CHAPTER – I

PREAMBLE

We are living in an age of information explosion computer and other electronic resource has become an indispensable tool in our society. The main function of a library is to provide information to the users. With the help of electronic resources the staff, students and the researchers can access to the huge volume of information with speed and accuracy.

The internet provides a cheap and efficient means of communication. It is a boon to researchers where they can access to information available throughout the universe with the help of online search with the advent of digital revolution communication became easier and faster and decisions are made instantaneously. The present study is to highlight the user attitude and approaches towards Use of e-resources by social scientists in selected state Universities in Tamilnadu. Analyze the data with that of available materials in electronic form and attitude of users in selected universities in Tamilnadu. The new information technology has created a new infrastructure for libraries and change the way they function and provide services. Most of the academic libraries in India fully equipped with modern facilities collections and staff members. Today E-resources on magnetic and optical media have a vast impact on the collections of university libraries. The commonly available electronic resources are accessed electronically through traditional Medias like CD-ROMs, or through internet as electronic journal, online databases, e-book, OPAC, blogs, wikis, podcasts, etc. used for all. The emergence of the internet and e-resources particularly the World Wide Web, as a new medium of information storage and delivery represents a revolution, which will have a lasting impact on the publishing and information delivery system in the 21st century.
1.1 INTRODUCTION

Today E-resources became essence of every intellectual activity of higher education. Realizing the Importance of the E-resources most of the universities in India liberally investing to provide access to these resources to support learning, teaching and research. Although information in electronic format was created with the advent of the computer in the 1950s, it was not until the early 1960s that the first database suitable for searching was developed. Electronic Resources are mushrooming online, on the Web and in CD-ROM format. The emergence of information and communication technologies (ICT) during last two decades have profoundly impacted all walks of life including teaching and learning and research. This has led to development of reading materials in electronic format which is available to readers online through the Internet.

E-resources in collaboration with Internet have become a sign of modern age being an invaluable tool for teaching, learning, and research. The library and information landscape has transformed with the onset of the digital era and today traditional libraries have changed their roles to serve as ‘Knowledge Centers’ with priority on value added electronic information services. Academic and research institutions are focusing on how best they can facilitate research by canalizing specific information services which compliment as cutting-edge technology. With the advent of globalization in the realm of education, there has been an information explosion. Most of the science and technology, academic institutions as well as R & D Organizations have changed their contemporary outlooks towards the functions, operations and services. The traditional environment has been rapidly changing to an electronic one and the demand for Internet and e-resources among the academic and research community has increased manifold over the years being the most popular source of undertaking research. However, the literature review reveals that, there is a dearth of studies on use of e-resources and internet in context of academics, researchers and students not only in India but also across the globe.

The present decade has been dubbed as the information age. While this concept is not a new phenomenon especially when viewed against its historical
perspective, the revolution in Information and Communication Technology (ICT), and particularly the internet, is exerting profound effects on information-based services. The proliferation of new technologies opens a number of challenges for teaching, learning and research. Notable among these are those associated with the adoption and institutionalization of these emerging technologies in teaching, learning, and research. As a result, in the last few years, there have been many initiatives to enhance the developed and developing countries capacity to harness this technology in reshaping their educational sectors in ways that are consistent with current knowledge societies.

A stage has arrived where bulk of reading materials in printed form is being digitized and made accessible commercially by publishers in the form of databases. During the last decade several databases of journals, books and other scholarly materials have been subscribed to by libraries and made available to their scholars. Academic Institutions and scholar societies are producing their research output digitally and making them available to public freely through their institutional repositories.

Information is more important for decision makers, policy makers, planners, technologists, scientists, doctors, lawyers, etc. Information is a livelihood for many people. One can imagine the importance and the role of information from the fact that in America most of the people are working in information service sectors. User need and the requirements are also changed in the technology driven society. Information is not only available in one source but scattered in different forms as well.

Electronic resources play a predominant role in almost all sectors be it any industry public or private, academic, and government organizations. Engineering corporate sectors are not an exception to it. People working in the corporate sectors are in need of information for a very short period and in the most convenient form because of their busy schedule since they are involving in manufacturing activities, and related activities right from the project stage to the marketing of final products.
1.2 E-RESOURCES

World Wide Web (WWW) has a widest sources of inform as well as coverage the best access. For global communication and exchange of information it is consider as a powerful tool the availability of information on the web is steadily increasing extensively. It transforms the people able to access to information. It has launched new dimensions into the field of information dissemination in digital libraries, education, commerce, entertainment, government and health care. The World Wide Web is got a prominent place to accomplish research activities which are being done in many topics.

E-Resources an electronic resource is defined as a resource which requires computer access or any electronic product that delivers a collection of data, be it text referring to full text bases, electronic journals, image collections, other multimedia products and numerical, graphical or time based, as a commercially available title that has been published with an aim to being marketed. These may be delivered on CD-ROM, on tape, via internet and so on. Over the past few years, a number of techniques about related standards have been developed which allow documents to be created and distributed in electronic form. The E-Resource on magnetic and optical media has a vast impact on the collections of university libraries.

Electronic publishing has lead to new era of communications and information sharing. It creates opportunities for users as well as authors and publishers. Many of the electronic books or electronic publisher’s web site freely permit and encourage readers to provide feedback on works, often directly to the author rather to the publisher. Nevertheless users may establish their own accounts, charge services to credit cards or to pay by prearranged method, and have requested material delivered directly to them by fax, e-mail, etc. today, libraries of all kinds have been spending larger and larger shares of their budgets to adopt or gain access to electronic resources from publishers and vendors. This is due to the fact that E-Resources have enabled libraries to improve services in a variety of ways. First, most e-resources come equipped with powerful search and retrieval tools that allow users to perform literature searches more effectively and
efficiently. Moreover, since most relevant e-resources are now available through the web, users can have desktop access to them 24 hours a day.

There are several forms and types of electronic resources which are available on the internet, some of the popular ones that are gaining ground are the electronic journals, standards, technical specifications, reports, patents, full text articles, trade reports and hosts of other document sources. Also the printed editions of scholarly journals are available on the web. The publishers of journals are themselves providing services like contents, abstracts of articles, full text, before the actual printed edition is put on the stands. Majority of this kind of service providers are those publishers who have several journal publications to their credit, e.g., Elsevier, Academic Press, Springer, Oxford University Press, Taylor and Francis Blackwell Science and others. Their services are available to anyone having access to RSS feed with free of cost. Some of the journals are only available on commercial basis for which to pay and use the required amount, and for these journals, users have to pay for the view and if needed, per copy for the print also. UGC-INFONET and INDEST- Consortium are two major initiatives that have come to the rescue of academic libraries so that they can cater to the needs of academia with reasonable subscription fee.

Organising e-resources is one of the important and crucial works to provide services to the users of the library information system. In a modern digital library information system, the professionals should have skills like computing, database management, networking, and other management skills relating to IT environment. Therefore, library information professionals should keep in mind the followings points while organizing the e-resources.

- To include those resources either in OPAC or to make difference list for browsing
- Organized to access the e-resources either by alphabetical or under specific subject heading for browsing.
- To set up gateway to e-resources for easy access.
- To develop the institutional repositories for the institutional publications journal
• and proceedings papers.
• To check the method of access to e-resources, abstracting or full, since most of the users search the resources under subject heading predominantly, organization of e-resources should be in a such a way that the users could be able to retrieve different sets of information records.

1.3 USER STUDY

User study means a study of the user of information. The kind of information required by the user, the ways and means used for searching the required information, the user of the information obtained, the satisfaction / dissatisfaction arising from the use of information obtained, the flow of information and the relationship of the user with the system (information provider) all come under the purview of user studies. User study is the means for systematic examination of the characteristics and behavior of the users of the systems and services. User study is directly linked to the effectiveness of library and information services as they aim at satisfaction of the user needs.

1.4 HISTORICAL BACKGROUND AND GROWTH OF ELECTRONIC RESOURCES

In fact, changes in the procedures or practices that have been introduced in the recent past in the provision of access to information or databases have been truly dramatic. Now most of the Librarians have considered the option or replacing significant portion of primary hard copy materials with electronic resources. Three Major changes that have occurred during the past four decades can be identified.

1. First, in the early 1970’s abstracting and indexing services i.e. ERIC and Chemical Abstract which provided access to the point literature were made available as online databases. In electronic form the records were more widely available. They had more access points and search was quicker than the print version. Though libraries cancelled some printed indexing and abstracting subscription, these early database could not fully replace
primary hard copy source materials. A fair amount of full text material were later added to the early online systems. These were plain ASCII text. Though this was fine for searching information, it could not replace the original richly formatted, illustrated printed pages.

2. Second, the next major change was the CD-ROM revaluation of 1980’s and early 1990’s. The feature of CD-ROM as well as facilities like graphical user interface allowed more refined database implementations. In spite of the limitation that one disk could hold holy 650 megabytes data; CD-Rom was able to provide a significant amount of fully formatted page images. And due to low cost production, there was an explosion in the full text electronic reference works consisting of smaller databases. In just 10 years (1985 to 1996) the number of CD-ROM the number of CD-ROM increased from two titles to 5379 titles Theses CD-ROM disks could replace some of the primary print material. In fact CD-ROM disks were mostly secondary sources like bibliographic or small scale primary sources.

3. Third the next major change was brought by the internet. One can say that the internet changed everything or more accurately it can be said that it brought many of the promises of earlier technologies to the full potential. The developments like graphical user interface, cheaper computers at home, and a computer literate population finally provided the environment for extensive end user searching. As a result, information became widely available and cheap. With decreasing cost of scanning and storage of full text data, and ever increasing number of internet users, the publishers of scholarly periodicals could justify mounting long runs of primary material often with the facility of full text searching. These developments have forced many librarians to go virtual; substituting significant portions of hard copy collections with electronic only versions.
1.5. DEFINITION OF ELECTRONIC RESOURCE

According to AACR2, 2005 update, an electronic resource is “Material (data and (or) programs(s)) encoded for manipulation by a computerized device. This material may require the use of a peripheral directly connected to a computerized device (e.g., C.D-ROM drive) or a connection to a computer network (e.g., the Internet).” This definition does not include electronic resources that do not require the use of computer, for example, music compact discs and videodiscs. An electronic resource is an electronic information resource that can be accessed on the web, on or off campus. User can get the information what him or her want, when it is needed. Explaining in broader context, an electronic resource is a collection of digital content delivered to the user via the internet. The types of content included in electronic resources are full text, images, primary research materials and data, sound and film. It is important to say that electronic resources also encompass abstract and indexing databases.

1.6. THE ELECTRONIC AGE: BENEFITS

How do we assert the gains and losses of this electronic age? These are certainly a number of gains for the information service provides and libraries particularly due to the versatility of the World Wide Web.

1. There is no time barrier. Twenty four hours/seven days a week is the code word of the current electronic age. One can access information any time.
2. Similarly, there is no distance barrier. In a sense, world wide access means team member can share information and work on projects regardless of geographic or institutional boundaries.
3. Timely and centralized updating of information/databases eliminates the problem of outdated information and errors that were difficult to overcome with print and CD-ROM products. Also flat rate access has become the preferred model for most of the organizations. AT the same time, due to cheap server equipment and storage, information on the databases can be given free of cost by the organizations for the purpose of publicity. Also,
correction can be made in the databases quickly on the basis of feedback received from the users.

4. Hyperlinks were part of the web from the very beginning allowing the users to navigate across databases and find related material. This hyper linking facility is now getting more popular with cooperative efforts of institutions and database producers who are constantly developing new tools and techniques. New enhanced features of databases are now becoming increasingly available as interfaces nature.

5. Now a days, databases have the ability to ad supplementary materials such as various types of audio-visual resources in a wide variety of formats. Data in the form of interactive graphs and spread sheets add totally new dimension to the reading of documents. These are all very important gains.

1.7. VARIOUS TYPES OF E-RESOURCES

1.7.1. Compact Disk Read-Only Memory (CD-ROM)

Compact Disk Read-only Memory. A type of storage device that looks just like an audio CD and stores as much as data of large hard disk (700-800 MB), making it a popular means of distributing fonts, photos, electronic encyclopedias, games and multimedia offerings. As the name indicates, however, one can’t change files on a CD-ROM, but only read them. A memory disc for computers that holds 700-800 megabytes of data. CDROM can be used to store computer programs, databases, books, video, pictures and sound. These media are stored on the same disc to create “multimedia” information and playback. The Information revolution comprises the immense technological advances made during the past centuries in human capabilities to encode, record, reproduce, and disseminate Information.

New technologies for preserving and transmitting visual information have greatly increased information processing capacity. The electronic computer together with its peripheral equipment provides an electromechanical capability for modifying and reprocessing stored information to produce vast new stores of information. Spiraling cost of conventional printed documents in the modern
technological era compelled the libraries and information centers to go for the procurement of electronic media like, CD-ROM (Compact Disc Read Only Memory), floppy diskettes, magnetic tapes, etc. The CD-ROM, one of the storage and distribution technologies uses the laser power and optical techniques.

The CD-ROM can store substantially more information in a given amount of space. CD-ROM, an optical disc made of polycarbonate having 12 cms in diameter with only 1.2mm thickness can accommodate upto 700 MB of information which is equivalent to 2,75,000 to 3,00,000 A4 type written pages of text or a single disc can store the entire Encyclopedia Britannica.

The usage of CD-ROMs now in India has gained much popularity due to easy availability of CD-ROM titles and also due to reducing cost of CD players. This technology also extends an offline alternative for search. Now, several leading companies in the entire world have started to launch their products through this form. Due to the advancement of technology, the CD-ROMs are getting used profusely in the document copying/writing business. The price has been falling for CD-R (CD Recordable) drives that can write data to a special type of Compact Disc. No portions/parts of data can be written/ recorded on the already written discs. However, data can be added without any change in the prerecorded data. Drives for rewriteable CD-ROMs (CD-RW), which overcome the immutability of CD-R.

In the digital age, a paperless library has already come into existence with the availability of CD-ROM databases; CD-ROM has an indispensable role to play in the dissemination of electronic information and it has already found a special place in the rapidly growing digital libraries. In CD-ROM, text and graphics are available in digital form in the modern publishing process.

1.7.2. DATABASES (REFERENCE WORKS AND INDEXES)

The databases include products such as periodical indexes and abstract, directories, encyclopedias, dictionaries, other references works. In general the databases provide search facilities to users by subject, type and title or keyword(s) with the Boolean logic feature.
Important Features of Databases

The electronic databases have the following important features.

- Huge information reservoir
- Up-to-date information
- Multimedia format
- Quick information retrieval
- Multidisciplinary approach
- Peer-reviewed information sources
- Various search options
- Special services i.e. Selective Dissemination of Information, Alerts, etc.,

These databases contain virtually millions of records and keep increasing on daily basis. They not only contain textual information but also have images, audio and video. All these databases have inbuilt search engines which allow a user to carry out search by author, title, subject and keywords. It also leads to quicker retrieval of information. Electronic databases allow a user to have additional value added services like SDI and article alerts. As and when an article or information appears in the database of a reader’s choice or interest, he or she is immediately informed by email. This saves a lot of time of user and also leads to effective utilization of resources.

Contents of Databases

An electronic database may consist of following

- Journal Articles
- Magazine Articles
- Newspaper Articles
- Book reviews/chapter/citations
- Dissertations/theses
- Citation and Analysis
- Abstracts of articles/theses
1.7.3. E-JOURNALS

Electronic journals encompass information products as electronic journals, and links to e-journals collections like gateways as well as publishers such as JSTOR, Project Muse, and ScienceDirect. The users can search e-journal by title. They can browse e-journal titles alphabetically as well as by subject category. Sometimes a hierarchical outline of subject categories or A to Z index of subjects is also available. Currently most of the modern libraries facilitate e-journal collections and databases.

1.7.4. E-BOOKS

A good number of libraries and information centers provide links to collections of full-text books like books 24X7. Early English books online, NetLibrary. Libraries provide access to full-text electronic books with a focus on information technologies. For example there can be a collection of thousands of online full-text and other materials across a variety of subject areas and a collection of online scholarly books in the field of specific single subject. In various S & T Libraries aggregated engineering and applied science handbooks, databases, and data can be accessed full text and also by utilizing specific proprietary tabular analysis tools.

1.7.5. E-NEWS

Electronic news has already made its place in the form of news resources like LexisNexis and Factiva, and links to local, national, and International newspapers.

1.7.6. E-IMAGES

Due to advent of electronic image facility, image databases are used specifically in subjects such as history, geography, medical sciences etc. The libraries develop in house digital image collections and also provide access to selected external databases to their clientele.
1.7.7. E-MUSIC AND SOUND COLLECTIONS

Electronic music and sound collection are creating their niche which in multimedia libraries. Digital sound recording collections are facilitated by libraries.

1.7.8. DATA/GIS

Numeric and geo-spatial data suitable for those interested in using either statistical or GIS software is provided.

1.7.9. ACADEMIC COMMONS

The intellectual output of a particular organization is also considered. Online access to university dissertations, working papers, proceedings, etc. is facilitated to the academic community. The access to such e-resources can be restricted to the organizational users only, depending on policies.

1.7.10. E-REFERENCE

Electronic reference sources are the significant facet of e-resources. E-reference sources can be comprised of following types of resources:

a) Dictionaries
b) Translators
c) Encyclopedia
d) Directories
e) Glossaries
f) Virtual Newspapers
   i. International Newspapers
   ii. National Newspapers
   iii. Local Newspapers

1.7.11. SUBJECT GUIDES

As the name suggests the subject-focused guides to digital and print resources. These types of resource help in day today faculty needs and cater to wide variety of user demands in them.
1.7.12. WEB SEARCH TOOLS

Internet search tools like search engines, As, Yahoo, Live Search, Google including various feature such as Google Book Search, Google Earth, Google Images, Google Maps, Google Scholar and Google Co-op; are inevitable as well as significant components of library. Meta search engines such as Mamma metasearch InfoMine, Dogpile, Grokker, and MetaGlossary do make impressive aspect. Directories/reference sources such as Wikipedia, Bubl Link, PubMed, WWW Virtual Library, audio-visual tools such as YouTube, Radio-Locator, Singfish blogs and web 2.0 tools such as Technorati, Flickr and guides/reviews such as search engine showdown as well as search engine watch are available.

1.7.13. SUBJECT OR INFORMATION GATEWAYS

Subject and information gateways are the free information and resources available on the web which have been carefully chosen and quality checked by experts in their field. The subject Gateways provide access to reliable and up-to-date web resources for all subjects, some examples are as following:

Intute: Intute is the best and most relevant resources covering all subjects, in one place. It provides trusted information, which has been evaluated by specialists for its quality and relevance.

Google Scholar: User can search across many disciplines and sources for scholarly literature and relevant research. Resources include papers, theses, books, preprints, abstracts and technical reports.

BUBL Information Service – Internet Resources for all Subjects: BUBL links the selected internet resources covering all academic subjects’ areas. BUBL uses the Dewey decimal classification systems as the primary organization structure for its catalogue of internet resources.

Pinakes: It is one of the vital subject launch pad linking to the major subject gateways. In ancient times, the library of Alexandria was seen as a universal store of human knowledge. As the library grew in size, however, it became increasingly difficult to locate relevant material. The poet Callimachus
solved the problem by compiling a catalogue called the Pinakes. On a far smaller scale, these web pages hope to provide a similar function for internet resources.

1.8. ETD’s (Electronic Thesis and Dissertations)

An ETD is a document that explains the research or scholarship of a research scholar in an electronic format. It is simultaneously suitable for machine archives and worldwide retrieval. The ETD is similar to its paper predecessor. For example, it has figures, tables, footnotes, and references, a title page with the author's name, the official name of the university, the degree sought, and the names of the committee members. Furthermore, it may describe why the work was done, how the research relates to previous work as recorded in the literature, the research methods used, the results, and the interpretation and discussion of the result, and a summary with conclusion. The ETD is different from its paper predecessor, however, in a few important aspects. First, it provides a technologically advanced medium for expressing the scholars’ ideas. One can prepare an ETD by using nearly any word processor or document preparation system, and by incorporating relevant multimedia objects. Second, it is less expensive to prepare. By creating an ETD, the requirement of submitting multiple copies on special paper can be avoided. Third, ETDs promote greater access to the research work. ETDs are made available to anyone that browses the World Wide Web. They consume virtually no library shelf space, and never collect dust. Overall, ETDs contribute to worldwide education and unlock the underutilized results of graduate research for the scholarly community.

1.9. INTERNET RESOURCES

Networks: A number of PCs can be linked together so they can share resources like printers, files and disk space. A network uses a connecting cable to pass information between the different PCs in the network, each of which has a unique "address" so that it can be identified unambiguously. There are a number of ways that networks can be formed depending on the type of hardware and software in use, but essentially there are two types of network: a centralized network has one machine that holds all the crucial software, and the other linked machines are
dependent on this central machine to run correctly. In this network, the linked machines will not run as standalone machines. Whereas, a decentralized network consists of a number of PCs, which are equivalent. They may be run as standalone machines, or as part of the network.

**The Internet:** At first military, then academic institutions began to see the benefits of connecting computers, mainly for the purpose of communicating and sharing information. For the first twenty years of networking, between the late 1960s and the late 1980s, such networks grew slowly. Over the last five years there has been a mushrooming of the number of computers that have become connected, as the technology became affordable to smaller organizations and to individuals. The resulting loose decentralized conglomeration of local/regional networks has become known as the Internet. It is important to realize the distinction between "the Internet", which is the system of interconnected computers, and "Internet services" which are what people use the Internet for, and include applications such as e-mail and World Wide Web browsers which are discussed below. Estimates of how many people are connected to or use the Internet vary, but everyone agrees that the number is growing rapidly. Connecting to the Internet allows access to a number of different services, some of which are explained below. The most popular services are e-mail, newsgroups and the World Wide Web (WWW).

**Electronic mail** (e-mail): Electronic mail (e-mail) is one way of sending information from one computer to another. It works in the same way as posting a letter "snail-mail". Each network on the Internet has a unique identifier, and each person on a network also has a unique username; the combination of these two make up their e-mail address and are unique worldwide. Once connected, one can communicate with anyone else on the Net of course when the e-mail address is known.

**Mailing lists** (or list serves) are public e-mail addresses set up for a particular topic, for example the British Computer Association of the Blind (BCAB). Anyone who wishes to publicize information which they think will be of general interest to members of BCAB can post it to the list. Anyone who
subscribes to the list will be sent a copy of the message, and may address questions or comments to it. This enables to contact people who share an interest.

1.10. ONLINE PUBLIC ACCESS CATALOGUE (OPAC)

Online Public Access Catalogue is a term used to describe any type of computerized library catalogue. Online Public Access Catalogues allows in providing the flexibility to:

a. Find out what the library has to offer
b. Check the status of an item (checked out, on shelf, on hold, and so on)
c. Check the library record for fines, reserves, or over dues
d. Reserve an item
e. Look up community information
f. Use CD-ROM databases (such as indexes or encyclopedias)
g. Link up with library catalogues or databases in other communities
h. Some OPACs are user-friendlier than others. In some libraries there are instruction sheets right at the terminal. In addition, guides to using the OPAC, called "help screens", appear on the screen whenever required while searching.
   i. A library's card catalogue allows a search by title, author and subject, but that 3x5 card catalogue is almost gone. The same information is available online with some subject expansion. Some systems, allow to search by a combination of fields such as title and author, thus narrowing the search. As well, it may allow searching by keyword.

1.11. OPEN ACCESS AND E-RESOURCES

World wide researchers publish their results to establish their own claim to the research and to enable other researchers to build upon them. In the case of journal, only the richest institutions have been able to afford a reasonable proportion of all the scholarly journals published and so learning about and accessing such articles have not always been easy for most researchers. Open Access comes as a breather for this. The World Wide Web provides the platforms for researchers to make their research results available o anyone, anywhere, at any
time. This applies to journal articles regardless of whether or not their library has a subscription to the journal in which the articles were published as well as to other types of research outputs such as conference papers, theses or research reports. This is known as open Access.

‘Open Access’ (OA) means that a reader of a scientific publication can read it over the internet, print it out and even further distribute it for non-commercial purposes without any payments or restrictions. At the most the reader is in some cases required to register with the service in questions, which for instance can be useful for the service providers in view of the production of readership statistics. The use of content by third parties for commercial purposes is however, as a rule prohibited. Thanks to the open availability the linking form reference lists to OA publications is substantially facilitated, since the reader does not encounter barriers such as sue licenses, and each reference is only a mouse-click away. In general, the author keeps almost complete copyright and can also publish the materials elsewhere.

1.12. UNDERSTANDING THE IMPORTANCE OF E-RESOURCES

Factors responsible for emergence and better management of e-resources are as following:

i. Many authors and corporate bodies resorting to publishing their won scholarly publications.

ii. Researchers are interested to access full-text publications and reference linking.

iii. Many scientific journals are available online.

iv. Electronic information has recorded growth market in the World.

v. Web searches encouraged users in browsing content pages of journals – by Author and keywords.

vi. Paid subscribers are allowed browse full-text articles with downloadable facility.

vii. Electronic journals are available online through internet and web.
viii. Organizations are initiating e-publications and also providing on-line services to users.

1.13. PRINCIPLES OF GOOD E-RESOURCE COLLECTION

An e-resource collection consists of objects that are selected and organized to facilitate their discovery, access, and use. Objects, metadata, and the user interface together create the user experience of a collection.

1.13.1. Building of e-resources and explicit collection development policy

E-resource collection is created according to an explicit collection development policy. E-resources development is closely tied to an organization’s goals and constituencies. The decision makers should be able to refer to the mission statement of their organizations and articulate how a proposed collection furthers or supports that mission. The institution should be able to identify the target audiences for the collection but also think about unexpected uses and users. If the institutions collect print, artifacts or other non-electronic materials, the choice of e-resource should fit in with the organisation’s overall collection policy.

1.13.2. Broad availability of electronic collection

A good collection is broadly available and avoids unnecessary impediments to use. This principle encompasses three attributes. Availability, Usability, and Accessibility.

**Availability:** Availability means that the collection is accessible and usable upon demand by an authorized person. This implies that collections should be accessible through the web, using technologies that are well known among the target user community. Availability does not require that use of all materials be free and unrestricted. Charging for use and limiting access may be appropriate and even necessary in some circumstances. Library must attempt to make the materials as widely available as possible within any required constraints.

**Usability:** Usability refers to ease of use. There is often a tradeoff between functionality and general usability. In the context the timing of the adoption of new features should be considered in light of how many potential users will be
capable of using the technology as well as how many will find it a barrier. Bandwidth requirements are also a consideration. It must be kept in mind that some file formats or interfaces may not be usable by individuals on low bandwidth connections.

**Accessibility:** For general access collection, items such as the web pages and search forms providing access to the collection, as well as the metadata and digital object displays, should be tested. There items should be tested against various browsers and browser versions. It should also be kept in mind that different operating systems support different commands for manipulating screen information, such as selecting multiple items in a drop down menu on a search screen. This testing should include windows, Mac, and Linux Operating systems.

**1.13.3. Dealing with intellectual property rights**

The collection development policy should incorporate copyright policy. Intellectual property rights must be considered from several points of view:

- What rights the owners of the original sources materials retain in their materials
- What rights or permissions the collection developers have to digitize content and / or make it available
- What rights or permissions the users of the electronic collection are given, to make subsequent use of the materials.

For rights management, librarians should maintain a consistent record of rights holders and permissions granted for all applicable materials. Rights management is complicated by the fact that a work may include contributions from many creators. The underlying rights of complex multimedia works can be challenging to untangle. Many useful collections lack a deed of gift that clearly permits the electronic distribution of resources. In the environment of uncertain provenance, current best practices suggest.
1.13.4. Risk assessment

A risk assessment will enable the library to make practical, defensible choices among collections of uncertain provenance—a critical concern for electronic collection building. A policy statement can articulate the organization’s reasons for making works of uncertain provenance available in electronic form to a wide audience. It should be posted prominently on the web portal to the collection.

1.13.5. Interoperable Collection

A good collection is interoperable; collection developers should design their services to support interoperability, particularly the ability to share their metadata with external search engines. At an early stage in the collection design process, collection developers should scan the landscape for related efforts. Collection developers should be aware of and in contact with related efforts, follow widely accepted benchmarks for quality of content and of metadata, and provide adequate collection description for users to place one collection in the context of others.

1.13.6. Collection integrating Users’ Workflow

A good collection integrates into the users own workflow. When electronic collection building represents a significant new service for an organization, it presents an opportunity to review existing workflows, and possibly reallocate resources, responsibilities and tasks. In order to successfully add electronic collections to an organization’s service suite, it is important to integrate electronic resources building into staff workflows.

1.13.7. Sustainability

A good collection is sustainable over time. Electronic resources containing resources of long-term value should be sustained and archived permanently to ensure access. Sustainability needs to be addressed from an organization, financial, and technical perspective. Organizational commitment requires buy-in from administrators. There must be a clear understanding of the long-term obligations necessary to ensure sustained electronic resources.
Particular electronic resources built with special funding should have a plan for their continued availability, maintenance and support beyond the funded period. Optimally, regardless of how it was initiated, the electronic resources will be integrated into the institutional collections management workflow. However, managers of collections containing materials of long-term importance should take steps to ensure not only that the objects within them will be preserved in usable form over time, but also that collection level access to the content is maintained.

1.14. E-RESOURCES POLICIES

The availability of e-resources opens new vistas for teaching, research, and patient care. Although acquiring materials in digital form and organizing them for use is both costly and challenging, electronic resources will be a critical element of the libraries of the future. Cooperative acquisitions and cost sharing with organization libraries and consortia are pursued when feasible to provide access for some of library users. The library can meet the demand for broader subject access and cross campus access with e-resources.

Resources may be accessed in a variety of ways but internet/world wide web is preferred. The decision to select specific products depends on projected use, licensing requirements, support services either local or remote, and other access issues. Materials must be available on campus and remotely. Reserves and various learning programs are also included. Resources can be accessed via the online catalog and or the library website. Resources available via the internet are proliferating. The libraries recognize that careful selection of electronic resources, and availability of these through the libraries catalog will accomplish several objectives below:

1. Increase awareness and maximize use of significant sites
2. Provide value-added access to internet resources often absent when using various search engines to locate resources
3. Enhance and expand the library’s collection of traditional formats.

Selection responsibility of these resources rests with individual subject
Bibliographers and the Head of Collection Development as these materials fall into their regular selecting responsibilities.

1.15. RESOURCES SHARING

The important factor that influenced the library collection development is resource sharing. This concept is old but gained momentum with computer network environment paying way for consortia.

Resource sharing is one of the components of cooperative collection development and management. It began decades ago as a means to alleviate problems of lack of space, high costs of periodicals, limited budgets and costly duplication especially for less used materials. Self sufficiency in such an intellectual, economic and social environment is a myth. Resource Sharing was adopted as no library can independently satisfy the needs of its users. It links users with needed material and information regardless of where that material is located. Michael Buckland (1992) writes that resource sharing has two uses they are collaborative cooperation amongst libraries and effective utilization of technology.

In the emerging digital environment resource sharing has expanded to include consortia agreements to purchase group access to electronic resources at discount prices. The objective of these consortia is to share resources, mostly periodicals, followed by books, tutorials, reference sources, thesis, dissertations that are available in electronic form. A consortium facilitates access to full text databases, journals articles, research papers and other information resources in electronic form. It was practiced as an agreement among libraries in the system leading to cooperation. The ultimate vision of electronic resource sharing according to Summerhill (1991) is “a single network to be shared by library personnel and end users in effect a restructured interlibrary lending model”. He foresees innumerable opportunities for sharing information resources through electronic networks.

In the digital information environment the important facet of resource sharing is the development of joint licensing agreements that permit consortia of libraries to share responsibilities and costs of providing access to electronic
resources. A consortium 30 involves more than inter library lending. The Committee for Institutional Cooperation (CIC) has taken a lead for exploring the possibilities for resource sharing in a networked environment. It has established a smaller electronic journal collection for which consistent archiving is provided.

### 1.16. LIFE CYCLE OF E-RESOURCES

One of the main goals of the electronic resources management system is to support electron collection development. Currently, for each resources that librarians want to acquire, they must learn which of many diverse sources will enable them to acquire the resource and, needless to say, a librarian cannot always be aware of all the available options. This description is the point at which the resource’s life-cycle in the library begins.

The typical stages for resources not freely available would include the following below:

- **Discovery:** The awareness of a new e-resource originates from a faculty member’s request, a recommendation from a subject librarian an advertisement, a message in a forum, or another source. The librarian then locates information about the e-resource in the ERM systems global knowledge base, information that might include, for example, the bibliographic details of an e-journal, the coverage period available, the packages that include it, and the interface or interfaces through which such packages are offered.

- **Trial:** In many cases, the librarian will want to try out, an e-resource before reaching a decision about whether to purchase it. A trial enables the librarian to offer the e-resource to some or all users – who may include patrons and librarians alike – and then base a decision on their feedback. In the trial process, the librarian activates the e-resource in the desired areas of the library environment, notifies the relevant audience, and obtains feedback.

- **Selection:** Once the trial is over, the librarian decides whether to acquire the e-resource. A decision not to purchase the e-resources results in its deactivation in the library environment.
**Acquisition:** If the librarian decides to go forward and subscribe to the resource, then the acquisition process somewhat resembles the process used for print resources; however, an additional level of detail is required, such as license information and information about the availability of the resource to various population of users.

**Access:** Access is a major issue when you are dealing with e-resources, unlike print holdings, once a library has acquired an e-resources, the librarians want to ensure that it is well used. First, they need to make certain that users can access it easily – for example, from and A-Z list; form the OPAC, if relevant, from a metasearch tool or via a link server. Issues such as access by remote users also need to be solved. After the initial configuration of access, which might have been taken care of, at least partially, at the trial stage, librarians must deal with maintenance – including routine maintenance, problems such as the temporary unavailability of the resource, and changes in the provider’s address or the manner of access.

**Decision to renew or cancel:** An e-resources subscription is typically valid for a defined time period. When the period ends, the librarian needs to decide whether to renew the subscription or cancel it. Unlike the initial decision at the selection phase, this decision is based on the information accumulated in the system, such as the actual usage of the resource while it was available the reliability of the interface, and the responsiveness of the provider. Whatever the outcome of the decision – renewal or cancellation – the system needs to support it. Furthermore, even after a subscription has been cancelled, the library might have perpetual access or archiving rights to the data, another area that librarians must deal with on all ongoing basis. The description provided here is admittedly a simplified version of the stages involved. Many e-resources today are purchased through consortia, which wield considerable purchasing power. In a consortia environment, the procedures involved in acquisition, access and decision – making are much more complex.
1.17. ADVANTAGES OF ELECTRONIC RESOURCES

Electronic resources offer a number of advantages not only to libraries but also to users, authors, editors, publishers, and archivists. The advantages are:

- Low cost of production compared to print documents.
- Cost of publication and distribution is less than the print versions.
- Saves enormous time by providing easy and instantaneous access without wasting time for processing, printing, binding and delivery.
- Eliminates printing, binding and postage costs.
- Allow interactive facility.
- Facilitate easy duplication into new media and distribution.
- Integration of different media (Image, Sound, Video etc.).
- Saves library storage space.
- Provide hyper links to related additional resources.
- Have potential to conserve fragile / precious original materials.
- Allow remote access from anywhere at any time.
- Facilitate access to physically challenged persons.
- Enable simultaneous access to large number of users.
- The data can be easily manipulated at regular intervals and can be kept always up-to-date in electronic media.
- Are eco-friendly.
- To provide current awareness service to all users, faculty, research scholars and Post Graduate Students.
- The electronic resources indifferent to environment hazards and if handled with care will show great durability which cannot be achieved on paper based print media.
- Multiple access and through local networks become easy.
- To access and retrieve relevant articles, a good number of search engines are available.
1.18. DISADVANTAGE OF ELECTRONIC RESOURCES

The University libraries face enormous challenges and opportunities. The amount of information that libraries need to acquire continuously increase and the existing resources are insufficient.

There are many disadvantages as mentioned below:

- All e-resource devices require power.
- Require high cost for technology infrastructure.
- Need special equipment to access.
- Hardware and software compatibility problem.
- Lack of compatibility among different publishers.
- Copyright violation problem.
- Book reading devices are more expensive than most paper books.
- Lack of awareness of information technology skills for usage of electronic resources.
- Technological barriers.
- The initial cost is very high. As a result many publishers are forced to calculate the expected benefits before embracing on a publication product (economical barriers).
- Use of products according to the convenience of the user is not possible. It has certain technological restrictions.
- Lack of uniform standards in the retrieval of software products from different publishers creates problems in their usage.
- Since reading of electronic resources requires skills, the users have to acquire certain skill before hand or take the help of intermediates like library professions to help them in accessing the electronic documents. Even the library professionals have to learn the skill, if they desire to serve the users effectively and efficiently.
- The libraries face a number of problems relating to the new media that are yet to be popular among their users.
CONCLUSION

In the view of the above, the social scientists intended to undertake this topic on “Use of E-Resources by Social Scientists in Selected State Universities in Tamilnadu”. The study aim to ascertain the meaning of E-resources, Importance of E-Resources, user study, Historical background of E-Resources, Various types of Electronic resources, Internet resources, Electronic polices, Electronic age benefits, Electronic Resources Advantages and Disadvantages and services among PG students, M.Phil Scholars, Ph.D., Scholars and Faculty members.

REFERENCES:


