CHAPTER – 1

INTRODUCTION

Knowledge is power and access to knowledge is the epitome of civilization. Communication of knowledge is a dynamic process. It is hidden and transmitted through information contained in documents, that includes data, resources, records, related files, which ultimately takes the shape of competitive intelligence from a wide range of sources (D. Rajyalakshmi, 2007). This information is available in different forms and formats like books, magazines, journals, CD-ROM, Internet sources, online databases, microfilms and magnetic tapes.

Technologies affect and influenced the way we seek, locate, access and use information. Changes in technology in recent years have dramatically altered the manner in which information is accessed, stored and disseminated. The driving force behind this rapid growth of information is due to the impact of the Internet. “Although the Internet is the newest medium for the flow of information it is the fastest growing new medium for all times, becoming the information medium of first resort for its users.”(A. C. Lynch & C. M. Preston, 1990). This observation is relevant to modern academic university libraries as they have to adapt to the growing technology to enable potential users to access the required information and facilitate the most effective use of such resources.

A university library inevitably becomes an intellectual arena and a place for the generation and dissemination of an ocean of knowledge. It provides a world class of resources and services to its users. Previously the quality of a university library was judged on the basis of the size of its collections of books, journals and other materials. Now the emphasis has shifted to the networked information services provided through modern technologies like CD-ROM networks, Internet and consortia.

1.1 Emergence of Information and Communication Technology.

The term information and communication technology was first used in 1997 in a report by Dennis Stevenson to the United Kingdom government. It has been used as an extended synonym for information technology. Information and communication
technology consists of all technical means used to handle information and aid communication including computer and network hardware. Some of the well noted definitions regarding ICT that are developed over the years to describe the concept of ICT.

The New Shorter Oxford English Dictionary defines information communication technology as “the technology that deals with the storage processing and dissemination of information specially using computers”.

According to Takalkar (2001) ICT is “a combination of computer and telecommunication technologies which makes possible new systems and new products to help people at work, in education and home. Information technology is the application of a wide variety of electronic technologies to the information handling activities”. Thus it is the combination, of computer and communication technology by which information can be stored, processed and disseminated for the present and any future use.

In the modern information society there is a sea change in information generation, distribution and access. ‘Rapid developments in the field of Super Highway Technology in recent years paved the way for revolutionary changes in different sectors. In addition computer networks play a crucial part in digital communication. It is one of the fastest growing technological areas that have brought many benefits virtually to every country in the world. With the interconnection of computer networks to the Internet the world truly became a global village. They are very essential for effective usage of information technology’ (S.P.Singh, 2000). The current technological developments in information technology made easy access to information especially for the scholarly and scientific communication of information. The trends in e-publishing metamorphosed the way scientific community publish and access information. The benefits of e-publishing coupled with network communication trespassed the space and time limitations.

Though e-publishing is still in a “simulation” stage of development most of the authors, research scientists have exploited the full capabilities of the electronic media. Scholars now use a variety of networks to access sources needed in their research to exchange information with colleagues and other institutions and further collaborate with
them in research and publishing activities. Some changes like the substitution of scholarly journal in paper form with e-journals, the printed version of the book with e-books is observed. Further self publishing and open access movement made it possible to have more scholarly and scientific information accessible at the click of a mouse.

Consequently the explosion in the use of information technology has provided scientists, researchers and general public unprecedented access to information. Anyone with a computer link to a network can access an astonishing array of information resources located throughout the world.

1.2 Impact of Information Communication Technologies on Libraries.

Recognizing the fact that the use of information communication technologies opened new avenues for better services in the new digital environment, libraries in higher educational institutions have adopted new technologies. Many organizations like IFLA, Global Libraries Initiatives, Technology and Social Change believe that the library and information communication technologies are at a point in their evolution where each is able to provide significant value to the other. Both share an interest in the use of technology to achieve their ultimate goals. (H. Billings,1996)

Various changes and approaches have occurred to organize and retrieve information. The terminology also changed from library to library portal; card catalogue to Online Public Access Catalogue; print to electronic collections; information services to web based services. The application of ICT and the Internet in libraries transformed the learning environment in libraries to multi dimensional one. In particular the Internet has changed the traditional method of processing information from collection to communication. It has drastically transformed the way library and information centre manage their collection, process, store, retrieve and communicate information. Library collection has witnessed the ages of clay tablets to papyrus sheets, paper documents to silicon chips, optical and magnetic disc. ‘The process of information retrieval, for both librarians and library users is both simple and more complex than ever before. It is simple due to the speed and simplicity of the search mechanisms that return key word matches in
seconds. On the other hand it is more complex due to the staggering size of the Internet and lack of organization that is found in online information’ (IFLA/UNESCO,2006).

Therefore ICTs supported the libraries to bridge the gap between electronic resources and netizens through sustainable and seamless infrastructure. Hence this modern society is changing towards a paperless society (M. P. Satija, 2003)

Thus the applications of ICT pervaded into every activity of the library like collection building, selection, organization, access, storage and maintenance of information products and services to information. The availability of a large quantity of dictum in electronic form compelled libraries to have no other option other than to build collections in e-resources. Libraries need to concentrate their efforts for better organization of this unorganized mountain of electronic information in different formats. They need to manage their online collection of information so that it is made accessible to a community of users. In order to ensure that this is done effectively libraries have to provide users with a uniform interface to access, relate and combine data stored in multiple, autonomous and heterogeneous information sources.

The present study is focused on collection management of e-resources and describes the various trends that have occurred in the functions of collection management in an academic library.

1.3 Impact of Information Communication Technologies on Collection Management in University Libraries.

Over the past four centuries the transfer of information has been affected primarily through the printed word. Application of ICT for information transfer lead to the development of a highly structured and complex system for the production and distribution of information. This lead to an innovative media that superseded structured system of print and publication.

In the opinion of Varalakshmi (2004) ICT enhanced the existing modes of communication for eg. reduced the cost of production and increased the level of performance; provided additional alternative channels to communicate information; for
eg. electronic resources. They facilitated to provide an entire new information communication channel that achieved direct interactive and informal means of communication, for eg: Online Journals.

Libraries with good stock of print documents and reading facilities are no more an attraction. The physical hard volumes of books and journals are slowly being replaced by electronic media like floppy discs, magnetic tapes, CD-ROMs and DVDs. The mode of presentation has changed from static text to graphic, hypertext, audio, video, and interactive multimedia. Many libraries are redefining their collection management policies to include digital collections through consortia models.

The collection of modern library is not restricted to print media but actively add e-resources to their existing collection, due to increasing cost of print publications and easy accessibility of e-resources. The transformation from print media towards the magnetic, optical and virtual formats gave rise to concept of an electronic library. As e-resources provide access to substantial portion of world’s literature expeditiously, exhaustively, efficiently, pin pointedly, up to date, authentically at the simple touch of a button (Sanjeev Kumar & Y. Sharma, 2010), libraries cannot deprive their users and ought to include them in their collections.

Libraries with a vision accommodate all types of media and provide services to their users in a more convenient and efficient way. Gary W. White (1997) stated that in the contemporary library environment, documents were either born digital or converted digital. This witnessed the availability of more and more e resources in the libraries. These changes brought about by digital data affected all aspects of collection management activities in libraries. Many users if given the choice between digital and physical delivery of data will opt for digital data. This is due to convenience and ease of access. Thus the major development that has taken place in the development of library collections is the wide spread availability and use of various kinds of electronic resources that are produced by applying modern information technology.

Though electronic sources cannot fully replace the print collections they can augment these collections. Hence university libraries are giving preference to electronic
information resources. E-resources cover such things as full text databases, electronic journals, image collections, multimedia products, collections of numerical data. They may be delivered on an optical media or through Internet. The university libraries of the present day have a hybrid collection management system that encompasses print as well as electronic documentary collections. They must exchange information for resource sharing in an electronic way.

Therefore the library paradigm is shifting from access on ownership basis to network connectivity and access to distributed information centres worldwide. Thus university libraries have to become technologically stronger to cope up with the increasing information overload.

1.4 Electronic Resources Concept and Characteristics.

Evolution and growth of e-publishing industry in the field of ICT has given birth to electronic resources. It is an umbrella term for all digital resources. Digital information exists in a format that a computer can store, organize, transmit and display without any intervening conversion process. It is described as ‘born digital’. They refer to the use of information technology in the production of publication and the electronic distribution of text through computer terminals. These resources play an important role in the creation, transmission and storage of information.

Electronic resources encompass many genre, formats, storage and delivery mediums. It is a combination of those resources that are ‘born digital’ and ‘made digital’. The storage refers to the medium used to store and deliver contents to the users. The delivery medium may be a CD-ROM, a magnetic tape or a server that is accessed through the Internet (Johnson, 2004). Thus electronic information arena involves resources covering a wide variety of materials, including indexing and abstracting services, electronic books and serials, electronic databases offered by information aggregators, document delivery services and web sites. Many of these resources may be locally mounted on a library’s server or they may be accessed remotely by modem or through direct Internet connections maintained by the library.
The importance of electronic information resources in academic institutions is ever growing. Their primary motto is to provide access rather than ownership. The initiatives like consortia approaches and e-resources in university libraries are expanding and gaining momentum for eg use of UGC Infonet, NPTEL Courseware. University libraries must move with minimal disruption from a library model directed primarily at ownership of materials to one in which access and delivery play a more central role (R.M. Michalko & Hughes, 1991).

Electronic resources located and remotely accessed by librarians have been characterized by continuous, incremental growth in products and services. They present unique considerations like comparing various delivery and access media for the same content, complex pricing structures, access to retrospective files, copyright, security, bibliographic control, indexing, archiving and contractual licensing issues and high expenses. The wide spread availability of electronic resources posed new challenges in the library acquisition process such as site licensing, copy right issues and means to provide access to various electronic resources (D. Sivaraj etal, 2007). Best standards and practices are still in the development stage to handle the compatibility of the systems, standard format, interoperability, data encoding and transmission scheme to convey information.

1.4.1 Definitions

Various authors and organizations have defined E-resources as follows:

AACR-2 defined e-resources as “a material (data/ program) encoded for manipulation by computerized devices. Thus material may require the use of a peripheral directly connected to a computerized device (eg CD-ROM) or a connection to a computer network (eg Internet)”. On similar lines C. Tenopir(2000) has defined e-resources “as those electronic information resources and services that user accesses electronically via a computer network from inside the library or remote to library”.

International Coalition of Library Consortia (1998) defines electronic resources as “a broad term that encompasses abstracting and indexing services, electronic journals and other full text materials, the offering of information aggregators, article delivery services,
etc. Electronic resources can be accessed through remote networks from information providers or locally mounted by a consortium or one of its member libraries.

According to IFLA/FAIFE (2007) these are “materials that are computer controlled, including materials that required the use of a peripheral (a CD ROM player) attached to a computer; the items may or may not be used in the interactive mode.”

Electronic resources are defined as being publicly available information resources, which can be accessed through a personal computer. These include commercially produced resources such as bibliographic databases accessed online or through CD-ROM, electronic journals, electronic books as well as resources that are freely available through the Internet specially to higher education institutions or to the public in general.(www.roehampton.ac.uk/customer/erpolicy.pdf).

The e-resources are defined from different points of view by many organizations and authors. However for the purpose of the present study the electronic resources are considered as those materials that require computer access and may be either locally mounted or accessed remotely through the internet.

1.4.2 Evolution of e-resources in Libraries and Information Centers.

The evolution of electronic resources can be reviewed from the advent of computers in 1950’s. ‘It was not until the early 1960’s that the electronic information was first introduced in libraries in the form of electronic bibliographic indexes’ (R.D.Gennaro,1973). These bibliographic records occupied large amount of disks space. Each technological development during the 20th century gradually led to the development of online catalogues.

One of the major developments was Machine Readable Catalogue (MARC). In 1967 the Ohio College Association established the Ohio College Library Centre which is the world’s first computerized library network. In 1971 OCLC introduced shared cataloguing database. It supported 54 academic libraries in Ohio. This online cataloguing allowed libraries to share bibliographic records. During 1980’s library card catalogues were replaced with online catalogues. ‘Meanwhile, the advent of hard disks and random
access memories in microcomputers prompted the development of number of commercial products for handling bibliographic records and similar material.’ (J. L. Mac Lean, 1987).

Librarians began to select e-resources in the mid 1980s when CD-ROMs were offered on a subscription basis. Earlier many CD-ROMs were versions of paper products and the online indexing and abstracting databases were accessed through modems. ‘By the mid 1990’s many libraries had operational CD-ROM networks with many access terminals and many CD-ROM electronic publications’ (R. W. Boss, 1992). Medical Literature Analysis and Retrieval System (MEDLARS) was the first on demand search service database, with its online version MEDLINE. The first commercial online public database was offered by DIALOG. It was created by Roger K. Summit. Libraries could subscribe and access the services that were offered by these databases. Later full text articles began to be added to online bibliographic databases.

The emergence of Internet and WWW in early 1990’s provided many opportunities for the academic and scholarly communication and increasing popularity of the web on the Internet along with the support of multimedia became rampant. Information from various sources could be accessed at anytime from anywhere. It enabled easy transfer of multimedia information across the globe without any barriers of space and time leading to the emergence of e-resources.

There were dramatic changes in the selection of e-resources in library collections. Libraries collected materials in many electronic formats to support its universal collections. They established searching accounts with the early online database providers, conducted mediated searches and were charged for connecting time. They also facilitated access to various kinds of e-resources that are not maintained in its own collection.

1.4.3 Nature and Scope of e-resources.

The e-resources cover free internet resources and electronic resources purchased or licensed by the libraries from commercial sources, nonprofit organizations, professional organizations or any external institutions.
Electronic resources allow easy access to information. The features of 21 century electronic media are high compact storage, ease of production, multiplication, manipulation of contents from one media to another, ease of transmission, communication and storage. “The nature of e-resources is to serve as a supplement to the print collection. It strives to satisfy the information needs of the user with greater speed, accuracy and efficiency (P. Venkata Ramana, 2000).

The scope of e-resources includes the following features:

- Electronic resources are not localized.
- They can be used from anywhere by the user and need not know where it is geographically located.
- It can be used simultaneously by many users at the same time.
- It is easy to copy and download them in user file.
- It reduces the distance between the user and the librarian.
- It creates global marketing environment.
- They are less bulky, very flexible, easy to revise, rearrange, reformat and combine with other documents (Prabha Chandra, 2007).

1.4.4 Advantages of Electronic Resources

Electronic resources offer a number of advantages not only to libraries but also to users, authors, editors, publishers and archivists. An electronic resource offers many advantages like:

- They save enormous time by providing easy and instantaneous access without wasting time for processing, allows interactive facility and allows interaction between author, publisher and user.
- Facilitate easy duplication into new media, saves library storage space, provides hyperlinks to additional resources, allows remote access from anywhere at any time, enables simultaneous access to large number of users and eco-friendly.
- Facilitate easy search options, provides powerful search and retrieval capabilities.
• Allows remote access to resources from outside a single physical library, consolidates many volumes and years into one searchable file, inclusion of sound and video, reduces theft and mutilation.
• Manipulates and extracts the content, including formulae and graphics.
• Used by several people simultaneously, easy to export information to personal database.
• They save library space and staff time by reducing the costs of binding, storing and stack maintenance.

1.4.5 Types of Electronic Resources.

There are many approaches of categorization of e-resources such as by distribution medium (online, CD ROM, Web) or by content (bibliographic, full text) or by type of format (e-book, e-journal, database). For this study the approach of categorization of e-resources is based on type of classification used for print media which is most established and popular method of categorization, i.e. primary and secondary sources.

Primary sources: E-books, E-journals, Electronic Thesis and Dissertations (ETD).

Secondary sources: E-Course material, Indexing and abstracting databases, E-Reference databases.

Primary Sources

E Books

E-books are electronic versions of printed books. ‘Electronic book’ is a term coined by Van Dam of Brown University during 1960. The first E-book was published in 1985 in Germany.

The Association of American Publishers has defined “An e-book is a literary work in the form of a digital object consisting of one or more unique identifiers, metadata and a monographic body of content, intended to be published and accessed electronically.”
According to Davis (1997) an e-book is a written work readable on a computer screen, downloaded to a personal computer or digital assistant or placed on a reader designed for that purpose for professionally produced and edited text in an electronic format. Similar opinion was expressed by J. Mouw (1998) that an e-book is usually a collection of several digital objects or documents which in turn are packaged and formatted with the intention of being displayed on a hand held device or read by a speech generating application.

On the other hand the librarians’ view of e-books is “any piece of electronic text regardless of size or composition (a digital object), but excluding journal publications, made available electronically (or optically) for any device (handheld or desk-bound) that includes a screen.” (Arnstrong Chris & etal, 2002)

An E-book differs from a book in print as it requires some kind of electronic device to read. It is a commercial venture by trade publishers such as Peanut Press and Questia Media during 1998. It is encrypted so that it can be read on a single specific reader. An e-book reader is a portable electronic device that is designed primarily for the purpose of reading digital books and periodicals. In today’s market a variety of handheld readers are in use such as Kindle, Sony e-book reader, Wink etc. E-books formatted for one reader may not be usable on another reader. Different publishers provide their own e-book readers to access their e-books supplied by them.

E-books occupy a significant place in enhancing knowledge of the readers in general and research scholars in particular. An e-book utilizes the benefit of Internet by providing linking to other electronic resources and to other cross resource information across multiple resources. Mac Donald and Dunkelburger, (1998) expressed that E-books will become increasingly larger and more important part of the library’s collection because of the growing online and distance programme.

Aggregators offer e-books through variety of subscription based licensing models similar to that of serial subscription. Net library a division of OCLC provides more than 68,000 e-books to academic, public and corporate and special libraries.
There are organizations that work to address the e-book standards and interoperability. Association of American Publishers are working with Accenture on the Open E-book (OEB) Standards Initiative. This project recommends standards for publishers and authors in the area of digital rights management. It is an Open e-book Forum, an international trade and standards organization strives to establish standards and specifications for electronic publishing and e-book file and format standardization structure. Purchasing OEB-compliant devices are advisable. (Nancy Sprague & Hunter Ben, 2008).

There are many advantages of E-books. They are economical as they reduce the burden of making multiple copies of a book, easy to access from any remote location on the earth, longevity as they cannot be stolen or damaged, can be easily transported, provide multi features like animations and active illustrations, possess dual nature like they can be accessed both online and through CD-ROM. (Leo Appleton (2006) and Hamid R. Jamali & etal (2010)).

**E- Journals.**

The Glasgow University Library stated that “any journal that is available over the Internet can be called as electronic journal”.

E-journals are referred as “electronic publishing”, “electronic serials”, “online journals” and “electronic periodicals”. E Journals occupy a prominent place in digital libraries by providing access to online full text information. The dwindling library budget and growing number of journals forced libraries and information centers to form consortia for accessing E Journals. E journals are available as online journals through subscriptions as well as free of cost. They can be free, paid subscription, pay per use or licensed for access rights. They are electronically accessed using different technologies like gopher, ftp, telnet, e mail, list serve. According to Ulrichweb.com the total number of scholarly serial publications is as follows: (Source: Ulrich web www.ulrichsweb.com/ulrichsweb/analysis/).

“Academic & Scholarly Journals=94,687  
Academic & Scholarly Journals & Peer Reviewed=55,311
Academic & Scholarly Journals & Peer Reviewed in Print=24,430
Academic & Scholarly Journals & Peer Reviewed on online= 23,527”

Owing to this change, E-journals have received considerable attention from academic libraries. The e-journal consortia are fully operational compared to individual subscriptions of e-journals. E-journals consortium developed from the cooperation of participating libraries to share journals electronically. Some of the e journal consortia in India are UGC INFONET, FORSA (Forum for Resource Sharing in Astronomy and Astrophysics), CSIR- Journal Consortium (Council of Scientific and Industrial Research), ERMED of National Medical Library, HELINET (Health Sciences Library and Information Network), INDEST (Indian national Digital Library in Engineering Sciences and Technology Consortium) etc.

E-journals accommodate unique features like link to related articles or references, facilitate interaction, archival facility, easy retrieval, incorporation of multimedia contents, distribution and correspondence not limited by time and geographical boundary and lower subscription costs are some of the benefits that makes academic libraries to opt for this medium.

**Electronic Thesis and Dissertations**

An Electronic Thesis and Dissertations (ETD) are expressed in a form simultaneously suitable for machine archives and worldwide retrieval as well as its paper predecessor. It provides a technological advanced medium by any word processor for expressing ideas with less expensive, small space, easy handling, high longevity and never collects dust. At user’s choice they can be available to anyone who can browse World Wide Web.

There are databases of ETDs that caters to academic and scientific community. Eg

- Shodganga of INFLIBNET
- Vidhyanidhi.org
Secondary Sources

A good number of databases are available that provide access to reference/bibliographic/numerical and statistical information. For eg. many dictionaries, directories, almanacs, encyclopedias and other reference sources are available online in full text and also in CD-ROM formats. There are a number of reference sources available freely online. LISA, Pub Med, Dialog, OCLC First Search, Cambridge Scientific Abstracts, Ovid, EBSCO, World of Knowledge, Scopus are some of the useful indexing/abstracting databases. There are databases that provide economic and statistical data. Eg Census databases, Data base on Indian Economy, Asian Development Bank, Reserve Bank of India, Medical databases and GISTINIC.

Electronic resources must be selected, organized, preserved and disseminated from electronic repositories. As the selection of electronic resources in academic libraries is inherently more complex when compared to the traditional print resources they posed many challenges like access, format, security, interface, space, retention, technical support, vendor support and licensing.

The changing nature of information handling and provision is offering a dramatic impetus towards a reconsideration of issues in collection management. The age old collection management and collection development policies and practices need modifications and renovations to suit the current trend.

1.5 Collection Development and Collection Management.

The concept of collection development (CD) arose in 1950’s and 1960’s from the evolution of new and special needs in libraries to serve the increasing demands of the growing number of scholars and students. Specialists were hired to identify and locate needed resources and to make sure that the library was effective in getting the materials it needed. It was during this period CD started as a distinct function of librarianship distinct from acquisition. CD was called as the “premier function of librarianship”.

According to Encyclopedia of Library and Information Science collection development (CD) “is the sum total of library materials- books, manuscripts, serials,
government documents, pamphlets, catalogues, reports, recordings, microfilm reels, micro cards and microfiche, punched cards, computer tapes etc that make up the holdings of a particular library”.

The Harrod’s Librarian’s Glossary (1984) defines the term collection development as “The process of planning a stock acquisition program not simply to cater for immediate needs but to build a coherent and reliable collection over a number of years, to meet the objectives of the service”.

Collection development is a fundamental process in establishing and maintaining any library and information system without which no effective services can be rendered to the users. It is described as the process of acquiring books and non print media needed to satisfy the request for the information and to obtain systems objective.

The purpose of collection development is to find the users information needs, select, acquire documents that are useful, adopt a systematic and judicious spending on document collection, periodically review the collection and weed out unwanted materials from the collections. It aimed to develop a balanced collection that meets the objectives of the university library.

During 1970’s collection development as a specialty was traced by professional associations, conferences and institutes. Sometime during 1974-1979 the term collection management (CM) was coined in place of collection development (David L.Perkins, 1979). The Collection Development Committee of the Resources Section of American Library Association (ALA) developed a series of guidelines for the principle function of collection development. It has first published a series of “Guidelines for Collection Development”. Further in 1977 ALA organized a preconference at Detroit to work on this new sub discipline of librarianship. In 1979 it brought out a publication that has been revised and published several times with narrow foci in collection management and development. The outcome was that a significant change was recognized from the old concept of collection development to collection management.

According to Thomas E. Nisonger (2001) Collection management is the systematic, efficient and economic stewardship of library resources. It is systematic
because it is analytic and pragmatic. It deals with the functional programmes that follow institutional and library goals and objectives. It is economic as the resources are accountable to the library management, its user groups and to the parent institution. Paul Mosher (1983) expressed CM as “pre positional science” of librarianship.

Collection management involves selection, order, acquisition, budgeting, fund allocation, technical processing, storage access, maintenance. It also involves the management of human resources in performing these operations.

Resources and Technical Services Division, Resources Section and Collection Management and Development Committee of ALA have illustrated the eight functions of CM. (www.ala.org/alcts/resources/lrts)

- They are to prepare collection development policy statement.
- Allocate specific budgets that will optimize its effect on the user needs and demands of the users.
- Analyze and evaluate collections.
- Review collections for weeding and preservation.
- Conduct use and user studies.
- Study the effectiveness, economy and efficiency of CD and selection program.
- Determine the effectiveness of acquisition program.
- Establish cooperative collection development activities with other local or regional libraries.

Therefore for the purpose of this study on collection management is considered as a gamut of activities from collection building to the managerial aspects of the use of collection, storage, organization, circulation, information services, resource allocation and access to information.
1.6 Collection Development Vs Collection Management.

Collection management and collection development are two important complex activities in an academic library. They are used synonymously but have distinction. The relationship between the terms collection development and collection management has produced considerable discussions.


The librarians of the 1990s tried to make a distinction between collection development and collection management for eg Derek Law (1996) stated that “Collection Development relates to the selection and acquisition of material for an expanding collection and decisions on the material to be included in that collection. Collection Management subsume this, but also includes the allocation of book fund and the balance between books, journals and conservation; the disposition of stock between open and closed access, between different media, and between branches of the library dealing with the selection and library and stores; and finally the monitoring and encouragement of collection use. In sum, collection management also includes issues concerned with conservation and disposal, and is aimed more at the presentation of the collection to the user than at the collection itself.”

Similarly Jenkins Clare and Mary Morley (1996) opined that “Collection development is perceived as a concept more appropriate to earlier times of expansion in higher education and academic libraries. It implies building and growing, dealing with the selection and acquisition of library materials. Collection management is a more demanding concept, which goes beyond a policy of acquiring materials, to policies on the housing, preservation and storage, weeding and discard of stock. Collection management emphasis the systematic management of the planning, composition, funding, evaluation
and use of library collections over extended periods of time, in order to meet specific institutional objectives.”

Collection development and collection management are two complementary activities as referred by Dennis P. Carrigan (1995). They are neither synonymous nor the terms subsumes the other. Instead the activities dealt with collection management establish the terms and conditions for the patrons use of the collections and a return on the investment in the collection. But the activities of collection development determine the investment on the collection. Thus the activities of collection development are superior in importance to the activities of collection management.

Jutta Reed Scott (1984) opined that collection management is the systematic, planned, documented process of building, maintaining, and preserving collections. It provides effective tools to shape archival collections in the future. Specifically, it encompasses four components. Planning which is the most essential function in collection management, and the development of a written collection development policy is a crucial step in this planning process. A second important aspect of collection management is efficient selection or acquisition of needed materials. The third component of collection management is the ongoing evaluation and analysis of collections. Finally, fundamental to collection management is the concept of cooperative collection development and resource sharing. In summary, collection management aims to apply the basic components of the planning process to building and maintaining collections. It is a totality of activities like access, order and selection. On the other hand collection development focused on the building of collections and implies a process of continuous growth. Only in the past few years’ collection development evolved into collection management. Collection development has turned out to be a sub activity of collection management.

Therefore for the purpose of the study collection management is considered as a gamut of activities from collection assessment, selection, order, acquisition, technical processing, organization, storage, access, utilization, feedback and weeding out of irrelevant items while collection development is the activity confined to collection building, selection, order, and acquisition.
1.7 Changing Perspectives of Collection Management Functions.

Collection management is a key activity within the university library. It is an indicator of great importance which determines the quality of library collections. It is an essential aspect for the optimal function of its information services. Its functions include:

1.7.1 Collection assessment.

Collection assessment requires that the collection be measured, analyzed and judged according to specific criteria for relevancy, size, quality and use. It encompasses analysis of both the library collection and its use. Assessment serves many purposes. It aids in understanding the extent to which the collection meets the goals and mission of the library. It should be well planned, continuous and systematic. At present e-resources are creating new challenges for collection assessment.

Collection assessment can be defined as the systematic quantitative and qualitative measurement of the degree to which a library’s collections meet the library’s goals, objectives and the needs of its users (Peggy Johnson, 2004). It is an organized process of describing the state of library’s resources and their effectiveness at a particular time.

The primary goal of collection assessment is to increase selector’s knowledge about the collection. Knowing the collection is selector’s responsibility to measure its success and to manage it effectively. Collection assessment leads to this knowledge. Libraries should seek new techniques and design new approaches to measure the breadth, scope, depth of coverage use and use techniques to access e-resources.

Traditionally libraries have gathered qualitative and quantitative techniques for collection assessment and evaluation. It covers a number of different activities. Proper assessment of collection involves a comprehensive description of the library’s resources at a particular point of time. This description should include not only an assessment of the past and present collection strengths but also an assessment of the future collection strengths of the library. The data like circulation statistics, title count, median age of item, shelf observation by subject experts, holdings checked against standard lists/
bibliographies, inter library loan requests, user surveys and focus groups provide the necessary information that is needed concerning the library collection assessment (Vicki L. Gregory, 2000).

P. Ferguson (1997) has listed some standard data collection assessment sources used to obtain relative easy measures to assess and evaluate e-resources. They include scripted user surveys/ assessments, transaction log or Web log analysis, network usage analysis, content analysis, focus groups and case studies.

The International Coalition of Library Consortia (ICOLC) has identified the statistics and the obligations of remote resource providers to supply the use statistics of e-resources. In 1998, it published Guidelines for Statistical Measures of Usage of Web Based Information Resources and revised in 2001. These statistics permit libraries to analyze use within the individual library and compare with others. The Association of Research Libraries (ARL), USA started an initiative called E-Metrics to address the need to measure e-resources. An international initiative of librarians, publishers and professional organizations established Counting Online Usage of Networked Electronic Resources (COUNTER) to develop an international ‘Code of Practice” governing the recorded and exchanged usage of online data. It has developed a plan for the ongoing implementation, upgrading and extension of this code. Thus assessment and evaluation of electronic resources is a new and growing area of interest for university libraries. The increasing array of e-resources emphasized the need for conducting collection assessment and in determining the effectiveness of a library’s electronic and printed resources. By using any of the above strategies the librarian should effectively assess the effectiveness of its dual collection.

Collection assessment techniques may focus on the collection, or on collection use and users. Each technique has its own advantages and disadvantages. Using two or more approaches provides a complete understanding of the collections and serves to validate findings.
1.7.2 Collection Development Policy.

Collection development policies are viewed as blueprints for the operations of the library as a whole, through these policies the library carries out its central task of acquiring, organizing and maintaining library materials. These policies set up the general framework for establishing the library’s goals, in terms of both new acquisitions and the maintenance of the existing items in the library collections. They are usually written and developed by libraries with two audiences in mind namely the library staff and the broader community of library users.

The ALA (1987) defines Collection Development Policies as “documents which define the scope of library’s existing collections, plan for the continuing development of resources, identify collection strengths, outline the relationship between selection philosophy and the institution’s goals, general selection criteria and intellectual freedom.”

In 1970s most libraries began establishing written CDP for printed collections and for some audio visual materials. Today e-resources are becoming such an integral part of a library’s resources that CDP need to be rewritten significantly or amended to take these resources into account. CDP is a combination of descriptions of practices, guidelines for decisions and provisions intended to protect against unwarranted pressures to acquire, to eschew the acquisition or discard certain types of materials.

Traditional CDP have served a number of purposes like informing, directing and protecting library processes in acquiring, protecting the library against the challenges and making resources available to users. The major provisions listed in the The American Library Association has described that traditional CDP are intended to

“Describing the library user community, defining their institutional mission of the library and identifying its user needs. Provide selection criteria and guidelines for the selection and use library materials. Identify those selection tools and processes that are most appropriate for particular library. Define the process for identifying materials for weeding, cancelation, storage and replacement of materials. Establish responsibilities for the various aspects of the collection development
process and collection management activities. Create a plan for the future collections and budgeting of resultant library expenditures. Serve as a training document for new collection development librarians and other staff who are in charge of the overall management of the library. Provide guidelines for gift materials. Provide guidelines for dealing with complaints about materials or services. Support cooperative collection development activities by documenting and identifying both the strength’s and relative weakness of the library’s current collections. Aid to provide grant proposals and planning development initiatives through its supporting documentation. Serve as a communication vehicle for library’s staff, administration and its various constituencies. Protect intellectual freedom. Provide a clear and carefully described rationale for library’s collection goals and practices. Protecting the library from pressures to acquire or provide access to inappropriate or irrelevant resources”.

A CDP that encompassed electronic resources includes some additional and unique issues. The Collection Development and Evaluation Section of ALA’s Reference and user Services Association has addressed on e-resources collection policy issues as follows:

“Cancel or retain of print resources when the electronic version of the resource is available. Provisions of or limitations on remote access to electronic resources owned or licensed by the library. Justify new costs that include the costs of hardware in addition to the cost of the material. Identify the location of resources and the cost of maintaining appropriate Internet and other network links. Possible duplication of certain e-journals or databases based on the purchasing bundles available from different electronic information aggregators. Negotiate terms of licenses in use of materials. Cancellation problems which include whether the library loses all rights to materials previously licensed once cancellation occurs. Train staff and users in the use of particular new electronic resource. Access and organizational issues concerned whether to catalogue Internet available items or electronic
bundles of resources. Co-operative collection development issues such as the ability to provide copies on inter library loan.”

There are many libraries like University of Iowa Libraries (www.lib.uiowa.edu/collections/policy.html), Florida Atlantic University Libraries(www.fau.edu/library/cd_fau.htm), State Library of North Carolina (www.dcr.stste.nc.us/hottopic/pubacc/pubacc), Carnegie Library of Pittsburgh (www.clpgh.org/clp/policy/), and American Library Association (www.ala.org/oif/internet.html) have developed “separate” or “integrated” policies and “acceptable use policies” that are specifically intended to cover the acquisition and maintenance of electronic resources. An integrated CDP that includes all types of resources is advocated as the best approach.

The Collection Development and Evaluation Section (CODES) of ALA’s Reference and User Services assembled a set of standard collection policy elements for e-resources. It served to coordinate the development of collections in print, non-print and e-resources, handle contracts, licenses and purchase of rights to access remote digital resources.

CDPs have always provided a focus for library’s collection and are very essential for e-resources as they have been for traditional print materials. CDP written purely for the print environment in mind will not be of much use in the selection and management of e-resources. The old policies are have to be revised in favour of new approaches that keep the goals of those policies alive but reflect the realities of the electronic information environment.

1.7.3 Budgeting and fund allocation

Budgeting is a traditional planning process through which many programme planning decisions are made. Library budget is a complex factor as libraries are not for profit organizations.

According to Gorman (1991) academic libraries generally follow any one or a combination of the following approaches for the selection and funding of e-resources.
“All purchases of electronic products and subscriptions are taken from the general materials budget of the library. Some libraries set aside a certain percentage of the materials budget for electronic resources. Some libraries allow a portion of their materials budget to cover hardware costs or processing costs including software costs. Some libraries require purchases of electronic products through team selection or at least with a check off system so that a review of the product is made before it is selected for purchase.”

The literature surveyed indicates several models to subscribe and access e-resources. The methods have been summarized below:

- **Subscription –Based**: This pricing model is based on an annual subscription cost. If the library subscribes to the print version of the resource the electronic version of the resource can be accessed at no additional charge.
- **Electronic-Plus- Paper**: If the library subscribes to the print version there may be a small additional charge for the access to the electronic version.
- **Electronic–Only Subscription**: Some publications are only available electronically and they carry their own cost for subscription.
- **Additional Pricing Model**: Some of the electronic versions are available without subscriptions to print version, at the same subscription cost as the print product.
- **Some publishers and aggregators operate on “pure bundling” model where a library or consortium must license the entire lists of their journals with no individual selection possible.**
- **Access Based Pricing Models**: Some publishers price their products according to the number of simultaneous access by users or port purchased. The publisher limits the use of its product to x number of users at one time.
- **Site Licensed Based Pricing Model**: It allows unlimited access with no restrictions on number of simultaneous users. It is cost effective if use is expected to be high.
• Pay Per Use Access Model: Some aggregators of electronic journals and databases offer a pay-per-view option that allows users to enter an account already established or a credit card number to access articles from journals that are not for subscription.

• Subscription supplemented by Pay-Per Use Model: It includes subscription of core collection of material with a supplemented pay-per-use arrangement for other content.

Consortia Purchasing

As electronic resources are more expensive than print, libraries are coming together for joint purchase of electronic information resources like e-journals and databases. To some extent it has reduced the financial crunch on academic libraries. This led to the formation of consortia approach. The cost is spread over a number of member libraries so that there is substantial savings. The electronic consortium initiatives introduced in India are FORSA Consortium (Forum for Resource Sharing in Astronomy), CSIR Consortium (The Council of Scientific and Industrial Research), INDEST Consortium (Indian National Digital Library in Engineering Sciences and Technology) and UGC Infonet Consortium etc.

1.7.4 Acquisition Program

Collection development and acquisition programme have always been closely coordinated in library and information centers. They depend on the objectives of the library and its parent organization. The acquisition program consists of the following activities like book selection, book order, book acquisition, accessioning, technical processing, storage and maintenance.

Selection

According to J. Feather and Sturges P (1997) “book selection is one of the most important techniques with which librarianship is concerned for it is the book stock that gives a library its character and more than its staff and buildings”. In the opinion of Melvil Dewey the motto of book selection is “best reading for the largest number at the
least cost”. S. R. Ranganathan’s five laws of library science explain the importance of book selection. His first three laws underlined the concept of how a library collection should be. His first law states that “Books are for use”. It makes the library obligatory to select the books that are of use to the library users. Second law states that “Every reader his/her book” emphasized the need for keeping in mind the user’s requirements while selecting books for the library. Third law states that “Every book its reader” suggested that every effort should be made to put to use the collection for the benefit of its readers. Francis. K. W. Drury out of his rich experience stated that ‘the high purpose of book selection is to provide right readers with right book at right time’. The selection of electronic resources continues to be trouble shooting for many libraries. Selection’s in today’s libraries covers a number of new technical and cost factors.

Access Vs Ownership

Vendors offer bundle or package a number of resources, titles, or images that have an impact on the selection process from title by title selection to an aggregate approach. These developments have occurred at a surprising speed and took the form like ownership versus licensing of resources and many implications for restrictions on the fair use rights of users. (George, Vicki. 2007)

Licensing

One of the key issues that a library considers in acquiring any new electronic resource is about the purchase of the resource or only obtaining the copyright and licensing issues to use it. Many of the traditional fair use rights that libraries have enjoyed for print materials are no longer assured in the new electronic age of information. Today dealing with licensing agreements for e-resources have become unavoidable for acquisition librarians. As the number of available databases rapidly increase the variety of licensing restrictions and special clauses applicable to them seem to grow at a more rapid rate. The Digital Millennium Copyright Act, passed by U.S. Congress in 1988 contains a number of new restrictions in regard to e-resources. The U.S. copyright law codifies the fair use doctrine in general terms referring to permissible purposes or uses as criticism, comment, news reporting, teaching, scholarship or research. In India the
copyright Act (amended 1994) included copyright issues of e-resources. The global community responded to the challenges posed to copyright system especially by the internet through treaties framed in 1996 called WIPO Copyright Treaty (WCT). The treaties addressed the challenges relevant to the dissemination of protected material over digital networks such as the internet. It extended protection for the authors of literary and artistic works. It addressed the challenges posed by digitization of works and internet. There are many other provisions in this treaty like right to communication to the public.

Vendor Relationship

Librarians have to deal with vendors’ for Web accessible databases and journals, sign a license agreement with a publisher or distributor before being able to access the resource. The basic librarian/vendor relationship form is products and standards where librarians and vendors collaborate to improve service to library patrons. These license agreements vary widely from different vendors and are not standard and predictable. Vendors should invest a considerable amount of time in establishing and maintain personal relationship with libraries. Decisions to work with particular vendors and publishers should be made objectively, to ensure that the fairest prices and best practices are obtained on behalf of the library’s users. (Holden, 2010)

Association of Research Libraries, USA have described standards that provide better understanding of the issues raised by licensing agreements in the digital age.

Digital Library Federation-Electronic Resource Management Initiative (DLF ERMI) (2007) was established to define all activities and concepts especially to have better control over licensing of online collections and other related issues related to e-resource collections. In 2004 it became a de facto standard for development of electronic resource management systems. The major objective of its report specified data elements, functions and interrelationships between elements. In the second phase it developed standards for license expression, usage statistics, description that became de facto standard for building a systematic approach to license management. The major features outlined in its report dealt with administrative and management of license agreements along with internal processes associated with licensed electronic resources.
Thus acquisition of electronic information has changed the traditional roles played by state holders. Acquisition of e-resources requires the librarian to work closely with the vendors of e-journals and databases.

1.7.5 Resource Sharing

Another 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
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.

1.7.6 Technical Processing

The technical processing is an important aspect of collection management. Cogswell (1987) quotes that for sometime CM has been gravitating away from the technical services sphere where it historically grew out of the library’s role as a processor of faculty book requests in a conscious effort to be more responsive to changing user needs. It involves the processing of materials for easy retrieval among library users. This requires classification, cataloguing of documents that are housed in the library for efficient and effective retrieval and use by the library users. It also involves the creation of bibliographic databases.

Levels of organizing e-resources

The main goal of Technical services in the past and the present is its efficiency. According to George Vicki (2000), libraries pass through five phases or levels of organization in implementing access and organizing of electronic products from initial no formal organization to full MARC cataloguing of the items. He described the five levels as follows:

“*In the first level there is no organization. The library simply offers users open web access. In level 2- Web-bibliographies are complied by the library. These links are hyperlinked on a computer page to provide a method of taking user directly to the recommended website. In level-3 Web-bibliographies are supplemented with addition of metadata to selected web resources that are housed on a local server to facilitate retrieval. These resources may be searched from the library website or from the electronic catalog. In level-4 libraries catalog the physical items purchased but remotely accessed resources are also linked through the library website. In level-5 libraries apply MARC cataloguing to electronic or web resources. Libraries in level-5 follow one of these approaches.*
• **Catalog all those electronic resources that are either owned by the library or maintained on its local system.**

• **Catalog those significant resources that are anticipated to be heavily used by local patrons or library staff**

• **Catalog all items identified by subject specialists that fit the collection development policy of the library.**

Cataloguers have taken an active role in organizing and providing pathways to electronic information.

1.7.7 Access

Metadata is more popularized to describe data elements in electronic format. Using e-resources involves controlling access to licensed databases or resources. Controlled access involves a two step process. First process involves the “authentication” of users to access e-resources. Once users are authenticated they would be able to use all e-resources regardless of where they are physically located.

Publishers have set up and developed a number of standardized ways of allowing remote access to their users. These methods include

• **IP Access-** Database and electronic journal vendors allow IP authentication for a specific range of IP addresses.

• **Generic Passwords based approach-** Allows users to use numbers or codes that are standardized for a particular organization. This approach is effective when resources are licensed for use by a consortium.

• **User account coupled with IP source detection.**

• **X.509 certification that gives a particular machine the right to use a particular name.** The name is verified by checking the ‘certificate authority’.

• **Proxy Server:** It is a computer that offers a computer network service to allow clients to make indirect network connections to other network services.
- Virtual Private Network (VPN): A proxy server is capable to connect a remote user with specified resources, but in some cases distant offices and remote users are required access to the institutional network as if they are actually, physically on the institutional intranet.

- Athens Authentication: A method for individual libraries in a consortium to create, manage and terminate their own user accounts, allow users to select and change their passwords and give user access to both consortium and locally owned resources.

- Shibboleth: It is an access authentication system based on EZProxy. It is a standard–based open source middleware that provides Web single sign-on (SSO) access to subscribed e-resources across or within organizational boundaries.

Providing access to e-resources facilitated easy retrieval to the library user but created many challenges to the collection development librarian. They have to consider the various access licenses that involved significant ongoing obligations like access given to anyone who access the library through Internet, only to onsite user, only to anyone who comes into the library, access permitted for offsite users, access provided at different access nodes located on the campus, permission to print, copy or download from the resource, number of copies permissible, permission to make copies of the e-resource for inter library loan purpose, right to archive the material and termination of license agreements.

Therefore it is observed that the nature of acquisition work changed significantly from traditional to electronic environment. Electronic information resources that have been selected by the library need to be organized for easy retrieval and access by users, for which access management must be addressed from the user’s perspective.

1.7.8 Organization and Staffing

Staffing is the availability of staff to assist users to use the collection. The availability of manpower to carry out the collection management operations is very
crucial. In academic libraries a separate department for collection development is established. It is headed by a section officer.

Assistant Librarian (Acquisition) reporting to the Deputy Librarian. He is in charge to make budgetary requirements essential for coherent, coordinated collection development and management. Under the Assistant Librarian the library assistants and Technical Assistants will perform each operation like book order, book accessioning, classification, cataloguing, file management and stock maintenance. The nomenclature of designations may vary but the hierarchical structure is more or less the same.

Changing dimensions of Acquisition Librarian:

In the present digital environment the acquisition librarian’s role and responsibilities have changed. They are designated as systems librarian, electronic systems librarian, network services librarian, data base coordinator, network coordinator and electronic information service librarian. Their primary responsibilities are installation of the necessary computer hardware and necessary software for access, preliminary license negotiations, coordinating the electronic services of the library, and evaluating and recommending e-resources. They must involve in the process of providing access to locally held and online e-resource collections of the library. They should ensure that licenses for electronic materials carry only those provisions that the library and its users find easy and effective. They must become more familiar with and skilled at negotiating. They should also be prepared for reject offers and terminate negotiations if no reasonable solution is possible.

Shreeves(1992) considers the collection development librarian primarily as gatekeepers who identifies that portion of the universe of information resource that is of great value to a group of users. Such gatekeepers are indeed more important in the near future than they are today.

Therefore the growth of electronic resources forced librarians to become more collaborative consulting the other librarians and specialists throughout the selection and implementation process. They need to maintain a high degree of flexibility in the era of electronic resources and call upon all their technical, service, professional and human resource skills if they are to thrive in this new and rapidly changing environment.
1.7.9 Preservation

Preservation is an essential part of collection management in large academic libraries. The advent of electronic information resources has changed the nature in which preservation strategies are carried and implemented.

It encompasses activities intended to prevent, retard, or stop deterioration of materials or to retain the intellectual content of materials no longer physically intact. P. Conway (1996) describes preservation as a part of librarian’s stewardship responsibilities ‘the preservation of the human record to ensure that the future generations know what we know’.

Libraries should strive to preserve almost everything that is communicated like computer conference logs, electronic serials, archived exchanges of electronic mail transmissions that may be appropriate for a library to acquire and preserve given sufficient interest on the part of the user community (Summerhill, 1991). The increased availability, use and popularity of e-resources over past two decades have affected remarkable changes in access to information. Archiving of digital information resources is more like an elephant in the middle of the room. Standards for archiving or perpetual access clauses appear in licenses but digital preservation is one of the most vexed issues faced by librarians. Some of the most prominent issues related to preservation of e-resources are as follows

Digitization

The library, archives and museum communities were quick to embrace digitization as a tool for building electronic collections. In 1997, Research Libraries Group (RLG), USA contracted with Cornell University, USA to produce a series of tools designed to assist member institutions with issues related to digital imaging projects. Working groups were formed to develop best descriptive practices for high quality digital images within machine readable cataloguing (MARC) records. This resulted into Guidelines for Digital Imaging, addressing issues such as selection of collection, preparation of materials, digital image capture, approaches to preservation metadata.
Digital Preservation

By early 1994, a great deal of information was already available digitally and even at its early stages, the WWW started changing the modes of information delivery. By 1997, many libraries had acquired large amounts of digital materials through several different channels including publishers, distributors, legal deposit or transfer, donations and licensing access to online databases.

Preservation, storage and de-selection of print and e-resources should consider the changes in approach that developed over the last ten years. It conveys that every university library must make decisions appropriate to its own institution and no outside group can give specific criteria for the actual decisions to be made within the library. The second major aspect is given to preservation review as it is an essential element in a collection management.

There are a number of issues relating to collection management of electronic information resources like identifying the resources, uninterrupted online access, perpetual access to back issues, pricing, licensing, subscription payment, copyright and archival solutions etc. It is important that university libraries pay more attention to collection management of electronic information resources to establish themselves as new era professionals.

1.8 Need for the Study.

Not a week passes in university libraries without the additions of e-resources. Growth is not restricted simply to printed books but also to online versions of print equivalents, bibliographic databases, e-journals, e-books, image galleries, multimedia reference works and numeric data resources. They have made remarkable growth in academic library collections.

University libraries are acquiring materials in digital form organize and provide access. This has opened new vistas to study their existing collection management practices. This rapid and sustained growth of electronic collection presents challenges for both users and library staff.
The need of the hour is to integrate electronic resources with the traditional print format. Librarians need to understand the file formats, their procurement like related hardware, software, their methods of access, availability of suppliers, publishers, vendors who provide onsite installation, regular upgradation, post installation support, user manual, their functional and technical requirements, contract negotiations, pricing policies, licensing, legal agreements, archival policy so that they can explore and evaluate them with the same criteria and rigor applied to all collection decisions.

How the existing university libraries changed their approach in the selection, acquisition and preservation of scholarly information that is published and maintained by electronic methods is a matter of interest. Did they incorporate new collection development policies for the acquisition of electronic information resources? Have the university libraries modified their collection development policy to include digital content in their collection. Though all the selected university libraries in Andhra Pradesh have electronic collections along with print, wide gap prevails in their organization and management of both print and electronic resources. This has posed several questions on how effectively our libraries providing access to the dual collections as they are preoccupied with the impact of electronic information on library operations, collections and services.

The present study is a probe into this specialized area of library collection management function. It concentrates on the major steps, processes and issues to be confronted in dealing with the incorporation of electronic resources into an academic library collection. It is important to understand and develop sound theoretical and operational knowledge about collection management of e-resources. Its role in acquisition of licensed e-journal databases and its impact on library print collection and its users. This study will certainly bridge the gap in existing studies and further make understanding deeper on the subject of collection management of electronic information resources. In a much needed manner.
1.9 Statement of the Problem

The phenomenon of collection management of electronic information resources among university libraries in India is still a recent development. There is a need to study the various models, guidelines and procedures and collaborative approach towards access to e-resources.

The literature review indicates that no exhaustive work on the topic has been done stating the general guidelines, policy, licensing principle of e-resources, access and use of e-resource by university libraries in Andhra Pradesh. In the light of the above facts a need has been felt to undertake the research on the topic- “Collection Management of Electronic Information Resources: An analytical Study of selected university libraries in Andhra Pradesh.” This study will enable to learn all the important aspects of collection management of e-resources management in greater depth and its impact on the overall economy of university libraries’ collections to reap the benefit of electronic resources.

1.10 Operational definitions of terms used in the Statement.

Some of the key terms and concepts which form a part of the study have been defined as follows:

**Collection Management:** It is the development of collection and the related managerial aspects like budget planning and control, staffing, maintenance of library collection, application of conservation methods, keeping balance between various types of materials, keeping coordination with other departments like processing, reference, circulation, using performance measurement and performance indicators as well as monitoring for best utilization of library materials.

**Electronic Information Resources:** These resources refer to those materials that require computer access and may either be locally mounted or accessed remotely via the Internet.

**University Libraries:** Libraries attached to the highest level of learning and education. It is considered as the “heart” of the learning community providing a place for
students and faculty to do their research and advance their knowledge. They vary in their size of collection ranging from few hundred thousand to more than 10 million volumes.

1.11 Research Design.

Research design indicates the layout followed in a study. It explains the aims, assumptions, scope and research methods. The study is planned and carried out as follows:

1.11.1 PROBLEM SPECIFICATION

The topic proposed for the research work is ‘Collection Management of Electronic Information Resources: An Analytical Study of Selected University Libraries in Andhra Pradesh’.

An attempt made to examine how far the university libraries of higher academic institutions have been fulfilling in providing optimum access and utilization of their resources with special focus on e-resources. A survey was conducted to find out whether these libraries are fully equipped to select, manage and organize the breadth of responsibilities in collection management for both print and electronic resources. Further opinions of faculty and research scholars are sought with regard to nature and scope of the existing collections and services rendered in their libraries.

1.11.2 OBJECTIVES OF THE STUDY

The study primarily aims to know about preferred collection management activities carried out in selected university libraries. The ultimate purpose of resources is their utility. Hence, it is intended to study the use of e-resources by the users. The specific objectives related to the present study are as follows:

- To probe into the changing dimensions of collection management practices with focus on electronic information resources.
- To evaluate the existing system of collection management practices with reference to print and electronic information resources.
- To explore, identify, access and analyze the specific factors that promotes or hinders the contemporary use of print and electronic information resources by the users and faculty.
- To find out faculty and research scholar’s view point on the adequacy of print and electronic resource collection of their university libraries.
- To suggest measures for the improvement and management of existing library system for the effective building of collections particularly in the use of e-resources in the present electronic environment.

1.11.3 HYPOTHESIS

For the present study the following hypotheses are proposed and tested:

**Hypothesis 1:** All university libraries have a collection development policy that is revised keeping in view the electronic resources.

**Hypothesis 2:** The university libraries are striking balance between print and electronic resources, specifically the periodicals.

**Hypothesis 3:** The libraries opt for consortial subscription of e-journals owing to its economic value. The consortia are well structured and libraries do not have any problem.

**Hypothesis 4:** The faculty and research scholars of universities under study are familiar with e-resources and prefer to use them for research, publication and teaching in that order.

**Hypothesis 5:** The user community prefers e-journals over other e-resources and prefers them for their currency and easy access.

**Hypothesis 6:** The users always retrieve relevant information from consortia based e-journals and are satisfied with available consortium.

1.11.4 SCOPE

There are 34 universities in the state of A.P. However the scope of the study includes six university libraries of Andhra Pradesh, each university specialized in one of the fields of agriculture, health sciences, law, technology, one state and one central university that offer conventional courses. It is a heterogeneous sample. The present
study has been carried out taking a sample of the following six university libraries arranged chronologically according to their year of establishment.

1. Dr. V. S. Krishna Memorial Library, Andhra University, Visakhapatnam.
2. ANGRAU Central Library, Archarya, N. G. Ranga Agricultural University, Hyderabad.
3. University Library, Jawaharlal Nehru Technological University, Hyderabad.
4. Indira Gandhi Memorial Library, University of Hyderabad, Hyderabad.
5. Dr NTR UHS Library, Dr.NTR University of Health sciences, Vijayawada.
6. NALSAR Library, NALSAR University of Law, Hyderabad.

The study has been confined to the above six universities located in the state of Andhra Pradesh.

1.11.5 METHODOLOGY

Survey method has been followed to collect data owing to its inherent advantages with questionnaire as the main tool for data collection. Questionnaire was administered to all the librarians of the six universities. In addition a separate questionnaire was devised for the faculty and research scholars of university libraries. The investigator made personal visits to the six university libraries to distribute the questionnaires and to observe the prevailing conditions. Dr. NTR UHS offers only part-time Ph. D programme. Hence questionnaire was mailed to the part time research scholars as they were residing at different regions of the state.

The data thus collected from the librarians, faculty and research scholars has been analyzed using Software Package for Social Sciences (SPSS version 16.0) and presented in suitable tabular forms for each facet on which the information was solicited and conclusions were drawn from them. Separate tables were prepared for different aspects which were supplemented by figures, graphs and textual presentation.

1.12 Organization of the Study

The entire study is presented in six chapters. A brief outline of each chapter is given below:
Chapter I: Forms the introduction (present chapter) of the thesis and presents the impact and proliferating types of electronic resources in library collections. An overview of the changing dimensions in the organizational functions of collection management that have occurred in university libraries due to electronic information resources has been presented. It further mentions the need for the study, statement of the problem, scope of the study, operational definitions of basic terms used in the study and research design.

Chapter II: Covers the review of earlier studies conducted on collection management in university libraries.

Chapter III: A brief description about the selected universities and a detailed profile of the concerned university libraries is described.

Chapter IV: The data obtained, on electronic information resources management from the six university librarians is analyzed, summarized and results discussed.

Chapter V: The data gathered on user survey on the use of both print and electronic collections and services are analyzed, draws observations and the results are presented.

Chapter VI: Recommends suitable suggestions for enhancing the collection management of electronic information resources along with print information sources
REFERENCES


www.ulrichsweb.com/ulrichsweb/analysis/

www.ala.org/tools/atoz/

www.ala.org/alcts/resources/lrts)