resources usage among the Library users in the Selected College Libraries in Chennai.

⑤ To know the productivity of the respondents among the selectively surveyed College Libraries in Chennai.
To find out the limitations on access to prevailing ICT facilities and Web enabled services and e-resources

1.21 CHAPTERIZATION

The Thesis Consists of Five Chapters

- **The First Chapter** provides an introduction highlighting the features of the study including the use of Information Services and Web based information services in Selected College Libraries in Chennai, objectives of the study and the definition of basic concepts.

- **The Second Chapter** provides review of literature related to this study. Literature reviews of foreign and Indian studies, drawn from journals, conference proceedings, and web based information resources in College libraries related to the methods and quantitative techniques and their applications in the context of the problem under study are included.

- **The Third Chapter** describes the methodology adopted for this study. This chapter includes research methods, facets of the questionnaire, data collection and analysis and limitations of the study.

- **The Fourth Chapter** presents the analysis and interpretation of the collected data on the use of information service and web based information services in the Selected College Libraries in Chennai.
• The fifth chapter provides the Inferences, summary of findings and the conclusion.

• The report is appended with a **Bibliography and Questionnaire** at the end.
REFERENCES


