CHAPTER 1

INTRODUCTION

Libraries are the repositories of the wisdom of ages stored in the form of recorded information for use of present and future generations. The growing importance of information and information technology has been perceived worldwide. Library professionals are charged with selecting, organising, and instructing patrons on how to locate and use the resources, and preserving information. Digital technology has made it easy and comfortable to apply this wisdom and use the collected information for further research and overall development of the society (Kavitha, 2009). Technology offers both new challenges and opportunities to readers and changes the vista of librarianship.

Information and communication technology has enormous potential, especially for developing countries and in furthering sustainable development (Annan, Kofi 1997). Libraries of all sizes and types are embracing digital collections, although most libraries will continue to offer both print and digital collections for many years to come (Tenopir, 2003). Librarians in the new millennium will be knowledge managers and information analysts (Klobas, 1997). Librarians have always operated as intermediaries between people who have knowledge and those who need to know (Sarrafzadeh, Maryam 2009).

Along with traditional ethical conflicts, library professionals in the technical library are faced with new challenges to provide equitable access to resources, to address petitions, to deselect or filter, to negotiate less-restrictive licensing policies and to maintain the anonymity of individual users within electronic transactions. With the enormous advancement in computer and related technologies in recent years, the library
manager now has an increasingly difficult task in deciding which range of technologies is to be utilised in presenting information to the users. Further, as the technologies develop and proliferate, it becomes not just a question of how best to provide access to traditional bibliographic records. Many studies have found that a lack of awareness is associated with lower use of electronic collections (Bashir, 2008). New services become available which challenge the traditional objectives and force the librarian to find new ones (Moodgal and Kokila Krishan Gopal, 2006). The various kinds of information have posed challenges before Library and Information Science professionals particularly in the field of Colleges of Engineering and Technology.

1.1 CHALLENGING AND CHANGING ROLE OF LIBRARIANS

Information professionals working on the Indian subcontinent face many challenges (Goswami and Jain, 2008). The role of information specialists is to facilitate the interactions between the potential information user community and the body of recorded information. The traditional information access and management roles played by the information professionals are expanding, particularly in the design and development of new information products and services and of tools to support information seeking and selection, the analysis and synthesis of information content on behalf of users, and information of user instruction. Knowledge management is a challenge to the information professionals and for the fields of librarianship and information science and needs to be taken seriously (http://lib.uum.edu/).

Library professionals gather electronic information and create electronic pathfinders and front-end search tools to help the users. The major change that has had an impact on the work of the library professionals is the modern computer, and hence the technical push with the growth in the amount and production of technical and other
documentation. Computers have been able to help in the processing, storage, and management of information, and their application is increasing even more dramatically at present (2nd International CALIBER, 2004). One of the major events that has had a significant effect on the functions and performance of the librarians is the evolution of semiconductor technology and the development of the microcomputer. Acquiring and providing dependable access to electronic resources require librarians to learn and apply new skills such as negotiating license agreements and understanding evolving technologies. Print publications provide a degree of permanence, but e-information, if it is not properly managed, can be highly transient. Internet services provide large, uncontrolled and unregulated collection of resources (Jan T. Orick, 2000).

The increasing cost of both print and electronic journals causes many libraries to cut subscriptions and to purchase data for a particular audience. It is the job of the librarian to choose what is to be cancelled and to decide who will suffer least from the lack of access to particular information. In the decision to cancel subscriptions, the librarian considers, among other things, the needs of the community to which the library serves and whether the information is also available within the organisation. Price and timeliness in retrieving the information are also considered. When negotiating access to a publisher, the librarians and other library professionals have to agree to certain restrictions on photocopying or distribution of electronic materials.

The challenge is for the librarian to contribute to establish realistic collection-development policies covering acquisition and provision of access to electronic resources for users now and in the future. With the increase in electronic resources, librarians and libraries are no longer just collecting and caring for print materials. The question of archiving the virtual collections is very nebulous. Library
professionals, vendors, and publishers are all relying on someone else to archive and preserve information for the future. Some publishers may provide the archived information on a CD-ROM, usually at an additional cost, but many do not. Every library should do its part to preserve information in all formats. Failure to do so will result in gaps in information for future research.

The information revolution and the pervasive thinking that everything is available on the Web have created new challenges to the traditional professional ethics. The modern trend is for the role of the librarian to move from that of a passive intermediary responsible for guiding patrons to appropriate information resources toward that of a much more proactive professional whose role includes analysing and repackaging information. For Librarians and Information Scientists, computer networks enable the accessing online of large databases (Bhaskara Rao, 1998). Librarians have faced this challenge head on by becoming masters of the Web. Library and Information Professionals are often asked to negotiate these electronic subscriptions. This requires a new set of skills and even an entirely new relationship with the publishers. Librarians create powerful Web sites such as the National Library of Medicine’s Pub-Med Database. Library professionals see the Web as an easier way to share what they know with others. Network-based services and resources offered by libraries today, include digital references, digital collections, online databases, e-journals and e-books, and enable libraries to operate anywhere, allowing patrons with Internet access to access content, services, and resources any time (Bertrot et al., 2004). Library professionals create online tutorials and instructional Web pages to help patrons perform the best searches. Library professionals work with the computer experts to create and manage Websites and Intranets for the library.
The remarkable growth of Internet has made significant revolution in all the areas of science and technology. Rather than using it as a tool for searching and retrieving information, Internet has become the king of all media, by which users can access virtual information and can build a virtual library to provide timely, quality service to the users. Library professionals of this digital era are in a position to change their role as arbitrary Information Scientists/Gatekeepers and to meet the challenges of the Internet, World Wide Web, online access and the concepts of virtual libraries.

Another biggest challenge and changing role for the library professionals is to preserve the materials of both digital and paper-based materials for the future generations to come. Preservation is the conservation of knowledge. Preserving for the sake of preserving is useless and giving access lavishly to all documents without taking into account preservation measures will, sooner or later, lead towards making the documentary heritage inaccessible for future generations (Varlamoff, 2005). Preservation highlights three facts– papers, books and digital technologies. It is too much an inseparable drive to retain the recorded knowledge from the basic urge to record knowledge. Digital preservation refers to the management of digital information over time. Unlike the preservation of paper or microfilm, the preservation of digital information demands on going attention. This constant input of effort, time and money to handle rapid technological and organisational advancement is considered a main obstacle for preserving the digital information beyond a couple of years. Popoola (2003) advocates the need to expose library professionals and archivists to conservation and restoration practices during their training.

The development of Internet has forced library professionals to take on the role of an arbitrary gatekeeper. Applying filters and abiding by policies may conflict with
our duty to provide equal access to all of our users. Monitoring and reporting the use of the Internet violates the library professionals’ duty to protect the confidentiality of our users. Frequent advancement in ICT makes the task of training staff more challenging (Mahmood, 1998).

Although technology presents the library professionals with ethical challenges, the librarian is ready for the role of information professional in the connected world. Information professionals have, out of necessity, acquired skills that can contribute to succeed in their new roles. Libraries have frequently been early adapters of new technology, and library professionals continue to be at the forefront in learning and teaching new technologies. Librarians see the Internet and electronic information as tools that are used to provide information. Technology will continue to change, and libraries and librarians will use the changing technology to provide the best access and service to their patrons.

Library professionals often lack the technical skills required to properly assist users in utilizing technology-based services, or to maintain the equipment. The need for increased training for both users and operators emerged as a dominant factor in inhibiting the use of ICT in libraries (Pact Mongolia, 2008). Librarians have to analyze, describe and organize the digital resources such as e-books and scanned images for efficient retrieval by the patrons. The librarian is responsible for managing the information resources, the infrastructure and staff to meet the information needs of the users. Library and information professionals have shown great interest in knowledge management as it is regarded to have considerable similarity to the concept of coding, storing and transmitting knowledge, as the primary focus of libraries (Townley, 2001).
A major challenge for digital libraries is complying with copyright, intellectual property rights and related issues like plagiarism (Nosheen Fatima, 2009). Despite copyright notices and efforts to educate employees about intellectual property rights, electronic publications could be easily forwarded to people outside the licensed user group. The library is responsible for maintaining the awareness of all employees about copyright issues. Library professionals are in a position to safeguard the intellectual property rights of the nation. Library professionals are forced to adapt with the fast growing technology. Tremendous changes that take place in the library services such as infrastructure, content creation, collection development and user interface, information and knowledge management strategies. Digital libraries are libraries without physical boundaries. Patrons could access the information at any place, any time, anywhere and in any format. The expectations of the users have gone up such to a high level that the librarians are trying to have continuous learning. The work of the library professionals is increasingly varied as it expands to keep up with the flow of information. Library professionals have to know the communication, creativity and critical thinking which will improve efficiency and effectiveness (Disney and Adlan, 2001).

Library professionals are in a position to enrich their knowledge with special skills of the latest Information Technology developments, to browse, access and retrieve a particular information across the global networks, and to organize and manage the information by building a virtual library by which they can provide quality digital information service to the users. Due to these changes, there are lots of challenges in the modern information technology for the library professionals in the field of automation of the library, managing electronic sources and services, Internet and networking, preservation of digital-based materials, intellectual property rights and
development of skills in modern communication technology. Hence the role of library professionals is changing in the modern environment.

1.2 EDUCATIONAL SCENARIO IN TAMIL NADU

Tamil Nadu has a history that dates back to a thousand years or more. The State’s reputation lies with the fact that one of the first three universities established by the British East India Company is located here in Chennai – the University of Madras. Having made great strides in the field of higher education, Tamil Nadu is a frontline State in India imparting quality education in the field of science and technology. Hence today Tamil Nadu is rightly called the ‘Oxford of South India’. The State Government has undertaken several schemes and programmes to overcome the problem of rural illiteracy and has provided free elementary education to the masses. The State’s literacy rate has increased significantly by over 10 per cent that is, from 62.66 per cent in 1991 to 73.47 per cent in 2001 and to 80 per cent in 2001 which is well above the national average.

Considering the scenario of Higher Education in Tamil Nadu, it has been found that the educational activities have increased manifold in the State, over the last few years. Major cities including Chennai, Coimbatore, Tiruchirappalli and Madurai have established themselves as forerunners in the field of higher education. India’s best professional educational institutions to name a few are: Indian Institute of Technology-Chennai, Madras Institute of Technology, Anna University, Christian Medical College-Vellore, Annamalai University, NIT-Trichy and so on. Tamil Nadu has performed reasonably well in terms of literacy growth during the decade 1991-2001. About 99 per cent of the population has access to primary education. Presently Tamil Nadu boasts of 40 Universities, 486 Engineering Colleges, 437 Polytechnic Colleges, 216 Management
Studies Institutes, 225 MCA Studies Institutions, 15 Architecture Colleges, 55 Medical and Para-Medical Colleges, and 1150 Arts and Science Colleges in the State.

1.3 TECHNICAL EDUCATION IN TAMIL NADU

Changes in society, culture, economy and technology have generated corresponding changes in Education. Prior to Independence the scenario of higher education in Tamil Nadu was not encouraging. Technical education in Tamil Nadu was very poor. After Independence only many colleges have come into existence. The State now has premier institutes: the four technical universities to which 486 engineering colleges are affiliated, IIT Madras, NIT Tiruchirappalli, Anna University, Madurai Kamaraj University, Coimbatore Institute of Technology, Government College of Technology, Shanmugha Arts, Science, Technology and Research Academy, PSG College of Technology, Amrita Vishwa Vidyapeetam, SRM University, Sathyabama University, Vellore, Institute of Technology in Engineering; Madras Medical College, Christian Medical College, Stanley Medical College, in Medicine; Bharathidasan Institute of Management in Management Studies; Madras Christian College, Presidency College, Loyola College in Arts and Science; Tamil Nadu Agricultural University, Coimbatore; Tamil Nadu Veterinary and Animal Sciences University

The diversification of courses in Tamil Nadu is really outstanding. Even in the medical stream, with diverse courses like Siddha, Naturopathy, Ayurveda and Yoga, Tamil Nadu colleges top the list. The courses offered by institutes are job-oriented and are futuristic. One might be surprised to know that in most of these professional courses, out of the total students enrolled in the country, approximately 20 per cent are from Tamil Nadu. Finally, Tamil Nadu is in a rapid mode of development in the field of higher education. It has only been made possible by the duty consciousness of the
administrative and teaching faculty and their contribution to research and innovative methods of teaching.

1.4 ENGINEERING EDUCATION

Engineering education, unlike other types of professional education, has not had a long history. The first engineering college was established in U.P. in 1847 for the training of civil engineers at Roorkee. The development of engineering education spread all over India. The State of Tamilnadu has also taken various initiatives in all over the State. Tamil Nadu produces the highest number of engineering graduates in India every year and attracts many software companies to set up their shop in South India. The education system of Tamil Nadu is considered one of the best in the country. It is due to the continuous efforts made by the State Government in making the education policy liberal and also by granting autonomy to various institutes of excellence.

There are certain factors that make Tamil Nadu a preferred destination for higher education. It has adequate educational institutions, efficient and committed teachers, strong education policy of the government, and infrastructural facilitates for professional education. To maintain the quality of education in the state the government has outlaid Rs 892 crore for Higher Education. The participation of central and state-run universities in the educational movement is worth noting. The universities have set guidelines for various purposes including quality, diverse academic teaching, admission and infrastructural development.
1.5 CHANGING ROLE OF ENGINEERING COLLEGE LIBRARIES IN TAMIL NADU

Applied Sciences, Engineering or Technology as designated by different terms pertain to the pragmatic and effective transformation of the results of scientific research to products and processes to improve the quality of life and for the betterment of society. Engineering college libraries are in the forefront of better technology assimilation and formulating new and path-breaking information organisation and services in the country.

In our country, the technical education system is a complex one. It is governed by the Central Government through MHRD and its bodies like AICTE and UGC. The importance of the education sector, particularly a professional discipline like engineering studies, is increasing day by day in our country. The quantitative growth of institutions in private sector smacks of attempts to commercialize and the needs to be curbed.

Education is a life-long process. Quality engineering education is the development of intellectual skills and knowledge that will equip graduates to contribute to society through productive and satisfying engineering careers as innovators, decision-makers and leaders in the global economy of the twenty-first century. Quality in education particularly, in the case of engineering educational institutions, is not expensive but it needs hard work, commitment and dedication on the part of all concerned in the institutions. Every institution has its own vision and mission statements. After the establishment of ISO standards and NBA, it was found that the institutions were not following some quality strategies in academic activities for achieving superior standards. But in the present scenario, society expects more high
skills and performance from the students and their abilities to be placed in recognizable positions while leaving the Engineering institution. Making the engineering students community skilled one, library plays a vital role in providing engineering information as well as resources for its users.

Library is part and parcel of any institution. It is the soul of any learning institution. Library is associated with every academic or technical institution, and is the pivot of the teaching-learning process. An Engineering College Library plays an important role in providing overall library and information services to the students. The new generations of students have just entered the new millennium and face a lot of challenges for keeping pace with modern development in information technology which has brought about information explosion and information revolution.

1.6 SCOPE OF THE STUDY

The present study is an attempt to highlight the problems being faced by Engineering College Library Professionals in identifying, acquiring, generating, organising and disseminating information from sources in electronic environment, and finding solution to these problems. The present study has a wide scope with the challenges of library professionals in engineering colleges in the following areas:

1. Challenges in library automation and electronic sources,
2. Challenges in computer networking and Internet,
3. Challenges in preservation of digital and traditional collections,
4. Challenges in skill development for modern library and
5. Challenges in copyright and intellectual property rights.
1.7 CHALLENGES IN LIBRARY AUTOMATION AND ELECTRONIC SOURCES

The increasing number of clientele of library and information centres and their specialised desires force us to change the method of organising information because traditional methods are inadequate. The manual method of library services has serious limitations and faces problems to provide access to reader's information. The role of computers and their associated peripheral media is being increasingly used in library and information services for acquisition, storage, manipulating, processing and repackaging, dissemination, transmission, and improving the quality of products and services of library and information centres. Library automation facilitates speedy information process.

Library automation refers to use of computers, associated peripheral media such as magnetic tapes, disks and optical media and utilisation of computer-based products and services in the performance of all types of library functions and operations. Computers are capable of introducing a great degree of automation in operations and functions since they are electronic, programmable and are capable of controlling the processes being performed. The utilisation of computer and related techniques provide the right information to the right reader at the right time in the right form, in the right personal way. Automation of library activities provides the services very efficiently, rapidly, effectively, adequately and economically.

The automation is economically feasible and technologically required in modern libraries to cope up with the requirements of new knowledge, the enormous increase in the collection of materials, problems of their acquisition, storage, processing, dissemination and transmission of information. The enormous growth or
information explosion of literature in each area results fragmentation of literature and increasing specialisation in every field of knowledge. Due to this information explosion, the quantity, variety and complexity of information is increasing rapidly in every field. Computer application is capable of storing huge bulk of information in tiny storage medium.

Library automation is an expensive, complex and continuous process involving various constraints in its implementation. The computerization and networking of college libraries in southern districts of Tamil Nadu is very slow. There are so many factors responsible for it. The following are some major factors hindering proper library automation: inadequate financial resources, lack of proper guidelines and planning for automation of library activities, lack of well-accepted and less-expensive standard software packages, non-availability of IT-trained personal, inadequate management support, late implementation of library automation activities non-availability of consultancy services, cumbersome purchase procedure for the acquisition of hardware and software, non-availability and under-utilisation of Campus LAN, erratic power supply, non-availability of heavy-duty UPS and generators in many libraries, resistance of library staff, absence of librarian in many libraries and lack of adequate qualified professional staff. Hence library automation becomes a challenge for the library professionals.

1.8 CHALLENGES IN COMPUTER NETWORKING AND INTERNET

Network is a generic term. Several computers connected together are called a computer network. A network is a system of computers and related equipment connected by communication links to share data. A computer network is the linking together of CPUs and terminals via a communication system. A network allows users at
different locations to share files, devices and programs. Many terminals may share the resources of one CPU or multiple CPUs may be linked together. Terminals and CPUs may be geographically dispersed or situated within the physical constraints of a single office or building. A computer network means an interconnected collection of autonomous computers. Two computers are said to be interconnected if they are able to exchange information. With a network, users must log onto one machine, submit jobs remotely, move files around explicitly. It is nothing but an interconnection of computer systems and/or peripheral devices with carriers and data communication devices for the purpose of exchanging data and information.

Internet is both an opportunity and a challenge for librarians. It is a wealth of information resources of the world. Librarians need to be proactive and must exploit the full potential of Internet to enrich their resources and improve services to satisfy the changing needs of users in the context of shrinking library budgets and escalating document prices. Librarians using their information management skills need to devise new techniques/solutions not only to manage huge quantities of information but also to face the future challenges of Internet. Otherwise, librarians’ work would certainly be taken over by others. Libraries have a vital role to play in making maximum use of Internet resources and services for the benefit of users efficiently and effectively. With competition from the World Wide Web, there is a sheer need for the librarians to provide a ‘face-lift’ to their current outlook and services.

1.9 CHALLENGES IN PRESERVATION OF DIGITAL AND TRADITIONAL COLLECTIONS

Preservation is the oldest and most fundamental function of libraries and archives. The goal is the preservation of the object or its surrogate. A new difficulty for librarians emerged with modern non-print media, which has a life-span shorter than a
human career. Unlike the print collection that passes from one custodian to another, the electronic media require extraordinary preservation measures. Despite the concerns about new media, most of the professional activities have been aimed at the main book collections, in original or surrogate form. The greatest challenge, in practical terms, is to define preservation in clear and commonly-agreed-upon language. The component parts of preservation can be grouped into three broad areas: techniques to be used for individual items or whole collections, institutional policy and education of professionals and library users.

Preservation needs of a library have to be considered in line with the social and political climate in which the organisation operates. The organisation’s purpose, collecting policies, and available resources also have to be taken into account. The acquisition and collecting sections of a library should be prepared to purchase additional copies of heavily used material, like reference works, when the cost of repairing such items is greater than replacing them. It is also necessary to calculate whether surrogate copies are a more economical and effective way of providing access to heavily used material than 'hard' copy.

Another challenge is the issue of long-term access to data. Digital technology is developing quickly and retrieval and playback technologies can become obsolete in a matter of years. When faster, more capable and less expensive storage and processing devices are developed, older versions may be quickly replaced. When a software or decoding technology is abandoned, or a hardware device is no longer in production, records created with such technologies are at great risk of loss, simply because they are no longer accessible. This process is known as digital obsolescence. This challenge is exacerbated by a lack of established standards, protocols and proven methods for
preserving digital information. If libraries are able to build or acquire some types of
digital collections, there remains a significant challenge in preserving these collections.
Pre-digital libraries have had to worry about climate control and the de-acidification of
books, but the preservation of digital information will make these time-consuming and
costly problems look easy. Digital storage media are "fragile", with a limited shelf life.
Worse yet, the digital information on those storage media, even if they do survive,
will be rendered unreadable by obsolescence of technology due to the fact that, as
information technology evolves, older systems disappear taking with them the ability to
read the information they managed.

To preserve digital information, digital libraries will continually have to migrate
information from one digital hardware and software configuration to another. Even
libraries which do not normally have a significant preservation concern will find that
digital collections will require "refreshing" and migration to new systems to maintain
their accessibility. Technological obsolescence, migration of digital information, legal
and organisational issues all test the "limits of digital technology." There are no
preservation standards for digital information. Hence the digital preservation becomes
a challenge to library professionals.

1.10 CHALLENGES IN SKILL DEVELOPMENT

The Library professionals need to be able to communicate in non-technical
terms, with a wide variety of people, including vendors, library staff members, library
managers, and library decision-makers. The library professionals want to be
comfortable, dealing with the jargon-rich terminology of the computer hardware and
software industries.
There are times in the life of a systems manager that would try the patience of a saint. Even after following all the appropriate directions, checking and double-checking the cabling equipment, and software, something continues to be "not quite right," and so an application doesn't work, a computer workstation could not be connected to the LAN well.

The system manager will know the value of being organised. This individual will ensure that the library management team participates in setting priorities for the communications infrastructure and the LIS. Having a clearly defined set of priorities means that the systems office staff is able to proactively handle the inevitable problems and challenges that will arise. Without the proactive approach, staff will simply be in a reactive mode, often rushing to solve the problem for the person who is the loudest "squeaky wheel" (Scott P. Muir, 2001). While establishing the priorities, the library management team should consider: financial benefits, business objectives, intangible benefits, and technical importance.

Given the broad range of responsibilities, library professionals need to remain flexible about a wide variety of things including schedules, changing priorities, and being able to keep multiple balls in the air. A good system manager recognizes that things only get accomplished through the collective efforts of many different organisations and individuals. Yet, maintaining an appropriate sense of firmness will ensure that people recognize that there are limits and boundaries that must be adhered to.

The library professionals must be aware of desktop operating environments, server operating systems, software programming fundamentals, database design, system design, and troubleshooting skills. Every library professionals will often need to
learn about a specific database management system to help a vendor expand tables, restore corrupted tables, and produce ad hoc custom reports using a report generation tool. Library professionals should understand network design, network services, protocols, network applications, network management, and Internet technologies. Some portion of a system manager's time will be spent on issues such as validating and authenticating users so that they can access a wide range of information resources.

The library professionals must have basic management skills, be able to manage resources and technology, deal with security, and assess risk. The library professionals will ensure that the library's database is backed up on a regular basis and that the backups are tested. Most important, library professionals must ensure that they have the necessary skills to maintain and nurture the relationships that will inevitably exist with outside partners.

1.11 CHALLENGES IN COPYRIGHT AND INTELLECTUAL PROPERTY RIGHTS

Man is the only creator on earth who is endowed with a creative and inventive mind. His power of imagination and creativity has led him to invent new things and make his life more comfortable and luxurious. In this present period any new thing man creates through the application of his mind is held to be his property. Such property is termed as intellectual property. Intellectual property law regulates the creation, use and exploitation of mental or creative labour. Intellectual property law is that area of law which concerns legal rights associated with creative efforts or commercial reputation or goodwill (David Bain Bridge, 2003).

The law relating to Intellectual property in India is undergoing changes so as to bring it to harmonize with the corresponding laws in the developing countries. This has
become necessary after India signing the GATT and TRIPS and becoming a member of WTO. In the beginning, intellectual property was of little importance, but after the industrial revolution the awareness increased, gaining importance and the necessity for its protection was felt. Initially a number of intellectual property rights were known collectively as 'industrial property', which includes patent, trademarks and designs. But later under the leadership of WIPO (World Intellectual Property Organisation) copyright and many other rights were brought under one umbrella and industrial property was renamed as 'intellectual property'.

Intellectual property is in the nature of intangible (incorporeal) property, which means a property which has no physical appearance but exists only in the eye of law, such as patents, copyrights and trademarks. Intellectual property is a result of human creativity, involving mental and creative labour. Its subject matter is formed by new ideas generated by man and their application to human needs and desires resulting in benefits to mankind.

1.12 NEED AND SIGNIFICANCE OF THE STUDY

Engineering Institutions have become social pride in the educational sector due to the ample employment opportunity in engineering field. The need to satisfy the regulatory bodies such as AICTE and affiliated Universities and to win over tough competition among the institutions, the Managements of Engineering Institutions have invested in library facilities on par with other facilities. However, lack of expertise in library science and technology and lack of vision for future development have resulted in poor planning, execution and maintenance of library facilities.

In recent years India has produced highly skilled human resources in the scientific, industrial and technological fields, particularly in information technology,
biotechnology, space, nuclear and missile technology. India today has emerged as a
global power. Rapid changes in the field of engineering technology lead to the demand
of more number of engineering professionals. Many engineering colleges are started
with the approval of All India Council for Technical Education (AICTE) in different
states in India including the State of Tamil Nadu. All the Engineering Colleges have
libraries and provide required information resources and services.

Engineering College libraries are faced with the problem of quickly providing
their users with materials they demand. The ever-increasing volume of recorded
information pouring from ever-increasing sources means that, as the years go on,
libraries will be obtaining smaller and smaller percentage of the total output unless they
take drastic measures. As the 21st century advances, academic librarians face renewed
challenges in their role of providing traditional information services in a rapidly
changing world. The challenges of academic librarians go further than managing the
changes in technology. A great challenge is created by the shift in focus of the library
professional’s role as information provider. It is a challenge to thrive in the current
academic reference environment due to limited budgets, demands for accountability,
constantly changing technologies and pressures to provide information faster, better,
anywhere and anytime.

Library professionals in Engineering Colleges with a strong technological
background will be essential for creating modern library collections and services.
Electronic books, full-text article databases, chat-based interactive technologies, video
conferencing, voice-over IP applications, and streaming media have already impacted
the services and roles of library professionals. Understanding these varied technologies,
including imaging technologies, web mark-up languages, metadata, user interface
design, Internet searching and multimedia will be essential. As this paradigm shift occurs, library professionals will be involved in developing seamless interfaces, help systems, delivering information to a variety of computing and other personnel outside the library. Striving to meet the rapidly changing needs of society and higher education, library professionals must redefine their roles and emphasize new functions and services.

Virtual reference in all types of libraries creates a whole new type of library user: the faceless patron. With libraries making their way into this virtual environment, library professionals are forced to wear more hats: data miner, researcher, Internet and computer expert, multimedia specialist and Web Master. Librarians must have to undergo constant training as new tools emerge. For many librarians, technological innovation is both stimulating and tiring (Crosby, 2000).

With the ascent of digital documents and digital libraries, library and information professionals’ role has expanded and challenges have increased manifold. These challenges relate to collection management, knowledge organisation, digital preservation, online searching, content management, knowledge management, and promoting the use of libraries and networks. Library Professionals are required to work as leaders, managers, and facilitators. The ICT and the Internet have thrown open the doors to the LIPs to many opportunities. Now 24x7 access to information is available round the clock and the traditional constraints of space and time stand collapsed. LIPs have the opportunity to provide global reach to the indigenous knowledge.

Similarly, users can get access to world’s knowledge and information through the Internet provided they have the will, skill, and the appropriate attitude. These opportunities and challenges can be handled effectively by competent library
personnel. The engineering libraries of today are dynamic and challenging environment that offer many opportunities to new librarians. Hence library professionals need to take the daily challenges of bringing exemplary service and resources to a diverse student community.

1.13 STATEMENT OF THE PROBLEM

Library professionals are forced to adapt with the fast growing technology. Tremendous changes have taken place in the library services such as infrastructure, content creation, collection development, user interface, information and knowledge management strategies. The expectations of the users have gone up to a high level and the library professionals have to equip themselves with continuous learning. The work of librarians is increasingly varied as it expands to keep up with the flow of information. Library professionals work with the computer experts to create and manage web sites and intranets for the library. Library professionals have to analyze, describe and organize the digital resources such as e-books, scanned images etc for efficient retrieval by the patrons. Library professionals are responsible for managing the information resources, infrastructure and staff to meet the information needs of the users.

The library and information professionals have often to be network specialists. This includes not only the physical networking technology to connect computers, workstations and peripherals with the central institutional computer, with CD-ROM and other physical information servers at the institutional level but also the integration of varied computer technology within an institutional network. It also includes the networking technology of the Internet Protocol (TCP-IP) and various other aspects of virtual connections with the world wide network of information sources. In smaller
institutions, the librarian may be required to set up or maintain the web server, produce HTML-pages both for the library and the institution itself, and set up Internet services like training sessions, trouble-shooting, and specialised information services like RSS and blogs. A close interaction with organisational network administrators will help to enhance the knowledge and ensure sustained information services to the users.

Information resources from the Internet influence the content of the library's collection policy and require inclusion of electronic journals, current awareness services, document delivery and even ephemeral information resources from the Internet. Librarians and information professionals will have to be familiar with key Internet resources and even provide their own content. Identification, verification, acquisition, organisation and dissemination are the traditional services provided by librarians since the emergence of library services. In the last few years library professionals have again had to expand their area of expertise to include digital information, including areas of the World Wide Web. The library professionals will be the ideal persons to manage the knowledge of the support organisation. The professionals could be the knowledge managers who can take the complete responsibility for training content, delivery model and so on. Being the Knowledge Manager means creating value to the firm by facilitating access to high quality information and by networking people and their ideas together using the technological infrastructure. The emphasis will shift from technical skills in the library to communication, facilitation, training and management skills.

The transformation from librarian to knowledge manager is clearly underway; however, a deeper look at the direction the Internet is taking in research reveals the possibility of more far-reaching changes. As many business processes move to the
Internet, the use of information will become integrated with the systems and services. In this environment, information as a distinct function or resource may no longer exist. To adjust to these more far-reaching changes, information professionals must search beyond current bounds such as librarian, information, and knowledge management and think in terms of benefits to their organisations. Right now, information can be used to enhance competitiveness and productivity. If information is to be seamlessly integrated with transaction processes, then someone must scope out work-related behaviour to ensure that it is done in the most efficient and effective manner. Clearly the impending shift to knowledge management (and beyond) represents an exciting change for library and information professionals. However, it is an opportunity that requires a great deal of preparation, and a new way of thinking.

In essence, an overall intensification of specialisation in the technological aspects of library and information services, as well as stronger subject-oriented competencies and evaluative abilities, is being demanded from the information professionals and should be taken into consideration both in the training and education of professionals and in in-service continuing education to meet the changing technological demands of the organisation. The emergence of new technology leads the Library professionals to face the new challenges in the area of library automation and electronic sources, networking and Internet, preservation of digital collections, professional skill development and intellectual property rights in the copyright regime especially in the engineering college libraries. Hence the researcher selected “Challenges for Library Professionals of Engineering Colleges in Southern Districts of Tamil Nadu” as the title of the study.
1.14 OPERATIONAL DEFINITIONS

1.14.1 Challenges

Challenge is defined as a call to confront the problem rising. Test of one's abilities or resources is a demanding but stimulating undertaking: a career that offers a challenge.

1.14.2 Library Professionals

Library professional refer to a library staff performing work of a professional grade who requires training and skill in the theoretical or scientific parts of library work as distinct from its merely mechanical parts. Here the term is applicable to all the professional staff including librarian, deputy or assistant librarians, professional assistants and library assistants of the library.

1.14.3 Engineering Colleges

Engineering colleges refer to institutes which offer engineering courses at undergraduate, graduate, and doctoral level. Either these institutes are part of a university or are affiliated to some university. The duration of the undergraduate course is four to five years depending upon the university to which the college is affiliated.

1.14.4 Southern Districts

Southern districts refer to the districts which are located extremely in the southern parts of Tamil Nadu in the southern tip of India.

1.14.5 Tamil Nadu

Tamil Nadu is one of the 28 states of India. Its capital and largest city is Chennai. Tamil Nadu lies in the southernmost part of the Indian Peninsula and is bordered by the union territory of Puducherry and the states of Kerala, Karnataka, and
Andhra Pradesh. It is bound by the Eastern Ghats in the north, the Nilgiri, the Anamalai Hills, and Palakkad on the west, by the Bay of Bengal in the east, the Gulf of Mannar, and the Palk Strait in the south east, and by the Indian Ocean in the south. Tamil Nadu is the eleventh largest state in India by area and seventh most populous state.

1.15 CHAPTERISATION

The thesis is divided into six chapters.

Chapter 1 deals with the introduction part of the study. This introductory part deals with the changing and challenging library environment, challenges of library professionals in library automation and electronic sources, Networking and Internet, preservation of both paper and digital collections, intellectual property rights issues, and skills for modern IT. It also includes the need for the present study, its scope and statement of the problem, and chapterisation of the entire study.

Chapter 2 explains the study area and profile of engineering studies in Tamil Nadu and the Profile of the Engineering College Libraries in the study area.

Chapter 3 presents the review of the related literature which is divided into five parts: Challenges in library automation and electronic sources, challenges in networking and Internet, challenges in the preservation of materials, challenges in skill development and challenges in intellectual property rights.

Chapter 4 describes the research design of the study. It discusses the research method, statistical tools, bibliographical tools and methods of data collection.

Chapter 5 concentrates on the analysis and interpretations of data which are collected from the respondents.

Chapter 6 focuses on the summary of findings, conclusion, suggestions and recommendations for further research.
REFERENCES


