Chapter 3
An Introduction to Periodicals
CHAPTER-3
AN INTRODUCTION TO PERIODICALS

3.1. INTRODUCTION

Periodical is a primary source of information. Primary sources of information are the first published records of original research and development or description of new application or new interpretation of an old theme or idea. These are original documents representing original ideas and constitute the latest available information. Researchers produce new information can make it available to the community through the primary sources. Periodical article is the main medium of communication for the exchange of scientific information.

The development of any subject is depends on the new knowledge produced by Research and if it flows freely, speedily and timely among the scientific and technical community. The increased rate of scientific discoveries with the rapid application of Technology has added greater necessity in disseminating research results among Scientists and Engineers. The literature is generally published as periodical articles since periodicals are the best available sources among the primary communicating media for exchange of scientific results. The importance of periodical publication increases as the necessity for going deep, pinpointed and up-to-date knowledge increased.

The periodicals are not only the chief medium for disseminating current information but also served as an important part of a library collection. These are helpful in fulfilling both the objectives of teaching and research of an organisation. University and Research libraries usually spend more than 70 percent of their total budgets on the subscription of periodicals only. Periodicals, a source of current information have become necessary these days because the results of research being done in different parts of the world are communicated through them (Ravat & Kumar, 2002).

3.1.1. Periodicals: Definitions

A Periodical is a publication such as a magazine, journal or newspaper. They are called Periodicals because they are published at periodic intervals, i.e. daily, weekly, fortnightly, monthly, quarterly, or yearly. They are extremely important sources of information.
Some definitions of periodicals are as follows:

**Glossary of Library & Information Science** defines “A periodical is a serial published indefinitely at regular or stated intervals, generally more frequently than once a year. Each issue is numbered and/or dated consecutively and contains articles, stories or other writings. Journals, Magazines, Newspapers and Periodicals publication in a continuous series, with a consecutive number and no predetermined end, as distinct from a single work in several parts” (“Periodical”, 2004).

**Harrod’s Librarians Glossary and Reference Book** defines a periodical as “A publication with a distinctive title which appears at stated or regular intervals, without prior decision as to when the last issue shall appear” (“Periodicals collection”, 2005).

**Encyclopaedia of Librarianship** defines a periodical as “A publication issued at regular intervals, each issue normally being numbered consecutively and usually dated, within foreseen and to the sequence as publication” (“Periodicals”, 1966).

### 3.1.2. Related terms of Periodicals

#### 3.1.2.1. Serial

A Serial is the broadest term for Periodicals, journals, magazines, newspapers and Annual publications. Serials are publications issued at intervals over a period of time in successive parts bearing numeric and chronological designations that are intended to be continued indefinitely. They include periodicals but also proceedings, annuals and irregular publications. The terms serials, periodicals, magazines and journals are often interchanged, and their distinctions are not always cleared. Periodicals are publications that are issued frequently at regular intervals. They include magazines, journals and newspapers. The distinction between magazines and journals is small but can be important. Generally magazines are regarded to be of popular interests. Newspapers are different from other current event magazines, except that some come out daily, and come in the familiar news print formats (Tan, 2009).

#### 3.1.2.2. Periodical

It is a publication which appears indefinitely at regular or stated intervals; generally more frequently than annually, each issue of which is numbered or dated consecutively and normally contains separate articles, stories, or other writing.

#### 3.1.2.3. Journal

A Journal, especially one containing scholarly articles and/or disseminating current information on research and development in a particular subject field.
3.1.3. History of Scholarly Journals

A major thrust to the origin of scholarly journal was the founding of the national academies devoted to the study of science. Between 1635 and 1752, at least 11 such academies were founded in Paris, London, Bologna, Berlin, Lyons, Milan etc. Perhaps the most famous of these is the Royal Society of London, founded in 1645 and officially charted in 1662. At the beginning of the seventeenth century, written scientific communication was primarily through books and gazettes. By 1660 the men of science recognised that they were dependent on private correspondence to keep abreast of the new knowledge being discovered throughout the world. From the mid seventeenth century the device of the scientific paper had not yet been invented and men did not publish until they though had mastered completely some whole department of science and could produce a definite book.

The origin of the modern University, the experimental methods widespread adoption by scientists and the development of a dependable European postal system were other factors during the sixteenth and seventeenth centuries that helped by the ground works for scholarly journals. On January 5, 1665, a weekly publication called Journal des Scavans, considered the first true scholarly journal by many authorities began in Paris under the direction of Denis de Sallo. Osborn reported that the first issue’s preface stated five objectives, including listing major European books, publishing obituaries, recording advances in the sciences, and citing civil and ecclesiastical court decisions. In its early years, the primary emphasis was on the listing and reviewing of books. Publication was suspended during the French Revolution in Dec. 1792. When publication resumed in Aug. 1816 the periodical was renamed Journal des Savants. In March 1665, the Royal Society of London began publishing a monthly periodical titled Philosophical Transactions. Giving some account of the Present Undertakings, Studies and Labours of the Ingenious in many considerable parts of the world, edited by Henry Oldenburg, subtitle was dropped after a short time.

In 1684, an academy in Holland issued Novelles de la Republique des letters. Memoirs of the Academy of Sciences in Russia began in 1728. Benjamin Franklin founded the Transactions of the American Philosophical Society in 1771 yet many of the journals founded during the 17th & 18th century ceased existence after a year or two (Balakrishnan, 2000).
Although, the first periodicals disseminated scholarly knowledge, periodicals whose chief purpose was to entertain emerged during the late seventeenth and early eighteenth centuries. Davinson names *Atlantic Mercury* founded about 1690, and *Ladies Mercury* began a few years later, as the earliest popular periodical. The *Gentleman’s Magazine* founded in 1731, was supposedly the first periodical to use the word magazine in its title.

Veaner cites as examples of early disciplinary journal *the transactions of the Geological Society of London*, founded in 1811; *the memoirs of the Royal Astronomical Society*, which began in 1825, and the *Chemical Society’s journal* started in 1848. Moreover, by the mid 1800s most journals were aimed at specialized audiences of scientists and trend that has intensified in the 20th century.

The year 1831 was declared as the golden age of periodicals. Periodicals were found to be very useful in every field. Sects and parties, generous societies, and creative individuals all have their periodicals. Science and literature, religion and law, agriculture and arts, have preferred periodicals the best mode for enlightening the public mind.

### 3.1.4. Types of Periodicals

According to Grogan (1973) periodicals can be divided as primary and secondary journals. The primary journals devote themselves to report the original research and are also known as ‘recording’ journals. They form the foundation of scientific and technological literature, e.g. *Biochemical Journal, Journal of Physiology, Journal of Mechanical Engineering, Molecular Physics*. The secondary journals on the other hand, interpret and comment on the research reported in the primary literature. They are called ‘newspaper’ journals, but they make up a far more heterogeneous collection than the research journals, e.g., *Guide to periodical literature, Applied Science and Technology, Current Contents in Science & Technology in India*.

Appearance of the secondary journals has led to the formation of third category of journals i.e. the ‘review’ journal. These play important role in scientific and technological communication. Review journals specifically survey the developments in a particular field over a period, e.g. *Biological reviews, Advances in physics, Science progress*.

Grogan (1973) categories periodicals on the basis of publication agencies the journals are classified in to following types:
1. Learned societies, academic bodies
2. Government bodies
3. Independent research institutes
4. Professionals bodies
5. Commercial publishers
   - Learned and research periodicals
   - Technical journals
   - Trade Journals
   - Popular Science Journals
6. Industrial and Commercial firms
7. Journal published by Academic Institutions
8. Journal published by Individuals

**3.1.4.1. Learned Societies, Academic bodies**

The main purpose of such periodicals is to furnish an opportunity for authors (usually members of the learned bodies concerned) to publish the results of their investigations, and perhaps the majority of titles in this group are research journals, but there are also a number of secondary journals issued by the societies, frequently alongside a primary journal; e.g. in addition to its research quarterly *Computer journal* the British Computer Society also brings out the monthly *Computer bulletin* as its ‘organ’ with reports of meetings, data on new equipment, additions to the library, etc.

**3.1.4.2. Government bodies**

As the role played by government, both national and international, in our lives increases, so does the volume of official publication, particularly in science and technology, where vast sums of public money are currently being spent on research and development. Some of these publications are periodicals, e.g., *Meteorological magazine*, *Marine observer* (both meteorological Office journals), *Post Office telecommunications journal*, *Canadian journal of Chemistry* (National Research Council of Canada), *World health* (World Health Organisation).

**3.1.4.3. Independent Research Institutes**

A small but interesting group of periodicals come from research institutes that are basically of independent foundation (even though they perhaps have links with universities, or possibly undertake government work under contract). They may have
been established with a particular subject orientation or a particular role to play. Examples of periodicals so produced are *Textile research journal* (Textile Research Institute, Princeton, NJ), and *Polar record* (Scott Polar Research Institute, Cambridge).

### 3.1.4.4. Professional bodies

As a category, bodies like the Institution of Mechanical Engineers, the Royal Institute of Chemistry overlap with the learned societies, and much of their work (and the periodicals they produce) is distinguishable. Periodicals in this category can range from primary research journals of a calibre and prestige fit to match any learned society publication to what are little more than news bulletins. Examples are: Mathematical gazette (Mathematical Association: ‘an association of teachers and students in elementary mathematics’), Journal of basic engineering (American Society of Mechanical Engineers), Journal of the Royal Aeronautical Society, IASLIC Bulletin etc.

### 3.1.4.5. Commercial publishers

This category covers periodical publication from the highly technical to the comic strip magazine. Some commercial publishers are known for their technical lists; others as publishers of trade journals; while other publishes a very wide range of periodicals. The examples are: *The Nature, Psychologist, The Statesman, New York Times* and Publisher catalogues such as *Cumulative Book Index, American Publishing Record* etc. So wide is the variety of such periodicals that it is expedient to subdivide them further into.

**(a) Learned and research periodicals:** Examples have been commercially produced for a hundred years or more, particularly in Germany, but until recently they have always been overshadowed by the famous title issued by the learned and professional societies. Representative titles are *Journal of Molecular Biology, Annals of Physics, Micro Chemical Journal.*

**(b) Technical journals:** These are very closely linked with the needs of industry and although as secondary sources are of limited interest to the research investigator, they are invaluable to manufacturing, sales and commercial personnel. Much of their content value lies in their other features, such as new columns, letters to the editor, book reviews, etc. Examples are *Electronic engineering, Computers and automations, Foundry trade journal.*
(c) **Trade journals:** They are more commercial than technical and more news oriented than subject oriented. Otherwise they are very similar to the technical journals, with an equal reliance on advertisements. Examples are *Poultry world* (1874), *Contract journal* (1879). Such journals are particularly useful sources for market news (commodity and share prices), company news (forecasts, dividends, mergers, expansions), and general trade announcements.

(d) **Popular subject journals:** These are familiar to everyone, and include all the titles for the amateur, the hobbyist, and the enthusiast that are to be found on railway bookstalls, as well as large number of mysterious (not to say crank) publications catering for the most unusual concerns. Typical titles are *popular mechanics*, *Yachting world*, *Railway magazine*, *Speleologist*, *Inventor*.

### 3.1.4.6. Industrial and Commercial firms

A number of 'house-journals' are published, primarily for the purpose of advertising by manufacturers, dealers and public corporations. These help to promote the products and services of the organization. These often contain valuable information which in industrial library helps to keep abreast of services of rival companies.

### 3.1.4.7. Journal published by Academic Institutions

Much of the research work is undertaken by the academic institutions and the findings are usually reported in University and college research journals. These play an important role in the dissemination of latest information pertaining to specific fields of Science and Technology.

### 3.1.4.8. Journals published by Individuals

Although the number of journals published individually is quite less but these also play an important role in furnishing the latest information. These are single publication and are usually published mostly for money making ventures.

### 3.1.5. Problems of Periodicals

The importance of periodical to the researchers cannot be over-emphasized, yet full exploitation of the scientific information still remains in doubt. Socio-economic and political compulsions of a country like India have resulted in a gradual increase of scientific and technological research projects, thus contributing to the phenomena of information explosion. The scientists thus remain the ‘producer of information’ and at the same time consumer of information. While performing the second part of the cycle, the scientist confronts with the unlimited and ever-growing...
mass of knowledge, out of which the relevant information has to be scanned through
by using the techniques of information handling available at his disposal (Parasher, 2000).

The other problem is that of time lag between the submission of scientific
papers and their publication in the Journals of repute and in some cases exceeds a
year. In certain fast developing subjects, much of the literature becomes obsolete by
the time it is published. Another problem with the journals is the restriction in the
length of papers imposed by the editors. This might cause either omission or
curtailment of some of the supporting data and/or background information. This is
generally due to the high costs of journals publication.

Another problem related with journal publication is the refereeing system.
Most learned journals control quality of the papers they publish by screening through
an editorial board. Mostly the submitted papers are sent to an independent “referee”
for an authoritative opinion before publication. This helps in eliminating unfair means
of publication, but is a time-consuming process. Advancement in Information
Communication and Technology (ICT) has provided solution to the above mentioned
problems to a great extent.

3.1.6. Acquisition of Printed Periodicals

Periodical’s selection, acquisition, check-in and cataloguing are difficult tasks.
The routines involved are frequent checking prices, title, publisher, frequency and
scope are subject to change. Periodicals merge or split, get suspended for varying
lengths of time. The acquisition of periodicals is the first step in the management of
periodicals. The major components of the acquisition process are acquiring the
periodical, check-in claiming, payment and fund accounting. A collection
development policy of periodicals is particularly important because they are tougher
to select and demand more critically informed selection choices (Chiqu-Sen & Chen,
1995).

Ashraf (2004) describes the general principles of periodicals selection do not
vary much from those leading the selection of books. The factors governing the
selection of periodicals rely on:
i. The scope of the library
ii. Demands of the users
iii. Whether the title is easily available elsewhere
iv. Periodicals already taken
v. The financial resources of the library

According to Osborn, periodical selection is an art. Its skilled performance depends primarily on the exercise of trained, informed judgment. He has laid down certain principles and procedures in this regard under mentioned:

i. Checking the monthly issues of New Periodical Titles- classed subject arrangement promptly and systematically.

ii. Acquire the material which opens up the literature of a subject or a country.

iii. The titles that are analyzed in abstracting and indexing services should be acquired.

iv. Duplication of periodicals should be avoided.

v. Special attention should be given to the acquisition of the basic journal or journals in all fields of interest.

vi. A complete set should be maintained instead of a broken set.

vii. Enrich the resources of a locality, region of group of libraries by carrying out a program of cooperative acquisition.

viii. In each area develop a coordinated program for the preservation of local publications.

ix. Build up periodical files on the basis of long runs, not broken sets/files.

x. In research libraries allocate an amount for the purchase of back files of periodicals.

The mentioned guiding principles can be of use in the selection of periodicals varies from the library to library (Osborn, 1955).

Kraft, Polacsek, Soergel, Burns, & Klair, (1976) based on Cost/benefit Ratio approach framed a model for deciding which journal titles to select for acquisition in a biomedical library. They explained a cost/effectiveness approach to the journal selection problem in a biomedical library. First of all they developed the list of possible journal titles to be considered, the cost of these titles are recorded and updated periodically. Measurement of total journal usage, journal relevance and journal availability elsewhere calculated for each title. A total weighted measure of journal worth is then calculated, based on subjective weights for each measure. Then the algorithm based on ranked cost/benefit ratios can be applied.
3.1.6.1. Selection Aids and Tools

There are some important tools which can be used as they are of enormous help for acquisition purpose and provide sufficient bibliographic and reference service.


iii. World List of Scientific Periodicals, New York.


vi. Periodicals Titles Newly Received (Library of Congress)

vii. Times Literary Supplement under in current periodicals’ column

viii. Aslib Information Guide


3.1.6.2. Periodical Acquisition System

Acquisition and ordering is a difficult stage in periodical management. Periodicals acquisition include identifying and verifying the existence of the item, ordering, receiving, checking, paying, renewing, claiming, or cancelling as needed. Periodicals are identified, ordered, received, paid for, catalogued, renewed, claimed, re-catalogued after the titles change, and renewed again until they are ceased or cancelled. Budget and curriculum are main factors taken into consideration while acquiring the periodicals. Following are the ways of acquiring periodicals to libraries:

i. By subscription to publishers of the periodicals who mail copies directly to the libraries.

ii. By dealing with the vendors/agents (standing orders)

iii. By purchasing from a local book shop or news agents

iv. By taking the membership of the learned society or professional body

v. By gifts

vi. Exchange programmes

vii. Deposits

viii. Bid Contracts

ix. Government Agencies
Publishers

Publishers sell their periodicals directly to libraries and most of them also sell their periodicals to subscription services, who then sell them to libraries. Some subscription services do not do business with some publishers offer packages of their publications to libraries at a reduced charge that may not be available through subscription agencies/services. Organizations may offer their publications through institutional membership, providing publications that are either not available except through membership or are more expensive to non members. A very small library may not use subscription services in order to save the service charge imposed by the Service. This practice is not a cost effective option for large libraries.

Subscription Agents

A subscription service sometimes referred as subscription agency, subscription agent, or a periodical vendor, is a commercial business that processes periodicals order for all types of libraries. Subscription agents provide a variety of services for librarians including placement of new subscriptions, subscription renewal, subscription cancellation, consolidation of periodical orders, customized invoicing, processing claims and providing a variety of specialized customer and computer based services such as online interactive databases. Subscription services maintain detailed records and provide management reports for titles that the library has an order with them.

The advantage of subscription agents is the savings they provide to the library in easing workloads, reducing the number of staff, saving space and saving equipment. Subscription agents can ensure that the libraries subscription are automatically rendered, avoiding loop holes in issues. They can invoice the library at the times that are most appropriate for its budget cycle. The major falls drops associated with agents is the charge of service. Subscription agents provide publishers with benefits similar to those received by libraries like efficient consolidation of orders and renewals, handling of global currencies, assistance with claims, knowledge of the library market, and information distribution.

Standing Orders

Periodical can be acquired through standing order which means that the publisher supplies the title automatically as and when the title gets published. As in case of subscriptions, certain publishers deny business their output except through a
standing order placed by the library directly with the issuing body. A standing order, once passed remains in source until cancelled or the ordered item ceases publication.

**Membership**

It is somewhat similar to standing order; in special library field particularly libraries are often part of an organization or firm which is a member or corporate member of learned societies and research associations. The membership subscription usually includes at least one periodical publication free. In such cases librarian should insist that all publication received by the organization as a result of this membership should be deposited in the library. This also applies to those publications which are received by members of the staff of an organization whose individual membership subscription to a learned society etc, is paid by the organization (Ashraf, 2004).

**Gifts**

Gifts of periodicals may include scattered issues of titles, complete back files of titles, or donated subscription. Donors may be individuals, organizations, or the publishers of the titles. Libraries must evaluate gifts carefully, considering the processing charges, preserving and shifting the materials. Libraries should have policies describing the types of materials that will/will not be accepted as gifts. All donations should meet the criteria established in the collection development policies of the Libraries. Gifts of periodicals can save finance since the libraries do not purchase the subscription, however they do require staff time to evaluate, process, preserve and monitor.

**Exchange Programs**

Acquisition by exchange is a valuable means of acquiring periodical material on regular basis. The exchange of material between two libraries is simple as it requires no payment. Exchange programs usually involve training the publications of an institution for those of another organization. Libraries must identify exchange partners, agree with the potential partners about what titles be exchanged, and monitor the materials to ensure that the program is relatively balanced. If libraries establish exchange programs with organizations at global level, the acquisition staff may need foreign language skills to handle some correspondence. Libraries should create order and check in records in their integrated library systems for titles received on exchange. The records should include the names of exchange partners and notes on whether missing issues should be claimed.
Depository Programs

Deposits are similar to gifts and exchanges, except the fact that they may not be efficiently the property of the receiving library. Before accepting a depository agreement it is necessary to know the terms and conditions in detail, when it comes to a periodical publication. Libraries establish depository programs in order to acquire materials that can’t be purchased through other methods and means to acquire all materials issued by an institution (Wilkinson & Lewis, 2005).

Bid Contracts

It is yet another way of acquiring periodicals in a library. The aim of bidding is to obtain the best service at the minimal charge, although it is sometimes difficult to maximize both the aspects. Since, at present, a library is not likely to save money on the subscription price by working through an agent, it becomes absolutely essential that the quality of agent’s service be of high standard. The library staff must be very careful in writing performance specifications and in monitoring the performance to identify ineffective subscription agencies to which contracts should not be awarded in future. Bid specification for subscription agent should be a description of types of periodical publications to be acquired, such as whether to; they are all domestic publications of periodical type, the span of time given to the agent, to place the subscription; frequency and from of billing; and discount service charges. Once failing in fulfilling the terms of the contract, penalty should be made as per the rules specified.

Through Government Agencies

In some countries government has assigned the responsibility of procuring the periodicals to its own agencies to eliminate agents. In India the responsibility was assigned to State Trading Corporation (STC), with the aim to broaden the scope of Indian Exports and to arrange essential imports. Ultimately, responsibility was given to STC to import foreign publications. Being a government undertaking it could not be as efficient as a private agent and secondly it has no experience in book trade. So STC no longer provide this service (Ashraf, 2004).

A comparative cost-benefit analysis of the two systems of subscription to periodicals i.e. direct subscriptions or the agency system was conducted by Joseph (1983). This study was based on the practice of Calicut University Library, which used direct subscription and Kerala University Library, India, which used an agent. Author estimated the cost per operation and arrived at the average cost involved per
title under both systems. The study revealed comparative efficiency was assessed by the time-lag in the receipt of periodicals and the completion of volumes. The comparative study concluded that the direct subscriptions system is more efficient and economical.

3.1.6.3. Problems in Periodicals Acquisition

Subscription of periodicals creates several problems for a librarian. Various problems faced by the librarians are briefly under mentioned:

i. Subscription Procedure

Generally, most of the libraries subscribe to periodical publications through agents. In case of foreign publishers, publishers appoint their role agents who are appointed for inviting quotations. Librarians found this method to be unsuccessful because the agents who offer lower rates usually do not give standard service. Most of the libraries do not give efficient service. Only those agents who are ensured suitable remuneration provide better services. Most of the libraries do not invite quotations annually and they renew the subscription on the basis of previous year’s performance of the agent. However large numbers of libraries renew their subscription every year which results in the late placing or ordering as also late payment of subscription. It is necessary to reschedule the process to avoid these delays. The other way can be that libraries may consider the placing of standing orders which would assist to avoid delays and to minimize routines.

ii. Problem of Proliferation and High Cost

There is an abnormal increase in the number of periodicals due to explosion of scientific research. Their titles have increased rapid pace and their subscription prices have reproduced continued to increases at an alarming speed. A large number of indexing and abstracting periodicals came into existence which is yet more closely to be acquired by each and every library. These trends have raised the frustration level of both librarians and library users. As a result, libraries as well as their users have become more dependent on one another for supplementing the gaps in their collections. The problem pertaining to gaps in holdings can be solved by acquiring all important periodical selection and reference tools and by taking up seriously the publication of more and more periodical indexing and abstracting journals in the country by either a central agency like the NISCAIR or UGC so as to cover all subject fields adequately. Gaps can also be filled in by exchange programmes amongst the university libraries within the country itself. However, this is possibly only when
some university libraries publish a list of periodical holdings and makes it available to
other university libraries.

iii. **Inadequate Rules**

Periodical handling is pretty much difficult, even for the cataloguers. Rules
have been laid down for cataloguing periodicals, amended from time to time, Para-
rules have been created, and plethora of sub-rules dealing with each idiosyncrasy of
the periodicals. But the situation in libraries around the world is almost unchanged. A
central agency should be there to lay down the rules so that uniformity should be
maintained among the participating libraries.

iv. **Identification of Core Journals**

Under present circumstances, when academic institutions are not in a situation
to subscribe all journals they require, it is essential that they subscribe to at least some
core journals related to each discipline of academic and research in an institution. List
of core journals based on citation studies are available which need to be updated and
issued as prescribed lists.

v. **Proper Selection of Journals**

Another problem is that of proper selection of journals to be acquired. Unlike
books, a title once subscribed continues to flow in subsequent years uninterruptedly.
As far as foreign journals are concerned, there are good tools as *Ulrich’s Guide* kept
updated by successive revised and enlarged editions and *Katz’s Management for
libraries* which probably gives most balanced critical evaluations for the titles
included. There should be a clear distinction between those journals which are
essential and are used frequently and those which are little used (Pathak, 1977).

vi. **Determination of Actual Use**

It has been noticed many times that costly foreign periodicals are subscribed
on regular basis but many of them are hardly used due to lack of adequate translation
facilities. One way of determining actual use is keeping the journals in closed access
and computing their use on the basis of the demand slip received. But this proves a
hindrance in free browsing of latest academic materials appearing in the journals. The
process also involves much more additional work for library staff. Use can also be
measured on the basis of citations by academic and research staff in their research
publications and thesis but this measurement will have to consider a period of ten
years, and not on annual basis.
vii. Refund

A common practice among libraries is to ask for refund the missing issues when lost in shipment, etc. But in case complete volumes are not supplied to the libraries, subscription is either adjusted or refunded invariable. It happens when the periodical has ceased its publication when it is behind the publication schedule. In case the library discontinues, if the agents do not like to refund the subscription unless they receive payment from the publishers. In all cases getting the refund is a job demanding regular persuasions from the library, involving a delayed correspondence stretching over a long period.

viii. Loss of Periodicals in Transit

Libraries face the problem of missing issues and incomplete volume of periodicals. Problem of handling and disposing the duplicate journals cases may be seen when the duplicate issue supplied by the publisher also gets lost in transit. The loss of issues in transit is usually of two reasons: (i) issues are undelivered due to someone personal interest or leniency of the postman, (ii) misdelivery due to the carelessness of the postal employees. A large number of journals get delivered to other addresses and some get lost due to poor packaging by the publishers. A central mechanism also needs to be developed which can bear the responsibility of exchanging large number of duplicate issues available with the libraries, which can complete large number of volumes.

ix. Consistent Policy for Subscriptions

At National level some guidelines should be formulated, so that no institution start subscribing large number of journals, when finances are available easily, and discontinues them later in times of stringency. Stray volumes of a journal create frustration among research scholars. Moreover there is sheer wastage of amount spent on subscription of a journal if it is to be discontinued in future.

x. Procurement of Back Files

The cost of back files of periodicals is usually very high and their acquisition is slow and tedious process. Extreme precaution is needed before deciding to acquire back files of a periodical. Quotations are invited from various dealers, orders are to be placed with the one who is willing to supply at the lowest rates and then purchase has to be made. When an order for periodicals is going to be placed, it should also be seen that the rates quoted are for the bound volumes, each complete in all respect with its title page and index. For the periodicals which are infrequently used, inter-library loan
facilities from other libraries may be relied upon or alternatively their acquisition in micro form may be considered. It will be still better if the acquisition of back files of periodicals is organized on cooperative basis among local libraries whether to be acquired in original form or in microform. Instead of acquiring complete back sets which are highly priced, it would be in the fitness of things to acquire complete files of indexing/abstracting journals.

xi. Cost of Journals Vs their circulation

After the insertion of electronic media in libraries, resource sharing, and copying facilities have reduced the number of subscribers to academic journals. Thus, the production cost of the journal is distributed among the remaining subscribers.

xii. Periodical Budgets

The budget is not increasing according to or as per the requirements. There is inadequacy of sufficient funds. There is abnormal rise in the subscription amount of periodicals during the preceding years. Especially the journals published abroad have raised their annual subscription charges substantially. The acquisition of new journals of interdisciplinary and specific nature has become essential for an institution to maintain its quality. But while considering grants for acquiring them, the situation becomes acute. Progressively the intake of journals would go on decreasing in number and it would be impossible to acquire the new titles. Current financial trends indicate that the quantum of grants will rise more slowly than the cost of journals. In order to tackle the situation, it would be desirable that libraries in every Indian city should cooperate and compile an issue of Union list of current journals received in all the libraries in that city. This may be done with a view so that less used and costly journals may not be acquired by more than one library in a city. Another way to tackle with this problem may be to persuade the Heads of Institutions to bifurcate the book-grant and show the amounts chosen for journal subscription and for books etc, separately. Once this has been completed, it would highlight clearly the total paucity of grants for journals.

xiii. Improper Binding Facilities

Most of the libraries do not have proper binding facilities. As such the periodicals go on pilling up and these are not utilized adequately. Even now some libraries do not have their own binderies with enough qualified staff; rather they rely upon commercial binders. Moreover, there are no cooperative storage centres for storing the under used periodical publications which is otherwise essential for coping
with the ever increasing demand for space for the purpose. There is no central agency to guide the various organizational activities of university libraries so far as the co-operative acquisition processing, servicing and maintenance of periodicals exchange of publication is concerned. There is lack of essential periodical reference tools including selection tools, complete sets of periodicals, indexes and abstracts up-to-date lists of several holdings union list of periodicals. Regarding binding problem, it may be suggested that though a binding department should be set up in each university library, yet there is no harm it can be organized on cooperative basis (Mittal, 1965).

3.2. **E-JOURNALS: AN INTRODUCTION**

The developments in computer and communication networks, especially World Wide Web have facilitated creation of alternative electronic form of the paper journals. The E-publishing has brought evolution in journals publication, subscription, access, and delivery mechanism. Today libraries are providing electronic access to a wide variety of resources, including indexes, full-text articles and complete journals.

Due to digital publishing technologies and internet, the scholarly journals have undergone many changes. The digital technology gave birth the electronic form of journals or e-journal. Apart from publishers, the availability of electronic versions of journals on World Wide Web, led to the emergence of new and modern E-journal service providers. From bibliographic to full-text articles and the citation linking across journals has been another landmark. The digital publication has also shortened time lag between article submission and its publication.

The E-journal is being called by various synonymous terms like online journal, paperless journal and virtual journal. A journal can be called as E-journal, if its contents are produced and stored in electronic form, and if these contents can be scanned in a database and retrieved online, it can be called as online journal. Some experts regard E-journal as the one that is produced, published, and distributed nationally and internationally through some electronic network like internet (Lancaster, 1995).

In the recent years, E-Journals have become the focus of Research and Development. In response to this development, Research and Development Organisations started subscribing E-journals. Academic libraries also could not remain behind. The proliferation of electronic resources, network technology, computer technology and web technology has facilitated this developmental change.
The numbers of quality and refereed electronic journals are growing rapidly and can serve as an addition to hard copy or increasingly serve as substitutes.

The acquisition of E-journals is not same as the Printed journals. Electronically designed content delivery via web, LAN/WAN, wireless networks have crossed earlier barriers of time, speed, and have provided easy and smooth access. Predefined procedures and policies which are used for print, or print along with e-form apply to e-formats. These forms need to be handled and addressed separately. The policies and procedures for E-journal acquisition, licensing, negotiations, order/receipts and control of serials on CD-ROMs, via web, need to be formulated so that effective organization and management takes place (Sahoo, 2004).

3.2.1. E-Journals: Definitions

According to Glossary of Librarianship and Information Science, “an electronic journal is a publication, often scholarly, that is made accessible in a computerized format and distributed over the internet” (“Electronic journal”, 2004).

According to Harrod’s Librarians Glossary & Reference Book, “A journal which is available in electronic format; a physical, printed version may also be available” (“Electronic journal”, 2005).

3.2.2. Historical Development

It was in early 1990s when E-journal emerged for the first time on internet. It was in ASCII text format and made available by e-mail as well as in diskette. In 1991, the commercial publishers, Elsevier started the TULIP Project in collaboration with several academic institutions. In 1992, OCLC published “Online Journal of Current Clinical Trials” (OJCCT). It was the first E-journal to include graphics. It was networked, referred electronic only journal i.e. without a simultaneous hard copy form, with full-text and graphics available by subscription. OCLC’s “Electronic Journal Online (EJO)” project adopted the World Wide Web (WWW) as a distribution mechanism which later on came to be known as “Electronic Collection Online (ECO)” and it developed specialized viewing software. This made articles as searchable database and with graphical user interface it can be viewed in graphical and ASCII text.

JSTOR (Journal Storage Project) started in 1993, which was the first major retrospective electronic archiving project of printed journals. By 1994, the World Wide Web had gained strong hold and now mostly E-journals are now delivered through World Wide Web (Adhikari, 2000).
3.2.3. **Characteristics of E-journals**

E-journals have undergone a dramatic transformation in style and format since their initial appearance in the early 1990s. Many now have full colour web pages with an attractive and ease to use layout. Despite the fact that layout and presentation of E-journals have greatly improved, and access has been facilitated by the web and online archives, users still may prefer to print hard copies of selected issues and article to reading from a computer.

3.2.4. **Types of E-journals**

There are currently two types of electronic journals. The first is offline CD-ROM Journals and the second is the Online or Internet based journals (Woodward & Mc knight, 1995).

i. **Offline CD-ROM Journals**

CD-ROM stands for Compact Disc Read Only Memory, and represents a way of digitally storing large documents of information in a way that is easy to search and retrieve. It is portable and has ability to store graphic data. The most important advantage of a CD-ROM is that if the CDs are on network then the same CD/Database on the CD can be shared by an unlimited number of users, sitting at far off places and at their door step (Hasan, Singh & Sharma, 2002).

ii. **Online or Internet based Journals**

Online journals are available through online hosts or vendors and allow remote access. It can be used simultaneously by more than one user. It provides timely access. E-journal supports different searching capabilities and saves physical storage. Though on the surface, these two types appear alike there are several points of considerable difference that one could take note of.

Readers of online journals can be alerted to news appears as issues via electronic mail, discussion lists or newsgroups. Clearly this is not exclusive to online publications, but such an information service presupposes that the receipts is online and therefore seems to easy, and have more weight if the publication is also online.

Much easier access to latest articles, due to the immediate nature of distribution of Internet online journals as compared to CD-ROM versions which depend on shall mail to reach the customer.

Cost of updating online journals are much less, since the files are simply added or simply replayed on the specific server. Hence users can be made more
frequent than CD-ROM version, which can out with more or less the same frequently as the print versions (Bhattacharya, 2000).

On the basis of the distribution, Chan (1999) has identified the following types of E-journals:

i. **Classic Electronic Journals/ Internet Application Electronic Journals**

Some of the E-journals are available through internet applications which are also called as classic journals. Originally they were distributed via e-mail but now available on the web. Access to this category is free of cost.

ii. **Parallel Electronic Journals**

These types of journals are published simultaneously in both forms print and electronic. The online version may include the full-text of journal, only table of contents of selected articles and excerpts from the print version.

iii. **Database Model and Software Model**

Under the database model articles reside in centralized database maintained by the publisher and subscribers are given permission to access the database and use search software on central computer to locate and download articles. The software model provides in a piece of software, which runs on the Internet connected computer and connects database to the journals central computer. The users can search and download information, which will be sent in proprietary encrypted form. The software would have an expiration date that corresponds with the length of the subscription.

iv. **CD-ROM Journals**

Commercial publishers have also made journal titles available on CD-ROM. The full text of journals and newspapers has been made available on CD-ROM. In many cases these titles duplicate print titles held by the libraries. Libraries have often subscribed to journals both in print and in microform (Chan, 1999).

3.2.5. **E-Journal Collection Management Issues**

Management of collection of E-journal raises a new set of issues for libraries, but these issues still fit within the classical theoretical framework of collection development and management. Electronic journals still need to be selected, acquired, catalogued, disseminated and preserved, in very different ways from traditional journals. The type of collection management issues raised by electronic information resources vary among libraries developing on their individual missions. These issues cannot be addressed in isolation from print resources and libraries need to begin to develop integrated collection policies from print and electronic journal. In this
context, the role of collection manager is crucial in developing policies and structure that will integrate print and electronic media (Nisonger, 1997).

i. Access

E-Journals access is not simple. There are many issues which need to be considered: i.e. technology requirements, restricted or unlimited access vice publisher or aggregator, and making library patrons aware of E-journals access. Access management is concerned with the management and deciding policies, guidelines, legal and technical solutions. Access management strategies, should consider issues of privacy and accountability (Lynch, 1998).

ii. Pricing

The pricing structures of E-journals vary significantly from vendor to vendor and from publisher to publisher. Subscribers or librarians should watch for variations among pricing structure and note that these pricing structures are not static. In contemporary scenario users like access instead of ownership using document delivery service to provide access to set of journals. Another solution is putting together consortia of a library to provide access to set of journals. A third solution is creation and maintenance of electronic archives of journal articles without reference to commercial publishers (Kushwah, Jambekhar & Gautam, 2002).

iii. Classification, Cataloguing and indexing

Classification and cataloguing of E-journal has been a point of discussion since its inception. Libraries should be alert to emerging standards for cataloguing of electronic publication. Some authors suggest that libraries should allow paper and electronic form for the same title resides on the same bibliographic record to facilitate access. On internet there are many sites, which use DDC as a Broad System Ordering (BSO). Some of them are Cyber Dewey: a catalogue for the World Wide Web, available at http://ivory.in.com/mundie/DDHC/CyberDewey.html, Internet Resources in Dewey Decimal order with DDC subjects: Mid-continent Public Library available at http://mcpl.lib.mo.us/dewey.html Attempts are being made to make classification scheme as a tool for automatic classification and indexing. Scorpion is one of the projects in this area. It is a project undertaken by OCLC, which will help to build tools for automatic subject recognition based on well known schemes such as DDC. The concept of facet analysis can be of much help in overcoming some of the problems in indexing or searching the WWW in a reasonable effective way (Rekha, 2000).
The rapid development in the organization and presentation of E-journals has raised a variety of basic cataloguing questions. Internet services, such as discussion lists and World Wide Web servers have challenged Serial Librarians to reconsider aspects of the traditional definition of Serials, especially with regard to citable issues and their designations. The display of bibliographic information has also become more complex with E-journals. Often, this information is dispersed over several files, giving catalogueers multiple sources for description that can contain different presentation of bibliographic information. The availability of multiple document formats has generated questions about computer file additions and the number of catalogue records to represent them. Many institutions have also been hesitant to include catalogue records for internet resources because of uncertainty about how to record location and holdings information (Chad, Marian, Richard & Annelise, 1999).

iv. Metadata

The wealth of information and the quick access available provides a frustrating dilemma for libraries and information seekers equally. The information is available, but how to find it, to organise it to be found again? This availability of vast sources of E-journals on the net initiated a need to have a tool to organise them, i.e. metadata. Metadata is defined as “data about data includes information about the context of data and the content of data and the control of or over data” (Pasquinelli, 1997).

The term is generally applied to E-resources and refers to “data” in the broadest sense of datasets, textual information, graphics and anything else that is likely to appear electronically. While the concepts include indexing and cataloguing information, it can go far beyond conventional document representation, such as MARC records. Information about authenticity, availability and accessibility, digital signatures, copyright, reproduction, etc. is also metadata.

v. Number of Issues

Publisher sometimes fails to make all issues of their journal available electronically, e.g. publisher may publish issues online sporadically or temporarily. The selector should clarify with the publisher the number of issue a particular subscription covers and ensure that no gaps in coverage occur. Only journals that have a significant run of issues should be added to collection and titles available only temporarily (trial version) should not be selected.
vi. Training and Support of Staff and Users

With the number of E-journals being published and variety of different interface, sophisticated searching and retrieval skills are becoming necessary. People who are familiar with latest developments should be appointed in library and existing staff should be trained well, so that users will get proper guidance to find out the relevant information.

vii. Archiving

Archiving is preserving the document for future use. It is a facility for only right to access and not ownership. Libraries want the assurance that they will retain the right to access volumes of E-journals for which they have paid even if they cancel their subscription at later date. So the question arises, who should be responsible for archiving? There are at least three possibilities. One is that the publishers give commitment for archiving and providing back issues access. This can not be taken on its face value, as we know many publications have ceased or merged with others. Other aspect is that libraries could do archiving for themselves but the issues of cost of archiving need to be seriously considered in the context of everyday changing technology which keeps the cost going up that no library can afford. The third is forming a shared archiving at national level, regional level, and provide access to all members. This relates to forming a consortium for archiving and sharing the equal advantages occurring from the arrangements (Chad et al., 1999).

viii. Licensing

Publishers are not feeling convenient with copyright law; therefore licence agreement came in existence. Licensing agreement that required signatures by both the licensor and licensee appeared in the early 1990 with CD-ROM product continue to be used by publisher as legal contract prices, limit access, define use, and protect their right. It is a written contract between user and developer of the information product service setting forth the term under which a licensor grant to licensed license. It describes the authorized uses and users of licensed information are the core of the license agreement. Judith (1999) enumerates the following important issues should be kept in mind when E-journal licensees in negotiation need with the suppliers:

- Expressly permitted use
- What is the rule if the agreement does not specially deal with a particular use for users?
• Does the agreement provide for all the uses and users that the licensee normally accommodates?
• Whether access is limited or unlimited, open network, stand-alone or simultaneous use?
• Price for site licensing, number of journals, multiform subscription, prints free access.
• Archiving, downloading, printing, CD-storing etc.
• What is the rule in unforeseen circumstances, such as the identification of a new use or user?

ix. Copyright

Electronic media presents new challenges to copyright holders. Copyrighted material converted into digital form can be copied perfectly without any damage or dimension in quality of the original. Electronic copyright is an uncertain area but one, where the establishment of any easily understood legal framework is needed in the interests of publishers and library. ISI Electronic Library project has developed a security and rights management system, which will take care at the client, local and central server level. The system is using passwords, secure printing through encryption and water marks and guaranteed authenticity with the use of digital signatures.

x. E- Journals Inventory/Database/Catalogues

Maintaining E-journal inventory/database details always helps when any dispute or any matter arises related to journals subscribed by the library. Library and information centres are maintaining inventory for the print form of registers, Kardex, systems or computerised system for the management to monitor receipt, reminder and budget. But E-journal subscription management may need a bit of more awareness and knowledge.

3.3. DIFFERENCE BETWEEN PRINT JOURNAL AND ELECTRONIC JOURNAL

Printed and Electronic journals differ to each other in many respects.
1. Print journal does not require any equipment while E-journal requires necessary hardware, software and printer.
2. In the case of print journal only one user can use a particular issue at a time while E-journal allows multiple users to use it simultaneously, provided the subscription is for multiple usages.
3. Print journal easy to locate if shelved properly, otherwise there is always a probability that an issue or bound volume the user is looking for, may have been misplaced or gone for binding, while E-journal easy to locate, provided URL, internet or hardware problems do not occur. In India electricity and internet connection often create problems.

4. Use of print journal is governed by copyright laws, while E-journal use is governed by licensing agreement and copyright laws.

5. Every time when an issue or a bound volume is taken from the shelf, it has to be re shelved, but in the case of E-journal shelving is not an issue.

6. After binding, print journal becomes strong for effective archiving and is always available for consultation, while in the case of E-journal archiving is subject to provisions under licensing agreement with the vendor. If it is not renewed, the vendor may not allow access, after subscription period is over.

7. User can mutilate, steal or misplace print journal, if an item is mutilated or stolen, it is a permanent cost is very heavy, while E-journal cannot be mutilated stolen and misplaced, this is the main advantage.

8. Sometimes, print journal can get lost in post, while the problem of missing issues does not arise in the case of E-journal.

9. Print journal requires considerable storage space which shrinks each year, while in the case of E-journal physical storage space is saved totally, except for space required for hardware.

10. One can get a copy by using a photocopy machine, keeping in view the copyright laws, while in the case of E-journal one can download an article and get prints out, keeping in view the licensing agreement with the vendor.

11. The delivery through post takes lot of time especially if the journal is published abroad. However, air delivery saves a great deal of time but it makes the subscription costlier, while there is no time lag between its publication and delivery as E-journal is received instantaneously.

12. The publication of print journal is slow, in spite of IT, while publication of E-journal is fast.

13. Procedures like ordering, keeping track of current issues, sending missing issues reminders, and sending claim letters for return of payment, binding etc involve lengthy and complex process, as well as heavy cost, while in the case of E-
journals such issues do not occur. There is no need to send reminders of making claims, binding etc. The procedure for ordering remains the same.

14. Print journals can be accessed only within the library, during the hours when the library is open. While E-journals can be accessed from anywhere (home, office and library) or at any convenient time subject to agreement license. However, accessibility is affected if library system is down or there is a server problem with publisher or there is a virus attack on the internet.

15. When the volume is complete of print journal, it is sent for binding, during that period, the particular volume would not be available for user, while there is no question of binding in the case of E-journal and it is always accessible for use.

16. The cost of print journal is more than E-journal and operating cost is rather high as it includes cost for ordering, cataloguing, classification, binding, correspondence for claim for missing issues, shelving etc. But it is less in case of E-journal.

17. Some vendor offer package, covering a group of journals, thus bringing down the total cost. But in the case of E-journal, it is a usual practice for vendors to offer packages at considerably lower cost (Singh and Kumar, 2005).

3.4. E-JOURNAL PROVIDERS

The E-journal providers on internet are categorized broadly into two types:

1. Publishers who provide full-text access of their own journals
2. Aggregators, electronic publishers and subscription agents who provide access to the contents of journals furnished by the publishers. Some E-journals have only text content, but the trend is towards web access to both text and images including 2D and 3D graphics using VRML (Virtual Reality Modeling Language).

3.5. APPROACHES FOR E-JOURNAL ACQUISITION

There are two approaches for acquiring E-journals.

i. Individual Library Approach

Every library differs from one another according to its collection, information needs of users, working methods, sources of finance, processing of information etc.

ii. Consortia Approach

It is more practical than any other approach towards the subscription of E-journals. It is a marketing strategy of commercial publisher to get continuous longer commitment from a group of libraries for their journals (Kanadiya & Akbari, 2009).
3.6. LIBRARY CONSORTIA

The explosion of literature, shrinking library budget, escalating cost of information sources, growing demand of users and multifaceted user requirements are some of the major problems libraries facing today. This led the libraries to formulate a strategy to share resources among themselves to overcome the problems.

The Consortia is the plural form of “consortium” but is often used in place of singular form. The idea of consortium is not new. There were instances of several libraries coming together voluntarily for the mutual benefit of respective users just like cooperatives, it was the earliest stage of library cooperation. In the second stage, computerised networks come into trend for sharing of resources. Till this period, the library resources were mainly in traditional printed format. The networks created their bibliographical databases. The users of the participating libraries could get the required documents from other libraries through document delivery services. With the advent of e-resources, the concept of consortia has been mooted mainly for acquisition of E-journals.

As the resources that are procured today through the consortium are mainly e-resources, it has become possible for the users to access and download the required materials without even going through the complicated process of inter-library lending. Though library consortia have been created with narrow purpose, these can be turned into efficient instruments for sharing all types of library resources.

By definition, a consortium is said to be “a cooperative arrangement among groups or institutions” or “an association or society”. Library consortium would be organisation of libraries formed to realize the benefit and opportunities of collaborative activity. It is a comparative alliance of libraries to share human and information resources. Hirshon (1999) defines library consortia “a generic term to indicate any group of libraries that are working together towards a common goal, whether to expand cooperation on traditional library services (such as collection development) or electronic information services. It is now used perhaps too broadly, and encompasses everything from legal entitles to information groups that come together solely to achieve better pricing for purchasing electronic information.

3.6.1. Major Library Consortia in India

India is a developing country, due to economic reason, it is not in a position to procure all documents, to subscribe journals and databases. As a result many libraries in India have set up consortia for resource sharing among themselves.
In India, major initiatives regarding consortium are:
1. UGC-INFONET Digital Library Consortium
2. INDEST - AICTE Consortium
3. CSIR E-journals Consortium
4. HELINET Consortium
5. FORSA Consortium
6. IIM Consortium
7. TIFR Libraries Consortium
8. ISI Library Consortium
9. DAE Library Consortium
10. ISRO Library Consortium
11. ICICI Knowledge Park
12. ICMR Library Consortium

The features of successfully operational in Indian Central University Libraries such as UGC-INFONET Digital Library Consortium have been given below.

3.6.2. UGC-INFONET Digital Library Consortium

With globalization of education and competitive research the demand for the journals has increased over the years. Due to scarcity of funds, libraries have been forced to discontinue the scholarly journals, which have great impact to the users. UGC initiated the UGC-INFONET Digital library consortium, to facilitate free access to scholarly journals and databases in all area of learning to the research and academic community across the country.

The UGC-INFONET Digital Library Consortium, a major initiative of University Grants Commission (UGC) in the field of education and research was formally launched in December, 2003 by then president of India, Dr. A. P. J. Abdul Kalam, at Vigyan Bhavan on 28th December, 2003. It was a national initiative for providing access to e-resources including full text and bibliographic databases in all subject disciplines to academic community in India. It facilitates access to high quality e-resources to academia in the country to improve teaching, learning and research. The consortium provides current as well as archival access to more than 7500 core and peer-reviewed and ten bibliographic databases in different discipline from 26 publishers and aggregators. The access to all major e-resources was given 50 universities in first phase in the year 2004. So far 209 Universities including 14 National Law schools and central universities that come under the purview of UGC,
have been provided differential access to subscribed e-resources. In terms of no. of users, the UGC-INFONET Digital Library consortium is the largest consortium in India. The programme is wholly funded by the UGC and executed by the INFLIBNET (Information and Library Network) Centre, Gandhinagar.

At present there are 419 members. The following are the core members of UGC- INFONET:

- Universities covered under phase-I 50
- Universities covered under Phase-II 50
- Universities covered under Phase-III 95
- Associate members 204
- IUCs and other institutions 06
- National Law schools and Universities 14

3.6.2.1. Electronic resources available on UGC-INFONET Digital Library consortium

The Consortium subscribes to electronic resources covering all major subjects, disciplines being taught in universities. It include wide variety of materials such as e-journals, bibliographic databases, Reviews published by scholarly societies, University presses, institutional and commercial publishers. The member institutions provided differential access to these resources based on their needs and activity profile as per the recommendation of the national steering committee.

The resources subscribed by the consortium can broadly be divided in to the following two categories:

- **Full text electronic Resources**
  
  It contains complete articles along with their bibliographic details. The consortium subscribes to full text e-resources from scholarly societies, university presses, commercial publishers and aggregators including American chemical society. American institute of Physics, Oxford University Press, Cambridge University Press, Springer Link, J-Store, Project Muse, etc.

- **American Chemical society (ACS)**
  
  Since its inception of 1876, ACS provides the worldwide scientific community the comprehensive collection of high quality product and services. It provides access to about 3 million pages of original chemistry work from way back to 1879. Citation information for articles is available free of charge with “as soon as published” ASAP
alert service. Table of content (TOC) alerts for published issues are also available. Through the consortium ACS is giving access to 38 current full-text E-journals including the ACS Legacy Archives having back files of all the journals from first volume (American Chemical Society, 2014).

- **The American Institute of Physics (AIP)**
  
  It is a non-profit corporation chartered in 1931 to advance and diffuse the knowledge of physics and its application to human welfare. An umbrella organization for 10 Member Societies, AIP represents more than 134,000 scientists, engineers and educators and is one of the world’s largest publishers of physics journals. It covers fields including physics, chemistry, geosciences, engineering, acoustics, and more. The members of the consortium have access to 18 Full text journals (10 AIP and 8 from AIP’s member societies) with Archival access from 1997 onwards for most of the journals (American Institute of Physics, 2014).

- **American Physical Society (APS)**
  
  APS was founded in 1899. It provides high quality service and products to its members and scientific community. The PROLA (Physical Review Online Archive) search engine is freely available to all users. Access is made to 10 full text journals since 1997 (American Physical Society, 2014).

- **Annual Reviews (AR)**
  
  It provides researchers, professors, and scientific professionals with a definitive academic resource in 37 scientific disciplines. Annual Reviews publications are among the highest cited publications by impact factor according to the Institute for Scientific Information (ISI). The consortia provides access to 33 full-text journals and archival access is provided up to 10 years back issues (AR Journals, 2014).

- **Cambridge University Press (CUP)**
  
  CUP is an academic Publisher in Humanities and Social sciences. It publishes about 1000 new publication annually and about 400 new science publications in the fields of Physics, Earth Sciences, Astrophysics and Mathematics. It leads in the world in areas like Botany and Animal behaviour. Through the consortium, 224 Cambridge University Press journals are available with back-files since 1997 (Cambridge University Press, 2014).
- **Economic & Political Weekly (EPW)**
  
  Economic & Political Weekly (EPW) is one of the Indian publications that enjoy a global reputation for excellence and scholarship, published by the Sameeksha Trust since 1949. The focus of the EPW is economic issues, but it is truly a multidisciplinary publication covering sociology, political science, history, gender and environment studies. The access of EPW is provided to all the universities of the consortium (Economic & Political Weekly, 2014).

- **Emerald**
  
  Emerald has operated for more than 40 years, building a collection of 225 scholarly journals in business and management, library and information sciences, engineering and materials science. As the leading publisher for LIS research, Emerald's Library and Information Studies publications provide comprehensive and quality coverage in all areas of this field. Under UGC-Infonet E-journals consortium access is made available for 29 E-journals from Library and Information Science full text database and archival access is varies from journal to journal (mostly 2001 onwards) (Emerald, 2014).

- **Institute of Physics (IOP)**
  
  IOP is a leading international professional body and learned society and is a major international player in scientific publishing and electronic dissemination of physics. It provides access to 46 full-text top most journals in the area of physic from first volume (Institute of Physics, 2014).

- **JSTOR**
  
  It was established as an independent nonprofit organization in 1995. It offers both multidisciplinary and discipline specific collection. In 2009, JSTOR merged with and became a service of ITHAKA, a not-for-profit organization helping the academic community use digital technologies to preserve the scholarly record and to advance scholarship and teaching in sustainable ways. Currently, there are more than 2000 titles, including previous titles, as well as other content available. New titles and other materials are being added regularly (JSTOR, 2014).

- **J-Gate**
  
  It is an electronic gateway to global E-journal literature updated every day. It was launched by informatics India limited, Bangalore in 2001. J-Gate presently possesses a massive database of journal literature, indexed from more than 41,125 e-
journals with links to full text at 12,356 publisher sites. J-Gate is providing Table of Contents (TOC) from all these E-Journals. J-Gate provides access to 5,453 online-only journals, which are not available in print (J-Gate, 2014).

- **Nature journal**

  It is a weekly international journal of science. It is the world's most highly cited interdisciplinary science journal, according to the 2012 Journal Citation Reports Science Edition (Thomson Reuters, 2013). Its Impact Factor is 38.597. The impact factor of a journal is calculated by dividing the number of citations in a calendar year to the source items published in that journal during the previous two years. It publishes original research articles, letters and brief communications among all the multidisciplinary journals. Since 1997 full text access for nature weekly is available (Nature Journal, 2014).

- **Oxford University Press (OUP)**

  Oxford University Press is a department of Oxford University, which publishes 230 academic and research journals. OUP covers areas such as Life Sciences, Mathematics and Physical Sciences, Medicine, Social Sciences, Humanities, and Law. Through the consortium, 198 Oxford University Press journals are available with back files since 1998 (Oxford University, 2014).

- **Project Muse**

  This programme was started by John Hopkins Press. At present it offers over 400 quality journal titles from 100 scholarly publishers particularly in the areas of Social Sciences and the Humanities. It provides access to about 400 full text journals from 1999 onwards (Project Muse, 2014).

- **Royal Society of Chemistry (RSC)**

  RSC is a professional body for chemist and the learned society for chemistry. It is one of the prominent and influential independent scientific organization in Britain. It provides access to 23 full text journals with six databases from 1997 on words (Royal Society of Chemistry, 2014).

- **ScienceDirect**

  ScienceDirect is a part of Elsevier and its Headquarter is in Amsterdam, The Netherlands. It is the world's largest scientific, technical and medical information provider and publishes over 2,000 journals as well as books and secondary databases. It covers various subjects such as Biochemistry, Genetics, Mol. Biology, Agriculture,
Biological Science, Chemistry, Computer Science, Economics, Immunology, Microbiology, Mathematics, Physics, Astronomy, Social Sciences, Psychology. It provides around 1000 journal titles to Universities under UGC-INFONET Digital Library Consortium with back-files since 1995 (ScienceDirect, 2014).

- **SpringerLink**

  Springer is an international scientific publisher, delivering quality content through innovative information products and services, as well as provider of local-language professional publications in Europe, especially in Germany and Netherlands. It publishers some 2,000 journals every year in the STM sector. It covers publishing fields mainly in science, technology, medicine, architecture, business and transport. Generally consortium provides access through SpringerLink are around 1400 journals. The archival access is provided from 1997 onwards (SpringerLink, 2014).

- **Taylor and Francis**

  Taylor and Francis established in 1798, is the oldest commercial journals publisher in the world, and one of the leading global academic publishers. Taylor & Francis Group publish more than 1100 journals and around 1,800 new books each year. It is a widely known publisher among researchers, students, academics and increasingly professionals. UGC-Infonet Digital Library Consortium can access more than 1365 journals with archival access to 1998 onwards (Taylor and Francis, 2014).

- **Wiley-Blackwell**

  Wiley-Blackwell was established in February 2007 by merging Blackwell Publishing with Wiley's Global Scientific, Technical, and Medical business. With a combined list of more than 1,400 scholarly peer-reviewed journals and this new business sets the standard for publishing in the life and physical sciences, medicine and allied health, engineering, humanities and social sciences. It provides access to 908 journals of Blackwell publishing with back files since 1997, to the members of the consortium (Wiley Blackwell, 2014).

- **Bibliographic Databases:**

  It contains references to articles published in journals, conference proceedings, chapters in books. Most bibliographic databases contain abstract of the articles along with links to their full text.
• **ISID**

The Institute for Studies in Industrial Development (ISID), a sponsored institution of the Indian Council of Social Science Research (ICSSR), is a public-funded, non-commercial research and development institution in social science. ISID has developed databases on various aspects of the Indian economy, particularly concerning industry and the corporate sector. It has created Online Indexes of Indian Social Science Journals (OLI) and Press Clippings on diverse social science subjects. It provides access to Indexes of 125 Indian Social Science journals and major newspaper articles, editorials and news features.

• **JCCC**

J-Gate Custom Content for Consortium (JCCC) is a virtual library of journal literature created as a customized E-journals access gateway and database solution. It acts as a one point access to 7900 journals subscribed currently under UGC INFONET Digital library consortium as well as university libraries designated as Inter Library Loan (ILL) Centers besides index to open access journals. INFLIBNET has identified 22 potential universities as ILL Centers in the country to fulfill ILL request from the users affiliated to universities covered under UGC-INFONET Digital Library Consortium. JCCC has facility to activate e-mail request for article to Inter Library Loan Centers as well as to INFLIBNET Centre.

• **MathSciNet**

MathSciNet is an electronic publication offering access to easily searchable database of reviews, abstracts and bibliographic information of the mathematical sciences literature. Continuing in the tradition of the paper publication Mathematical Reviews (MR), expert reviewers are selected by a staff of professional mathematicians to write reviews of the current published literature; over 60,000 reviews are added to the database each year. Extending the MR tradition, MathSciNet contains over 2 million items and over 700,000 direct links to original articles. This web of citations allows users to track the history and influence of research publications in the mathematical sciences. Access to MathSciNet has started to 50 universities since 2005 covering files of 1940 onwards.

• **Web of Science**

Web of Science, provides access to the world’s leading citation databases. It searches over 10,000 journals from over 45 different languages across the sciences,
social sciences, and arts and humanities with back files to 1900. The citations (or footnotes) allow one to navigate forward, backward, and through journal articles and both journal and book-based proceedings. The access to Web of Science is provided to 100 universities of the consortium through the N-LIST Programme funded by MHRD (UGC-INFONET Digital library consortia, 2015).

3.7. CONCLUSION

Periodical publication is a primary source of information containing the first hand information about the research in progress and development or new interpretation of an old theme or idea. Periodicals are considered the most important form of library’s collection and enlighten the skilled manpower as well as contribute to the development of R&D oriented nation.

The exponential growth of periodical literature has immensely enhanced the need to evolve an effective and foolproof periodical control and management system. This need for establishing an unassailable control method becomes all the more necessary due to the prohibitively exorbitant prices of periodical publications. In libraries of AMU and BHU, Periodical selection is done by the librarian, on the basis of recommendation made by faculty members and students. The subscription of periodicals in both the libraries is through local or foreign subscription agents.

Electronic information sources are attracting reader’s attention in today’s networked environment. Among these sources E-journals open up many exciting opportunities and potential for academic and special libraries. Librarian should be aware of the advantages and disadvantages of E-journals and they should identify and balance the fact that would make E-journals a success or failure in their libraries.

The periodical librarian has always to be on his toes guarding against any possible discrepancy leading to the disruption in the system, in order to develop a useful collection, it is essential to formulate a selection policy for the acquisition of periodicals. The process of selecting and acquiring E-journals is far more complex and cumbersome than print journals. It requires careful review and analyses of many factors such as licensing agreements, vendor aggregator package, consortia package or single library package print plus electronic access, electronic access only and contains coverage. Libraries are facing dual problems increasing cost and the desire to adopt the new and ever changing technologies. Cost of equipments, training of staff and users, ease of access and time spent in updating the software etc. have to be taken in to account while adopting the new technologies. Though subscription to electronic format
is slowly increasing but due to their high cost, substantial numbers of libraries are not able to do so. A possible solution to reduce the subscription cost is consortia approach and minimum possible customisation of number of journals keeping in mind the requirement of subscribing library.

In India library consortium activities are fast evolving. Libraries of AMU and BHU are members of UGC-INFONET Digital library Consortium which provide access to over 7500 full-text E-journals and 10 bibliographic databases from a number of publishers and aggregators worldwide. In the West, Consortium is a thing of past and has flourished to its fullest. However it is gaining momentum in the developing countries like India and in future more and more consortiums would emerge to serve their members with modern technology.

REFERENCES
current issues. *Issues in Science and Technology librarianship.*
doi:10.5062/F49C6VC7
http://www.cas.org
http://epw.in
http://www.emeraldinsight.com
http://www.iop.org/EJ


Chapter-3
An Introduction to Periodicals


