CHAPTER I

Introduction

Information collection and dissemination are two important factors responsible for socio economic development of the society. The post globalization era demands that there should compulsorily be a full fledge support of libraries for teachers in teaching, actively support research endeavors and similar academic activities in educational institutions. A revolution has come with the discovery of computer as gadget, due to which the very natures of libraries have immensely changed. This has resulted in change in the library set up of all educational institutions in and around it. There is also change in approach of services, technologies adopted etc. due to the advancements. Automation of highest level have impacted libraries in such a way that, the very culture of processing, storing, retrieving and dissemination of information is altered.

This resulted in redefining the concept of libraries where we can find a place to access the books where they are stored and the advancement led to use of internet CD Rom making it convenient to access information of wide range stored in different places in different forms. This in itself transformed the traditional libraries into digital institutions. In great olden days libraries were judged from the point of view of the quantity they have and this became the strength of the libraries and today in contrast it is more of a networked data
connected from all over the world through internet based data services. All resources which are relevant and related to the profession are growing at a very phenomenal rate.

Information Communication Technology (ICT) have greatly increased the capabilities of library services opening new areas and avenues of networking for storing vast amount of data in electronic form. However there is enormous pressure on the library resources for its use in providing more advanced services then others in the market, this includes more sophisticated library housekeeping system and its need to provide greater bibliographic access through services. The advancement has brought new challenges up keeping the systems upgraded all the time not only this is the problem of obsolescence and compatibility of the hardware and even software can be a costly affair because it requires continuous training. Training need is not limited to the library staff but also its end users. The Modern library system which started in late 70’s is now applicable or rather a need to all the academic libraries wherever they exist.

Automation has brought sweeping change in the working of library and its staff, the time taken for doing the work is nowadays reduced considerably not only this the repetitive work is also virtually reduced and because of this the traditional act like acquisition, cataloging, circulation, referencing service and control have become one time and systematic.
IMPACT OF INFORMATION TECHNOLOGY (IT) ON COLLEGE LIBRARIES

The evolution of library system and its form in the 20th century had its own challenges and when the technology revolution took place with the advantages it brought some of the challenges of this new invention. The very change was conceptual and a library which was virtual and physically noticeable changed its character and became digital, with the provision of CD Rom and other electronic resources like internet which is essential for the digital library. The new media has also changed the financial needs as in some cases it extended like anything and in some cases was reduced considerably. The role of librarian from a section head, changed to becoming a facilitator and ultimately a contributor in shaping the destiny of students availing the facility of that particular library. It is imperative these days that the library should make available necessary information required by its end user in order to make it meaningful.

The step towards automation is the need and a way to achieve the objective of sharing the resources they have with all those connected to them and have the quest for knowledge. A stage have certainly come when the users are not ready to want and they want the information required instantly without any delay weather the information is available within the library or outside the library, in this context the engineering colleges libraries and the professional
institution libraries are way ahead than their counterparts who are traditional libraries.

In this connection it is necessary to understand that college’s libraries are a connecting link between teachings and learning activity, this is a place where you can supplement the user with that information which they have not been able to obtain from the class. The influence of modern libraries is phenomenal on the traditional libraries and that is the reason why these days the libraries are shifting from the collection mode i.e. collecting books to the access mode by providing them access to different areas where knowledge is readily available as per their requirement. It has also been seen that many card catalogue have been changed and instead these days they have started using OPAC (Online Public Access Catalogue) system whenever you want. This can be said to be a transition period switching from the manual system to electronic system which is less libraries and user friendly and have been helpful to users whenever they need. The advances in information communication technology has the power to satisfy the users with whatever they require whenever they require the quantitative and qualitative information in-store anywhere.

The storage system has also changed while it has reduced the need of physical space to only electronic space which can store huge data in a small compact disc. The storage problem is further solved with the help of internet where you can only access and store the information which is essential or
necessary because if you have extra information that can be stored in devices, which are smaller in space and also user friendly. Recently internet have emerged as a powerful medium through which you can communicate obtain information and also publish the information whenever you find it necessary.

Traditional college libraries have to transform and now you can find E-books available for access in libraries instead of volumes physically stored in college libraries. This digital form of books make the user more comfortable by giving him free hand to access more books on one them, rather limited to one book that too for a short period of time.

In the age of digitization you can see that prices of Journal especially those journals which have information on latest research are rising day by day and there is increasing trend and a time has come for most college libraries when they cannot afford to renew their subscription for being too expensive and unaffordable for such institutions or college libraries shared subscription is the way out where they can share and adopt the consortia based subscription for those expensive journal which are now out of the reach of such institutions. This method makes this material available which is expensive at a very low cost. Digitization in a the Engineering college through INDEST which is consortium set up by Govt. of India, Ministry of HRD for the easy available of resources in engineering and a very useful affordable effort through UGC’s INFLIBNET provides an opportunity to students, teachers and researchers to access the
information technology required as per their curriculum and refer those material used worldwide related to subject. The application of New Information Technology usage not only made the task easy but it is provided avenues for more and more professionals as regards training knowledge sharing, services providing due to electronic use of information. The electronic libraries have been redesigned as Digital Libraries providing access to large depositories of text material, Images which are readily used, maps used for reference frequently and different sounds for scientific usage.

**LIBRARY NETWORKING IN INDIA**

The post globalization era brought men, money material and technology in India and so also the change in libraries in India where the collections became more visible accessible and usable. This change was due to technology and which required a large network as its base. The carrying of information, transmission and retrieval of information are much different compound with traditional methods. Hence the expectations from the libraries of the users have also changed, users demand for quick and timely provision of information have put up a different kind of challenge in front of the traditional libraries where with the structural changes they are expected to provide a network which will give user more access to information of highest quality. In other words end users of that particular library require at least a set of information in that
particular domain so that the classified information is up to their expectation and fulfill their academic needs.

Basically if you see there are two types of network services which are provided by the libraries one is local and the other one is remote. Here in local network the users can easily access the digital resources stored in the local computers and servers through a network platform. Here it is also noticeable that while providing support of network, libraries can also lead or provide workstation like transaction processing system such as library management system. Through LMs users can easily find out locate required books and material through online catalogue.

**CURRENT TRENDS IN DIGITAL LIBRARIES**

New economic policy initiatives in the 1990’s and the all round growth of economy thereafter have opened new horizons for each individual as per his or her expectations. Academics is not what it was few decades back and knowledge flow is one of the reason getting this modern and scientific education fast and accurate. The changed scenario was equally applicable to libraries as it was in academics. Digital libraries became the talk of the town and knowledge flowed with greater speed from the way it used to flow two decades back. Digital library federation have also acted fast and accepted the changes in the structure and expectations with open heart.
Digital Library are considered to be organization which are providing to the users a special kind of staff competent to handle the e-resources, this competent staff select and also offer intellectual access to the user with proper interpretation and also preserve the integrity of providing information from digital sources in time. It was found that Digital Libraries involves 3 key components:-

1. Human Resources
2. Knowledge Information Resources
3. Technology for use.

If the above components are organized by the libraries then they can satisfy end user by providing human resources which is trained in all respect capable of helping users to access the information required in time. Secondly it is imperative that information resources if it is wide then the validity and reach of libraries will automatically increase and finally those libraries which will provide the state of art technology for management of libraries they will survive and will get response. In this connection professional college tend to be in forefront with the provision of technological gadgets in their libraries.

Explosion of knowledge & flow of information are equally responsible for the changes in the library maintenance and upkeep and conferences seminars and symposia are the way to educate and inform. It is noticeable that in 2005 itself there were three important noticeable conferences of the

The research conferences were no doubt successful in their approach as far as research and development world over is concerned but in addition it was able to focus on wide variety of areas where digital libraries can play an important role and not only this they can prove to be detrimental in further research and discoveries. These can be summarized as areas:-

a) Digitization and collection of data
b) Trends for tools and technologies in architecture
c) Metadata
d) Interoperability
e) Maintenance of Standards
f) System for organizing knowledge
g) Users accession of information
h) Economic, Legal, Social & Organizational issues.

Hence, this provided a cue to move forward in a systematic manner, similarly providing an insight in the field of architecture with new information on environment data which can be fashioned and can be useful in their future endeavors of planning & execution forward and backward integrations, The visual backup which is the most important support for
innovative planning in architecture and a way to innovate with technicalities, This also can be very useful if the visuals support and they are stored for further changes such as 2D and 3D interfaces.

**INFORMATION ASSIMILATION IN DIGITAL FORM**

This refers to the information stored in electronic form. There are several ways in which the information can be stored in digital format. CD Rom’s are a popular way similarly the portals which are specially designed and maintained for the reason that the information stored will be of classified manner and also in the standard format, which can be easily accessed by the user for his or her use. Another way is correction of material available in printed form is nowadays converted into digital form through use of latest technology.

**MEANING OF DIGITAL LIBRARY**

The General understanding about digital library is that it is a place where the electronic resources which are collected are stored safely and made available for day to day use to the end user. All the resources stored in systematic manner tend to be the collection of information subject, stream, general specialized and all aspects related valuable to human beings in future is stored for reference. The digital library have both the advantages to the user who wants to access the stored information in different areas and formats and also to those who intent to access the information online going
to a particular source or domain in order to obtain information. Digital Library when compared to the portal or website it can be seen and found out that it works to facilitate or intending to obtain information from the portal where only specialize or classified information is available and it can be seen here that the information available is for that particular portal which belongs to particular organization or college or institution or NGO or any other organization whose information is only there and nothing else, Similarly websites also are specialized platform were the information stored belong to that organization or institution which has created it for dissemination of information for the people at large. Digital library is more than a website, portal or search engine acting as a facilitator for the end user to access information stored in digital form.

The advantages accrued for digital library are numerous as compared to conventional libraries. All aspect like space, infrastructure manpower and quality of material information stored differs in the Digital and conventional libraries. The major difference only the appearance where in the electronic form require minimum of physical infra as compared to a beautiful infra covering conventional form of libraries. It is a common notion and a fact that has been accepted by the Association for Research Libraries (ARC) that the modern digital libraries can be more affordable as it can also indirectly get connected to smaller digital libraries which can share its information and can
create a chain for network of links in between digital libraries of same nature, configuration or subject which will be an added advantage for both the libraries and also the end users. This in itself can revolutionize the information access in the coming age which is also said be the era of knowledge explosion.

INDIA & DIGITAL LIBRARIES

It is also the naked truth that India is facing a big challenge as to upkeep of digital libraries and that India may suffer a great deal due to the paucity of factors where we:

a) Lack the concerned or relevant content on a particular subject or theme:

b) There is also the problem of connectivity in urban areas and the grave situation in the semi-urban and remote areas of India which if they want also will not be able to have access to digital libraries.

c) There is also a severe lack of maintaining the metadata capabilities in India. Take for example states in India where you will find that in Karnantaka 70% students in primary schools live in rural areas and when they are in rural schools actually they lack the facilities like their counterpart in urban areas of Karanatka State right from books to libraries and E connectivity, here both the stakeholder teachers and students are unable to access information and this has proved to be a barrier in their academic pursuit.
Digital Libraries are an indirect answer to the lacunas or shortcomings due to physical infrastructure in rural India. Digitization of schools especially in rural areas and other organizations in other areas will be the backbone of future India.

It is notable that INFLIBINET a consortium of resources provided by UGC under MHRD Ministry will be playing on instrumental role in providing resources to higher education institution all over India. Institute of science in India situated in Bangalore is providing a useful insight to the activities of higher education initiative through INFLIBINET and similarly SOUL software based on database management language is going a long way in serving the libraries and making them standardized, Similarly in India National Informatics Centre (NIC) have also contributed to the library development as they are considered to be the nerve centers of any academic institution in pursuit of this developed a Del-sis software where Del-Net have prioritize access to contents in Indian languages and in Urdu using this software.

DIGITAL RIGHT MANAGEMENT

There is great degree of vulnerability in accessing the material or internet especially where there is public access, and today the issuances such as intellectual property rights over the information in Digital form is a serious concern. The system of Digital Rights Management manages all the
issues related to intellectual property material ownership. It sees that there should not be any infringement as far as IPR is concerned. Although many ways and methods are available these days to cater to the needs of Digital Rights of intellectual information it is up to the user and management regulating the system, what to adopt that can be done in several ways like.

1. If necessary info is IPR then a fee can be charged

2. Sometimes Digital Libraries can play role of facilitator, Middle Man so that a suitable amount is paid before accessing the information required.

 Several examples such as: Online catalogue, Springer–veslag list of publication etc. this can be at local and international level also.

3. Holding the authentication unless you pay the IPR sites or Information

4. Releasing the IPR material in stages whenever it is required as per the policy of IPR holder and its agreement to release after mutual agreement.

5. Another way to protect IPR material is by putting up Logo / watermarks to protect ownership of material and then take decision as per mutual agreements.

PROGRESS IN INDIA & DEVELOPMENT OF ICT

Economic Development in India is going constantly @ 5 to 5.5%. The acceleration of economy especially in the post globalization era is responsible for reducing the poverty and not only this it is a fact that growth has taken place internally at national level and similarly at international level
also. This phenomenal growth in Indian economy opened many avenues for business for Indians in India and abroad. The opportunities started flowing inside and outside India. Software exports are not an exception. Information technology is considered as the technology of future and it is here to stay for the long time. Indian Information Technology market was initially dominated by the west & US and it is now that Asian and Indians have made strides in the field of IT and that too covering both the Hardware and software industry. IT applications, software and consulting all have been mastered by Indian in India & Abroad as well. The Indian IT sector progressed by leaps and bound and this is evident from the fact that the skilled labor or professional required is available, the telecommunication network required is present in India, the improving policy and regulatory environment is very well available and has enabled both the indigenous and foreign firms are rapidly expanding in the competitive IT sector which includes in it I.T. services sector. It. is the large coverage necessary for the domestic market depending upon imports like components/ parts and most of I.T. finished goods. ICT have placed India at the global map and this certainly is an achievement for any country to have taken strides for development and each one way by only exporting and making country strong in this particular segment.
ICT have been instrumental in catering or rather helping in governance in a better way with a great degree of efficiency another way ICT have brought laurels to India is by changing the image of India abroad as an country with global outreach in ICT and IT enabled series, being expert in one does not make it compact in other but in fact the Indian IT sector is categories by ITES, BPO, Enables series & Hardware segments. Economic policy changes under the framework of WTO have played an important role in taking the Indian economy up after the economic liberalization which took place in the whole world getting transformed from GATT to WTO coming into existence from 1.1.1995.

Growth in exports or merchandise and IT related activities or services have contributed to the increase of export in GDP of India. The resultant factor effect can be seen when India is able to absorb lakhs of IT professional passing out are getting absorbed in the open market indirectly increasing the employment ratio of India.

**AVAILABILITY OF INFORMATION CONTENT IN INDIA**

The Basic objective of libraries is collection and provision of knowledge dissemination and further development have brought about the duty to go for digitization of existing print information and media material. Number of organizations in India have started the process of digitization of the archival material available in order to make it a source available for
years to come in a compact and definite manner. These indulge books which are rare newspaper clipping of the historic events taking place around the world or at national and local level can be of importance in future needs to be preserved. At present scanners are used for first scan the document and then appropriately place it in the order required to be placed, once this is done the classification of document necessary will automatically lead to making it a source or resource ready for viewing on internet. Sometimes in some cases archival material is also stored on offline formats such as CD Rom’s so that you need not wait for the connectivity and the material is readily available.

If you evaluate the above system we can well come to a conclusion that originally it was intended to preserve the IPR material from being accessed without any payment and that the information valuable should be protected from being plagiarized or used or misused without permission. In this connection IISC has taken up a project of full complement and also trying to find out the obstacles for both the service provider and the end user in order to provide a wider coverage for those engaged in research and development so that their publication level will rise and also they will be able to go for innovative thinking and progressing in research.

This effort is now bearing fruits as this has led to consolidation of research thesis and dissertation with the digital library of India. Although
this is done to target the students engaged in research but it has automatically
led to gain the institutional resources when compiled in the digitized form
for future reference.

DIGITAL LIBRARIES & INTERNET CONNECTIVITY

Internet is a resource and if it is made available you can have access to
lot of information with good content without any further payment. This
resource in India has become a challenge because there is a practical
bottleneck for processing connectivity India. The networked structure in
India is very weak and this is an obstacle to internet and further access to
information. The obstacles is due to limited band width and slower speed of
internet further making it difficult like dialup is a basic facility and can be
used for browsing and sending emails only and if it is used for a longtime it
may end up in bills which are more expanded and unwanted for.

In India Indira Gandhi center for Arts Digital Library undertake and
patronize the multimedia formats of audio and video files of archeological &
Cultural significance. There are several ways to increase connectivity and
availability like ISDN and digital subscriber lines (DSL) but then these are
very expensive and incur heavy expenditure and hence may not be suitable
for rural areas. In contrast it is only those technology which have the
bandwidth and low maintenance cost will be more affordable as it has the
power of connectivity in that particular area. In this connection WLL
systems are affordable to the users through wireless access ultimately getting connected to broadband backbone. The introduction of WLL has opened a new chapter as it is applicable in both voice and data transmission simultaneously giving advantage to the end user. VSAT also have been able to make a mark. The cost of very small aperture terminals in recent years have reduced considerably the only point is that the establishment or initial cost is more and which may reduce over a period of time with internet getting more popular day by day.

It is also noticeable in this connection that centre for education and documentation which is responsible for maintaining the historical documents and even preserving them have undertaken efforts to digitize the material in the form of manuscripts and old communication media tools so that it can have a ready reference, even in some cases CED have taken initiative of preparing a format in such a way which would be easy to email it to users which ultimately is a cost cutting effort and a very good initiative for a developing country like India where you do not need to spend more and have access more. There can also be an effort like Mix Media approach where in you can take the help of Radio and even mobile for transferring the data which is again a good source economically affordable.

Hence for getting a connectivity it is imperative for Digital Libraries that they. While selecting the mode of connectivity should see what is the
classification of area Urban/ Semi-urban/ Rural/ Remote to select the proper connectivity depending upon the area infrastructure available and can be used for the internet connectivity for all.

This situation in sighted me to undertake the study of IT usage of Not grant college of Marathwada region. These colleges of both universities of Dr. Babasaheb Ambedkar Marathwada University Aurangabad and Swami Ramanand Teerth Marathwada University are sailing in the same boat. The situation is not much different in the college across Marathwada. There are conflicting reports on these not granted colleges in Marathwada region that some of them are small units but are excellent and giving good results also. Even some have grown enormously and are giving quality education professionally although they don’t have grant.

Objectives of Study

1. To find out the status of libraries in Non-Grant Colleges

2. To investigate the use of I.T. in the Non Grant College libraries.

3. To know the use of E-Resources in Non Grant Colleges Libraries.

4. To find out the effectiveness of I.T. & Use of E-Portals in Non Grant College libraries

6. To Study the problems & bottlenecks in I.T. implementation in Non-
Grant College Libraries

Hypotheses

1. Hypothesis 1 (H₀₁): There is no difference in the opinion about the status of the libraries among students, teachers and librarians.

2. Hypothesis 2: (H₀₂): There is no difference in the opinion about the use of Information Technology in the libraries among students, teachers and librarians.

3. Hypothesis 3: Ho3 : E- Resources are not effective in the libraries of the Non granted colleges in the Marathwada Region.

4. Hypothesis 4 : Ho4 : There are no advantages of the use of information technology in Libraries.

5. Hypothesis 5 : Ho5 : There are no Problems and obstacles of IT utilization and implementation in Non Aided College of Marathwada Region.

Research Methodology

In the above study the researcher has adopted the following method of data collection i.e. from Primary Source and Secondary source.

1. **Primary Data**
   
   Data is collected from primary source by using structured questionnaire designed for students, teachers and libraries.
2. **Secondary Data**

   Data is also collected from secondary source such as Books, Websites, Journals & Reports etc.

3. **Tools & Techniques of Analysis**

   Data is analysed by using several tools like, Mean, SD, F-Test, T-Test, Z-Test etc. with the help of SPSS software.

4. **Selection of Sample**

   It was very difficult part of research as sampling justifies the study. From the Non Grant colleges of Marathwada Region belonging to two universities of Marathwada Dr. Babasaheb Ambedkar Marathwada University, Aurangabad and Swami RamanandTeerth Marathwada University, Nanded. I have deliberately choosen 220 Students, 66 Teachers and 15 Libraries of Non-Grant Colleges in Marathwada region using Simple Random Sampling Method. In a way it is Representative Sample where in the non grant colleges in Both Universities are 202 & 175 amounting to 377 colleges. I have chosen 40 colleges as sample for study i.e. 10% of the universe and out of which a cumulative sample of 301 respondents were choosen amounting to 220 students, 66 Teachers and 15 Libraries.
5. **Scope of Study**

There is a lot of scope for study with the topic of Information Technology is applicable to Arts, Science colleges as well as the Professional colleges & Engineering colleges in Marathwada & Maharashtra as well. The study can be undertaken at Regional, State & National level as well.

6. **Limitations of Study**

The study is limited to Non-Grant colleges of Marathwada Region only due to time /money & Physical limitations. It was not possible to expand the scope as this would have been a proper study and even the results would have been more accurate and for future use in planning & Administrations as well.

7. **Presentation of Study**

I. **Introduction & Research Methodology**

In this chapter a conceptual approach to use of information technology in non grant colleges is outlined. The development world over in the field of computers have provided an impetus to accelerate the rate of information accessing & gathering.

II. **Review of Literature**

In this chapter an extensive review of literature on previous studies has been accessed and this in a way has been instrumental in collection of data from various sources an advantage to research.
III. Information Technology & Non Grant College Libraries

A brief info of the latest development in IT have been discussed in this the developments and its implementation, how much beneficial it is outlined and towards the end the summary of the present status have been inscribed.

IV. Data Analysis & Interpretation

The data collected from structured questionnaire is analyzed and presented in tabular form. Here towards the end of chapter hypothesis is tested by using various scientific tools of analysis.

V. Summery, Conclusion & Suggestion

The last chapter concludes with a brief summary of the research work with major conclusions inscribed in this chapter, followed by suggestions based on the conclusion and observation of the study.

- Bibliography.