

INFORMATION SOURCES AND SERVICES

B.L.I.Sc., Semester – I, Paper-IV

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B.L.I.Sc.,

First Edition: 2021

No. of Copies:

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Published by:

Dr. NAGARAJU BATTU,

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**Centre for Distance Education,
Acharya Nagarjuna University**

Printed at:

FOREWORD

Since its establishment in 1976, Acharya Nagarjuna University has been forging ahead in the path of progress and dynamism, offering a variety of courses and research contributions. I am extremely happy that by gaining 'A' grade from the NAAC in the year 2016, Acharya Nagarjuna University is offering educational opportunities at the UG, PG levels apart from research degrees to students from over 443 affiliated colleges spread over the two districts of Guntur and Prakasam.

The University has also started the Centre for Distance Education in 2003-04 with the aim of taking higher education to the door step of all the sectors of the society. The centre will be a great help to those who cannot join in colleges, those who cannot afford the exorbitant fees as regular students, and even to housewives desirous of pursuing higher studies. Acharya Nagarjuna University has started offering B.A., and B.Com courses at the Degree level and M.A., M.Com., M.Sc., M.B.A., and L.L.M., courses at the PG level from the academic year 2003-2004 onwards.

To facilitate easier understanding by students studying through the distance mode, these self-instruction materials have been prepared by eminent and experienced teachers. The lessons have been drafted with great care and expertise in the stipulated time by these teachers. Constructive ideas and scholarly suggestions are welcome from students and teachers involved respectively. Such ideas will be incorporated for the greater efficacy of this distance mode of education. For clarification of doubts and feedback, weekly classes and contact classes will be arranged at the UG and PG levels respectively.

It is my aim that students getting higher education through the Centre for Distance Education should improve their qualification, have better employment opportunities and in turn be part of country's progress. It is my fond desire that in the years to come, the Centre for Distance Education will go from strength to strength in the form of new courses and by catering to larger number of people. My congratulations to all the Directors, Academic Coordinators, Editors and Lesson- writers of the Centre who have helped in these endeavours.

Prof. P. Raja Sekhar
Vice-Chancellor (FAC)
Acharya Nagarjuna University

INFORMATION SOURCES AND SERVICES

B.L.I.Sc., Semester – I, Paper-IV

Syllabus

Course Objectives (COs):

1. To familiarize students with a broad range of information source, and services
2. To develop evaluation and practical skills in dealing with information sources and services.
3. To acquaint students to sources of information in new media and information products.

Course Outcomes (COs):

1. The student can learn the various information sources and services. Understand the concept, definition of information services
2. The students identify the primary, secondary, tertiary and internet information sources and CAS, SDI.
3. The students evaluate various information sources and services.
4. They also understand the ready and long range reference sources.
5. The student shall understand the about the biographic sources and their evaluation.
6. The student can also identify the electronic information sources and services.

Unit-I

Bibliographies and Bibliographic Control: Bibliographies-Need and Functions – Types of Bibliographies-Universal, National and Subject –Bibliographic control and organization

Unit-II

Reference / Information Sources: Reference Sources – Nature, Types & Utility; Reference Service – Dictionaries and Encyclopedias – Yearbooks, Directories – Almanacs, Statistical sources – Biographical and Geographical information sources – Current event sources, Serials and Guides to sources

Unit-III

Documentation Techniques & Services: Indexing and Abstracting Techniques – Indexing and Abstracting Services – Current Awareness Service (CAS), Selective Dissemination of Information (SDI)– Literature search and Referral service –Document delivery and Translation services

Unit-IV

Information centers and Systems: Information and Documentation centers – Types and Functions – National and International Systems – Databanks and Databases; Online services

Text and Reference Books:

1. Katz, A.: An introduction to reference work, Vol. II, New York, McGraw Hill.Guha, B.: Documentation and Information, 2nd Ed., Calcutta, World Press, 1982.
2. Krishan Kumar: Reference service, 3rdRev.Ed., New Delhi, Vikas Pub. House, 1987.
3. .Rowley, J.E. and Turner, M.D.: The Dissemination of Information, London, Andre Deutsch, 1978.
4. Kemp, D.A.: Current Awareness Service, London, Clive Bingley, 1979.
5. Rowley, J.E: Abstracting and Indexing, London, Clive Bingley, 1982.
6. Lancaster, F.W.: Information Retrieval Systems: Characteristics testing and evaluation, London, Butterworth.
7. Vickery, B.C.: Techniques of Information Retrieval, 1970.
8. Atherton, Pauline, Ed.: Handbook of Information Systems and Services, Paris, UNESCO, 1981.

INFORMATION SOURCES AND SERVICES

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LESSON – 1

BIBLIOGRAPHIES : NEED AND FUNCTIONS

1.1. Aims and Objectives

This Lesson aims to introduce the concept of Bibliography. After reading this lesson you would be in a position to know

- the meaning and need for bibliography
- Bibliography and other similar tools
- Reference value of bibliographies

STRUCTURE

- 1.1 Introduction**
- 1.2 Definitions and Meaning of Bibliography**
- 1.3 Development of Bibliography**
- 1.4 Need and Functions**
- 1.5 Bibliography and Similar other tools:**
- 1.6 Uses of Bibliography**
- 1.7 Bibliography versus Library Catalogue**
- 1.8 Self Assessment Questions**
- 1.9 Suggested Readings**

1.1 INTRODUCTION

The Term “Bibliography” was first used by Louis Jacob de Saint Charles in his *Bibliographia parisiensis* (1645-50), and became popular in the eighteenth century. It is derived from the Greek words, “biblion” and “graphein.” “Biblion” means “books and graphein” is “to write.” Thus, etymologically bibliography means the writing of books. This is the original meaning given in the Oxford English dictionary, which prevailed during the seventeenth century. Thus, bibliography was originally defined as the writing (in the mechanical sense) and transcription of books.

Later on bibliography included composition as well. This meaning persisted as late as the eighteenth century, when in France, its meaning changed from the “writing of books” to “writing about books.” In this sense the great German bibliographer, F. Ebert defined bibliography as, “in the broadest sense, the science that deals with literary productions.” This led to its being regarded as, “the science of books.” The concept of bibliography as the science of books has important implications. In this new sense, it was first used to study the intellectual aspect of books and thus the history of literature in general, as well as in the scholarly sense was included in it. It was also applied to the history and method of printing, the book trade, book collecting, etc.

Bibliography is considered “as the technique of systematically producing descriptive lists of written or published records (especially books and similar materials),” and is defined “as such a list, so produced,” and is supposed to give sufficient detail to fulfill its aim.

Bibliography is regarded as a humanistic science because it deals with ‘records of human mind’ but it is also scientific in nature as it is ‘analytical and systemic’ in its basic approach to a large extent. The field of bibliography is considered basic to the work of a librarian. Therefore, it is rightly called the heart of librarianship.

1.2 DEFINITIONS AND MEANING OF BIBLIOGRAPHY

Bibliographies are the systematically prepared keys / guide to the literature. They are also called as ‘path finders’ to the literature.

Bibliography may be considered as an art and also a science. The art corresponds to the recording of books as a systematic list, whereas the science corresponds to that of making of books. It includes the technique of book-making, the history of their changing forms, the materials and methods of their construction, the history of their printing, binding, illustration, description and even listing of all kinds of documents.

A bibliography can be current or retrospective. A current bibliography records all books and other materials published currently and are brought out serially at regular periodicity. Whereas, retrospective bibliography is one time document which records the books and other materials, published before a particular date or the documents that were in print on a certain date.

Sir Walter-Greg had defined bibliography as ‘the study of books as material objects’. He has further called it, the science of the transmission of literary documents; and Hume defined it is ‘the science of the organization of recorded knowledge’. Later, Greg has elaborated his definitions as: “Books are the material means by which literature is transmitted; therefore, bibliography, the study of books, is essentially the science of transmission of literary documents”.

V.W. Clapp defined bibliography as ‘the systematic listing of the records of human communication’. This definition includes not only the period and written books but all sorts of graphic records.

According to Louis Shores, ‘bibliography is a list of written, printed or otherwise produced records of civilization, which may include books, serials, pictures, maps, films, recordings, museum objects, manuscripts and any other media of communication. The lists of such records are bibliographies and the art of making them is bibliography. According to Esdaile, “Bibliography is an art and also a science. The art is that of recording books; the science necessary to it, is that of making of books and of their extant record”.

Konrad Gesner, who compiled *Bibliogtheca Universails* in 1554, is considered to be **the Father of Bibliography**.

1.3 DEVELOPMENT OF BIBLIOGRAPHY

Early bibliographies were mostly publishers; trade lists of books, and in libraries, a few catalogues of books were available. The next important step was the compilation of regional catalogues called Messkataloge (fair catalogue) in the second half of the sixteenth century. It was during this period also that Konard Gesner attempted to list all scholarly publications in the world, and the *Bibliotheca universalis* appeared in 1545. National bibliography developed further during the seventeenth century. About the middle of the seventeenth century, descriptive notes began to be appended to the list of books. Subject lists of books became quite common about this time. Towards the beginning of the eighteenth century critical bibliographies also came to be compiled, and subject book lists covering one or more subjects became rather common by the middle of the century. While the listing of periodical articles had become quite common towards the close of the nineteenth century, subject bibliographies listing books and periodical articles were common only during the twentieth century.

There was a time, in the past, when it was possible for a scholar to keep himself up to data and well-informed on current literature in his field of interest. But due to the increase in the amount of literature available, it has become more and more difficult for him to do so.

Quick and easy access to information is vital to the development of various fields of knowledge. Therefore, it is essential that relevant information be brought to the attention of professionals, administrators and researchers who have urgent need of it. In this respect, bibliography plays an important role.

No modern library can function without bibliographical tools like bibliography. It contributes towards the use of books and other materials, thus further promoting the useful application of knowledge. We can go to the extent of saying that science would not be able to advance but for the existence of bibliography. Bibliography is, therefore forms basic material in any reference collection.

1.4 NEED AND FUNCTIONS

The basic aim of a bibliography is to assist the user in locating the existence of or identifying a book or any other material which may be of interest to him. In the case of a researcher, a bibliography enables him to keep himself well-informed and up to date. This avoids duplication in research, saving him both time and money. The secondary aim of a bibliography is to serve as a tool for book selection, the identification and verification of bibliographic details, location of material (in terms of place of publication, location in the library or point of purchase. However, the efficacy of a bibliography depends upon the agency producing it. There are a variety of bibliographies, differing a great deal in their aims.

After World War II, the Developed and Developing Countries improved their R&D activity and ultimately led to the knowledge explosion, has necessitated bibliographies for the control or mastery over both the published and unpublished documents. Bibliographies are highly useful in providing quick and easy access to the information contained in the documents, for various categories of users.

The bibliographies are also important helping the librarians as book selection tools and also in verification of the bibliographical details of documents. The Bibliographies,

particularly, subject bibliographies are not only useful in finding the extent of availability of literature in a subject field, but are also useful in promoting the use of documents. Bibliographies also help in avoiding duplication of research.

Scheider grouped the functions of bibliography broadly into viz., 1) Academic and trade and 2) Bibliophilic.

- i) Bibliography being a systematically compiled list of documents on a subject it serves as a guide to the literature of the subject.
- ii) It locates titles in a given subject and identified its bibliographical details like author, publisher, place of publication, etc,
- iii) It helps to ascertain bibliographical data about an author.
- iv) For acquisition of library materials, bibliographies serve as selection tools.
- v) From a comprehensive subject bibliography, several adhoc bibliographies, on specific aspects of a subject can be prepared.
- vi) For researchers, bibliographies reveal the total output of the knowledge in their subject field and enable them to decide where from they have to start the work. This saves researcher's time, labour and helps avoid the duplication of research.
- vii) Bibliographies create new interest among the general readers, and thereby enhances the use of documents.
- viii) Selective bibliography will be helpful in providing guidance about suitable documents for a particular or a group of users.
- ix) It preserves documents for posterity and performs the function of bibliographic control.
- x) Annotated bibliography determines the usefulness of a document indication the scope of the subject treated in it.

The UNESCO / Library of Congress Report, 1950 summarises the aims and functions of bibliography as:

- i) To make it possible for intellectual workers to learn about publications, recording developments in their fields of interest not only in their own countries but also throughout the world.
- ii) To promote the effectiveness of particular projects in research.
- iii) To contribute to the cultural development and enjoyment which derivable from the records of learning and culture.
- iv) To assist in promoting useful applications of existing knowledge and in making the applications developed in one country widely known to other countries.

1.5 BIBLIOGRAPHY AND SIMILAR OTHER TOOLS

The term Bibliography is synonymously used with catalogues. Broadly, such bibliographical tools include Accession lists. Catalogue, Union Catalogues, Shelf lists, Publishers Catalogues, Book sellers catalogues. Documentation lists, National bibliographies and so an. These tools resemble each other in that they are all basically lists of documents, but are significantly different from one another. The information provided in one bibliographical tool, may be supplemented by the other depending on the requirements, e.g: the information available in the Accession List can be supplemented in the catalogue. Therefore, these tools are important to both librarians and scholars. The basic differences between bibliography and other tools are explained briefly in the following lines:

i) Bibliography and Catalogue

Bibliography and Catalogue are similar for being both descriptive lists of documents. Catalogue is key to the holdings of a particular library. Therefore, it includes information for the documents which are held by a library. It serves as a retrieval tool. That is from a catalogue one can basically know the existence of a documents and its location in a particular library or information centre.

Whereas, bibliography can serve only as an inventory (finding) list, but not as retrieval tool. Because bibliography records all documents, irrespective of their location (available in any library or not) either on a subject or in a language or in a form of language. Therefore, the bibliography has a vast scope than the catalogue, as the catalogue is limited to either one are maintained in the libraries in card form whereas the bibliographies are printed in book form. The bibliography aims at exploring the vast production of graphic materials that have published so far in a given subject.

ii) Bibliography and Index

Bibliography and Index perform the same functions of providing access to the documents in a given subject and therefore, both these are keys to the information. But they are different in their approaches. Bibliography provides approach to a documents, generally, through a single access point i.e., by the name of the (first) author of a document. Whereas index provided access to a document through multiple access points, i.e., from each of the several concepts, created in the document. An indepth analysis of the document is made in indexes and each one of the concepts is provided with an access point, so as to facilitate a user to find out his required information. However, the efficacy of a bibliography depends upon the agency producing it. There are a variety of bibliographies, differing a great deal in their aims.

1.6 USES OF BIBLIOGRAPHY

- i. Finding the Existence of Identification of Documents:
A scholar may know of a document but in order to verify its existence, he has to depend upon a bibliography, which will also assist him in identifying the documents. This is achieved by giving sufficient bibliographic details, like the full names of authors and collaborators, complete title, edition, place and year of publication, publisher's name, notes, etc, so as to distinguish one work from another.
- ii. Book Selection:
- iii. The very purpose intended to be served by a bibliography would indicate the value of the document included in it to a given type of user. This is done by adding a note to each document being listed. A subject bibliography would indicate what is available on a given subject. Similarly an author bibliography would indicate an author's previous publications and soon.
- iv. verification of Bibliographic Details:
- v. In order to identify or verify bibliographic details one has to depend on bibliographies. A good practice is to start with general bibliographies and pass on to specialized ones.
- vi. Location of Materials:
- vii. A user may know what he requires but he may not know whether it exists or where he can find it. For this purpose, a bibliography in the form of a published library

catalogue, printed trade list or union catalogue can give the necessary information on where to obtain his material.

1.7 BIBLIOGRAPHY VERSUS LIBRARY CATALOGUE

A bibliography is an organized list of documents, not limited to a particular collection.

Catalogue is a general term. A library catalogue is a list of documents in the holding of a library or group of libraries. A library catalogue can serve as a bibliography but the reverse is not true. The catalogue of a special collection of a given library can serve as a subject bibliography in a particular field.

Bibliography is only one of the bibliographical tools which include library catalogues, publisher's catalogues, bookseller's catalogues, shelf lists, accession lists and so on.

A library catalogue serves both the inventory (listing) and retrieval (finding) functions, while a bibliography serves only the former. Thus these tools perform different functions but contain sufficient information to serve those functions. In actual practice, the functions of a library catalogue are decided in relation to other bibliographical tools. However, the basic aim of a library catalogue remains to serve its users in a most efficient practical manner. Scholars, for their specialized requirements, are expected to depend on bibliographies. A cataloguer should feel satisfied if a catalogue is able to meet the requirements of ordinary users. Sometimes, the terms bibliography and catalogue are used synonymously.

The concept of bibliography has changed a great deal. Currently, in our context, it may be considered the technique of systematically producing descriptive lists, such a list being called a bibliography. We have come a long way from early trade bibliographies which were crude in nature. Bibliography forms basic material in any reference collection and is of fundamental importance, this importance is increasing with the passage of time.

1.8 SELF ASSESSMENT QUESTIONS

1. Explain the concept of Bibliography and bring out its relation with other tools
2. Bring out the reference value and functions of Bibliography

1.9 SUGGESTED READINGS

William A. Katz, *Introduction to reference work*, 2nd ed., vol. I, New York, McGraw Hill, 1974, pp.25-28.

Girja Kumar And Krishna Kumar, *Theory of cataloguing*, 5th ed., Delhi, Vikas Publishing House, 1986, pp.10-14.

S.R. Ranganathan, *Physical bibliography for librarians*, 2nd ed., Bombay, Asia Publishing House, 1974, pp.17-21.

----- *Reference service and bibliography*, Madras, Madras Library Association, 1940, vol. I, pp. 361-372.

A.M.L. Robison, *Systematic bibliography*, 3rd ed., London, Bingley, 1971, pp. 27-30.

Archie G. Rugh, " *Catalog, bibliography, or index*," RQ, 13,1973, pp. 27-30.

Georg Scheider, *Theory and history of bibliography*, Ralph Robert Shaw, trans., New York, Scarecrow Press, 1961, pp. 13-36, 271-293.

Roy B. Stokes, *Bibliography, Encyclopedia of library and information Science*, New York, Dekker, 1969, vol.2, pp. 407-419.

LESSON 2

TYPES OF BIBLIOGRAPHIES

AIMS AND OBJECTIVES

This lesson aims to explain the various kinds and types of bibliographies. After reading this lesson you would be in a position to understand the concept of

- Kinds of Bibliographies
- Universal Bibliographies; Incunabula or Book Rarities Bibliographies; Trade Bibliographies; National Bibliographies and Subject Bibliography

STRUCTURE

- 2.1 Introduction**
- 2.2 Kinds of Bibliographies**
- 2.3 Universal Bibliographies**
- 2.4 Incunabula or Book Rarities Bibliographies**
- 2.5 National Bibliography**
- 2.6 Subject Bibliography**
- 2.7 Trade Bibliography**
- 2.8 Self Assessment Questions**
- 2.9 Suggested Reading**

2.1 INTRODUCTION

A bibliography, according to the Shorter Oxford English Dictionary, is ‘a list of books of a particular author, printer, country, subject’. This therefore, implies that bibliographies may be of various types such as author bibliography, trade bibliography, national bibliography and subject bibliography. But this definition seems to be inadequate for two reasons—first, it includes only books and no other material and secondly, it excludes such other varieties as bibliography of bibliographies, general or universal bibliography, book rarities bibliography, bibliography of localities and the like. In fact, bibliographies may be of a wider variety of types constructed according to the variety of purposes. Within each of these varieties again there may be a variety of refinements such as comprehensive, selective, evaluative and others each of which again has its own uses for different classes of readers. For example, if one wants to know about everything that has been written on a subject he is to consult a comprehensive bibliography on the concerned subject. Another interested in knowing about only the best of standard works on a subject or of an author requires a selective bibliography on the concerned subject or of the author.

2.2 KINDS OF BIBLIOGRAPHIES

Several authorities have categorised bibliographies in several ways. However, the following five kinds of bibliographies are well recognized.

- i) **Systematic or Enumerative bibliography**
- ii) **Analytical or Critical bibliography**
- iii) **Descriptive bibliography**
- iv) **Textual bibliography, and**
- v) **Historical bibliography**

1. Systematic or Enumerative bibliography

The examination of individual books in order “to assemble the resulting entries, simple or elaborate as the case may require, into logical and useful arrangements for reference and study” is called systematic bibliography. In simple words, the listing of individual items with minimum details is known as systematic bibliography. Describes and arranges all graphic materials irrespective of their form and language according to their affinity with each other for reference and study. Its primary function is of listing individual items/works, in a logical or useful manner the most important function of enumerative bibliography was purely recording. The criteria or the order of arrangement of entries in a bibliography can be either alphabetically by author’s names or chronologically by the year of publication or subject. But the order should serve the purpose, for which the bibliography is prepared.

eg: Books in print (New York; R.R. Bowker)
Subject Guide to Books in Print (New York; R.R. Bowker)
Whitaker’s Books in Print (London: Whitaker)
Indian Books in Print (Delhi: Indian Bureau of Bibliographies)

This bibliography can also called as “Reference Bibliography” by Hibbard. Systematic / enumerative bibliographies are the most used reference tools by the research scholars and other library users. According to Sir Walter Gregy, “ Books are the material means by which the literature is transmitted and so bibliography is essentially the science of the transmission of literary documents”. Thus, the very purpose of systematic bibliography is to disseminate information and guide the reader in his own chosen field.

2. Analytical or Critical Bibliography

An analytical or critical bibliography involves investigation of the physical nature of the book . In order to describe the given volume of a book, a bibliographer finds out which work or works the given volume of a book contains, which edition it is and whether it is a perfect copy. It deals with a physical description of the book. In case a book does not give the required facts on its face then much research will have to be carried out to establish satisfactorily, information about the authorship, edition, date, place or printing and perfection of the copy.

Analytical or Critical bibliography means a detailed study of a book from the half title to the printer’s colophon at the end, i.e., it analyses various procedures and stages through which a book had to pass before it became a finished product.

A good number of rare/early printed books do not contain information regarding the printer, place of date of publication, etc. The manuscripts sometimes are equally terse and do not contain the basic details. These basic facts are to be found out, before a bibliographer start a systematic listing of such documents.

It is often by rich experience and research that the authorship, date and place of printing and each section of a copy can be satisfactorily established where the book does not bear these facts on its face". Thus, Analytical bibliography investigates into the essential details of the documents which are either lacking or where there are discrepancies in their transmissions from one edition to the other, or from one form to the other. Derek Williamson, states Analytical bibliography as a careful and systematic examination, attempts to discover the life study of an extant books as a physical object.

The application of Analytical method, for finding out information takes the form into (a) Descriptive Bibliography, and (b) Textual Bibliography.

3. *Descriptive Bibliography*

This is the end product of analytical or critical bibliography. "Its function is primarily that of recording the bibliographic detail of a book which has been established during the process of analytical bibliography"

It is concerned with the application of Analytical to the external form of the book. Descriptive bibliography merely records the collation of books. Thus, the work of descriptive bibliographer is to describe each rare item on hand and state to what extent it differed from the ideal copy.

The books of olden times, were produced with colourfulness, glitter and splendour by the early printers, illuminators and binders. Descriptive bibliography takes note of all these aesthetic features and describes them in detail for the benefit of all those who are interested in such books.

4. *Textual Bibliography*

This is the end-product of analytical or critical bibliography. It is the application of analytical bibliography to the contents of books. It is a bibliography applied to textual studies. The chief purpose of such a bibliography is to determine the effect of writing or the printing process on the correctness or completeness of a text. It helps ascertain the variety of authorship, edition, etc. Thus textual bibliography deals with textual variations between a manuscript and the printed book or between various reprints or editions.

An analytical bibliography is concerned more with the physical aspects of the book, whereas textual bibliography is more interested in the author's words and tries to determine the exact words that the author intended should constitute his work. The aim is to prepare definitive editions of the original authors.

We can say, therefore, the textual bibliography is an area which seems to be of great importance for literary critics rather than librarians or bibliographers.

5. Historical bibliography

The study of books as objects of art may be termed as historical bibliography. It is concerned with the history of the making of books i.e., the history of writing, printing materials, illustrations, illuminations and binding. Historical bibliography cover history, art literature and technology, through the study of the evolution of writing, the invention of printing and the development of writing materials and binding.

Types of Bibliographies

The branches of bibliographies, viz., Analytical, Descriptive, Historical, Textual and Enumerative of Systematic, for a general library user of librarians, bibliography means. Systematic of Enumerative bibliography only, and not the other branches of bibliographies. As we discussed earlier, 'Systematic bibliography' is a straight forward listing of documents in an order to suite to a particular purpose or utility.

Systematic bibliographies could be of various types such as author bibliography, trade bibliography, national bibliography, subject bibliography, etc. Each type again will have further divisions depending upon the degree of comprehensiveness, selectivity etc., i.e., comprehensive selective, evaluation bibliographies. Each of such bibliographies is aimed at a particular user group.

Systematic bibliography is divided into various types on the basis of certain characteristics. Arundell Esdaile in his work, students Manual of Bibliography has divided bibliographies into two broad classes, viz., primary and secondary bibliographies. Primary bibliographies are those which are the original record of the whole or part of documents. These bibliographies are compiled at the source of production of documents or at the government agency where documents are received through the Copyright Act of the country. Publishers' catalogues and national bibliographies belong to this category of bibliographies. Secondary bibliographies are those which list the material, already registered / recorded elsewhere, and is rearranged for the convenience of research. That is, the documents already recorded in primary bibliography are selected, and rearranged either by author, subject, period, language, form etc. The subject bibliographies and documentation lists prepared by librarians are good examples of secondary bibliographies.

A majority of the scholars prefer to categorize the bibliographies into I) General and II) Special bibliographies. However, universal bibliographies, national bibliographies, language bibliographies can be categorized as general bibliographies, whereas, author bibliography, subject bibliography, bibliography of bibliographies are categorized as special bibliographies.

2.3 UNIVERSAL BIBLIOGRAPHIES

Arundell Esdaile has divided bibliographies into two broad classes: Primary and Secondary. In any field of research it is the primary duty of both the scholar and the bibliographer to know first how far knowledge has been unfolded on their subject up to the present time. The scholar can, however, very easily come to know of it if he can find out an appropriate up-to-date bibliography on his chosen field. A bibliography which records for the convenience of research all such materials as have already been recorded elsewhere is known as secondary bibliography. Secondary bibliographies, as such, stand distinctly

separate from primary bibliographies which are nothing but the original records, either in whole or in part, of books and other materials contained in them. From this it follows that the universal or general, trade and national bibliographies which are the original records of their contents are primary bibliographies while subject, author and personal bibliographies and even bibliography of bibliographies in which works already recorded in primary bibliographies are selected and re-arranged for the convenience of research fall within the category of secondary bibliography. Though universal bibliographies and publishers' trade lists and special lists of writings may be of some use at times to the scholars and researchers, they are more useful to big libraries than to scholars and so far as select lists are concerned they can help librarians a good deal in selecting books, but they are almost useless to research workers because the research workers do not require to know only the best books on their subjects but everything that has been written on them.

Systematic bibliography, whether primary or secondary, covers a wide variety of types of which we shall first illustrate and discuss those which fall within the range of primary bibliography.

i. General or Universal Bibliographies and their Importance

The term 'universal or general bibliography, is a wide, comprehensive and nearly complete survey of the records of civilization in every field of knowledge and is not, therefore, restricted to any time, place, language, subject or country. That is to say, a general or universal bibliography should include all books wherever they are produced and in whatever language and in whatever period of human history they are brought out. Bibliography is a systematic listing of documents. Universal bibliography means listing systematically all documents produced in the world from ancient times till date. It implies listing of all records covering all fields of knowledge not restricted by time, country, language, subject and form. The factors considered for the compilation of a Universal bibliography are: a) Documents; b) Languages; c) Subjects; d) Countries; and e) Time.

- a) Documents: Records of all forms, i.e., books, periodicals, reports, manuscripts, films, pictures, etc., both published or unpublished should be covered in a Universal bibliography.
- b) Languages: There are thousands of Languages all over the world. Documents are created in big or small quantity in all of them. The Universal bibliography lists documents produced in all Languages in the world.
- c) Subjects: Documents are produced on various kinds of subjects. No subject is excluded from the Universal bibliography. It should be all comprehensive covering records of all subjects of knowledge.
- d) Countries: the Universal bibliography should cover the documents produced in all countries with no exception.
- e) Time: Documents are produced from the beginning of human history. Documents both published or unpublished of all times should be covered in the Universal bibliography.

Definitions:

S.R. Ranganathan defined Universal bibliography as " a bibliography to be universal should include all published materials, whether books or part of them or periodicals or articles in them or combination of them on all subjects in all languages in all countries at all times".

Girja Kumar and Krishan Kumar in their book, Bibliography defined “ Universal bibliography is that which lists all documents of all kinds of materials, produced in all countries, in every language, at any time, and on all themes”.

From the above definition one can infer Universal bibliography which lists all documents irrespective of geographical area, language, form or time that may have ever appeared in the world.

Attempts at Compilation of Universal Bibliography:

The man who first gave realistic expression and form to the Universal bibliography was Konrad Von Gesner. He provided a working basis for bibliography and classifications and thus can be considered as one of the founding fathers of Bibliography. Which represented the medieval consensus and was to also an advancement as general. Further in 1555, he published Appendix Bibliotheca, a further listing of 3,000 titles. He thus listed in all 15,000 works by 300 authors in Latin, Greek and Hebrew.

Difficulties in Compiling a Universal Bibliography

The main purpose of General or Universal Bibliography is to acquaint the readers in every country with the literary output of the whole world. This naturally implies that the task is stupendous, if not virtually impossible. This is definitely an ideal in as much as this will help the intellectual community of the whole world to know one another, to know one another's literary works, cultural heritage and scientific progress and thus make them feel the oneness of man and oneness of the world which is sure to promote international understanding and strengthen the forces of world peace. But like all ideals this is also to remain as an ideal and a dream. The reasons why it is not possible to compile a complete General or Universal Bibliography in modern times may be summed up in the following words:

- (i) The languages are so numerous in the world today and books and other reading materials published in them are also so great in number that it is practically impossible to come to know of them all.
- (ii) The number of subjects and topics on which books, periodicals etc are coming out is also so varied and numerous that it is difficult to master them all.
- (iii) Even if it is possible to understand all subjects and know about all documents the compilation of a bibliography of such a huge quantity of documents will still present a baffling problem because institution or society can supply the resources and manpower required for such a huge project.
- (iv) The number of current documents is also so appalling that it is simply impossible to record them all.
- (v) The arrangement of such a bibliography poses another question. Mere alphabetical arrangement will be of no use. Even if classified arrangement is followed, there is no classified scheme which can meet all the demand.
- (vi) There are again a lot of books of which only the titles are known and no other information is available.
- (vii) Conversely there are some books about which bibliographical and other information is available, but the books themselves are not available for verification and search enquiry.
- (viii) Lastly, even if it is possible to compile a general or universal bibliography, to keep it up to date and to bring it out in print will be no easy task. The sheer bulk of such a bibliography comprising a huge mass of written, printed and otherwise

produced documents makes it impossible to be brought out in print in modern times.

Attempts were made in the past to compile such a bibliography. The pioneering attempt in this regard was made by Konrad Gesner, a profound scholar and a renowned physician of Zurich who succeeded in bringing out in 1545 his *Bibliotheca Universalis in tribus linguis: Latina, Graeca et Hebraica*.

- A. 1. Gesner, Konrad. *Bibliotheca Universalis in tribus Linguis: Latina, Graeca et Hebraica*. Zurich, 1545.

This was the first bibliography of its kind compiled by a famous 16th century physician and philologist. It described in detail 12,000 books in three learned languages of the time : Latin, Greek and Hebrew and was arranged alphabetically under the authors' Christian names. In 1545 Gesner brought out another work *Pandectarum sive partitionum Universalium* in which he rearranged the items of his original work, under subject. In his last work *Appendix Bibliotheca* which was published in 1555 he made a further addition of 3000 books. Gesner thus listed 15,000 books in all in the three aforesaid classical languages. Though there were as many as 40,000 extra titles from the beginning of printing till 1540, Gesner, father of bibliography as he is rightly called, recorded only 15,000 books because these were, from the intellectual stand point, considered to be of great value, the vernacular books having been looked down upon in those days. The arrangement of entries in this bibliography and the classification scheme evolved in it are, according to Sayers, a true hierarchy of Knowledge. Quite a good number of books listed in it are not found even in the British Museum Catalogue. Hence its value is immeasurable.

2. Brunet, Jacques Charles. *Manuel der Libraire et de l'Amateur de Livres*. 5th ed. Paris : Didot, 1860-80. 9v.

This is the most widely known and one of the most effective of universal bibliographies. This lists more than 40,000 important works and is especially strong in French and Latin items. This provides us not only with the author list but also with a subject index, the arrangement of which is followed with some modifications even now in some libraries. Each entry gives author, full title, imprint, size and number of volumes, and in the case of rare books also bibliographical and critical notes describing the various copies and editions and proving at times even the facsimiles of the title-pages.

There has been little attempt in modern times at providing Universal Bibliographies on a wide scale since their need is now more or less met by National Bibliographies as well as by published catalogues of great national Libraries such as the catalogues of the British Museum, the *Bibliothèque Nationale*, the Library of Congress now superseded by the National Union Catalogue of the U.S.A and so on. Taken together, they make a very near approach to Universal Bibliography. More over, as these catalogues have been prepared with utmost care and accuracy after a good deal of scholarly investigation, they give us a mass of valuable information on such points as full names of authors, the identity of pseudonymous and anonymous authors and so on. Lastly, as most of them are provided with subject indexes.

National Library Catalogues

3. British Museum. *General catalogue of printed books* 95 v. 1881-1900 pl. 1900-1905. Superseded by a new edition 1900. commencing publication since 1931, 263v., 1931-1966.

Since it records the great national collection of England it constitutes a major bibliographical tool for any library not only in the English speaking countries, but also elsewhere. It is arranged in an alphabetical order of authors and the contents of a main entry are itemized as follows: heading, description of the contents of the book, imprint and if

necessary, also a note. This catalogue is however, provided with the subject indexes regularly published since 1881. The standard of accuracy and reliability of this catalogue is very high.

Its Usefulness

Through the collection of the British Museum is not the largest in the world, it is perhaps the richest and most varied because it contains not only British publications but also those of the British colonies. As the British Museum has been the depository of the British publications and was also the depository of all publications of British India, its catalogue is an invaluable asset to scholars and researchers who want to learn or probe into any aspects of Indian life relating to the British days. Indeed the collection of the Indian publications of the British Museum is so rich and comprehensive that Indian scholars, research workers, bibliographers and bibliophiles are to consult even now the British Museum catalogue to trace out their required materials on Indian topics. Besides, the British Museum catalogue of printed books is also the only source of bibliographical information about early printed books on and in India. It is for all these reasons that the catalogue of this library is an indispensable tool for scholars, researchers and librarians in India.

But it is of great value not only to Indian scholars; its importance and usefulness is great to others in other parts of the world as well. Since it records publications not only of Britain but also of other countries, in different languages of different subjects and at different times and since it serves the purposes of both retrospective and current bibliographies its importance and usefulness a bibliographical tool to any large research library is beyond question.

4. Library of Congress, Washington. A catalogue of books represented by Library of Congress printed cards, 191v, 1942-1955, with supplements from January, 1956 as 'The National Union Catalogue: a cumulative author list, representing Library of Congress printed cards and titles reported by other American libraries, 1956 to date.

This is America's national equivalent of Britain's British Museum catalogue and perhaps the best example of a continuing catalogue. Entries in it are full and hence they offer a good deal of professional information to librarians. It includes books, maps pamphlets, atlases, periodical publications, music, films and filmstrips. The contents of the main entry are in the order of author, title, imprints, collection, notes, subject heading and class-mark. If, however, there is no author, the entry is made under the title. As regards bibliographical details, they include the full name of the author, the dates of his birth and date, full title, the place of publication, publisher's name, date of publication, collation, series, edition, notes on contents, history, the Dewey decimal class number and the standard Book number. The National Union catalogue represents the stock of the Library of Congress and also of nearly 800 large American libraries and hence it may be regarded more or less as the record of America's national collection.

The National Union catalogue is brought out by the Library of Congress in collaboration with the Committee of Resources of American libraries set up by the American Library Association. As the National Union Catalogue represents national collection of the United States from 1956 only, the Library of Congress undertook the work of compilation of the National Union Catalogue: Pre-1956 Imprints from 1968 and has already succeeded in bringing out 450 Vols. As and when it will be completed, it will record as many as 10 million titles of the Library of Congress and nearly 800 other important American libraries and run into more than 600 volumes.

The 1958-1962 supplement of N.U. Catalogue has increased its usefulness further by enlarging its coverage. It also includes books and other reading materials in various oriental languages like Arabic, Chinese, Japanese, Korean and Indic languages, Entries are also made in the scripts of the languages in which these documents originally appeared. Roman scripts are used only for headings and subject headings in order to maintain uniformity and continuity required for a Union Catalogue.

British Museum Catalogue vs National Union Catalogue

The importance of the National Union Catalogue is very great in view of its wide national and international coverage as well as inclusion of huge quantity of current literature hardly found in any other national library catalogue. Though it is not as rich as the Catalogue of the British Museum in respect of its past holdings, its coverage, however, of contemporary materials is remarkable, far surpassing that of the British Museum Catalogue. Moreover, as it is being constantly kept up to date through monthly and annual supplements, the readers and researchers can easily come to know of even the latest publications in their chosen fields. The British Museum Catalogue is a laggard in this respect. The bibliographical accuracy in N.U. Catalogue is excellent and the technical and professional acumen is commendable. Lastly, since it follows the Anglo-American Cataloguing rules which are very popular everywhere, readers find it easy to use this catalogue while the British Museum Catalogue, based as it is on British Museum rules which are backdated present difficulties to all those who are unfamiliar with them. At any rate, a dispassionate comparative study of the two famous national library catalogues is sure to reveal one patent fact that each is good in its own way and the two together hold the field. That is to say, the two are complementary to each other and none is complete in itself.

5. Bibliotheque Nationale. Catalogue General des Livres Imprimes:

Anteurs. Paris : Imprimerie Nationale, 1897 to date.

It is one of the most important general bibliographies of French publications. It represents the holding of the National Library of France and as such, it adequately serves the purpose of a bibliographical tool of great magnitude. Each entry gives the author's full name, title, edition, imprint, collation and sometimes notes and reprints from periodicals and so on. Entries are analytical and the quality of cataloguing is of a very high order. There are, however, no entries for anonymous works, Govt. and corporate authors and periodicals. The bibliographical information about each book listed in it is however, remarkably accurate. This catalogue, on the whole, is an excellent bibliographical tool that serves as the prime source of information on all French books. As the Bibliotheque Nationale receives all books published in France according to law, its catalogue is not only comprehensive but also highly representative of literature of all kinds published in different subjects and in French and other languages within France. The only drawback of this catalogue is that its production is very slow.

6. National Library, Calcutta, Catalogues

The National Library, Calcutta, the premier library in India has been the forerunner even in respect of the publication of printed catalogue. In its early phase it was the Calcutta Public Library which in course of time was amalgamated with the then Imperial Library in 1903, which was renamed The National Library in 1949, two years after independence. The Catalogue of the Calcutta Public Library was first published in 1855. Late Bepin Chandra Pal, the famous orator and statesman who was appointed the Librarian of the Calcutta Public Library took up the work of compilation of the Catalogue on new lines. The Catalogue of the Calcutta Public Library was again published in 1989. John Macfarlane,

the first Librarian of the Imperial Library published catalogue of a considerable number of volumes sometime in 1905.

The National Library has a large number of printed catalogues of which the Author Catalogue of Printed Books in European Languages (10 vols) and its supplements, Subject Catalogue of Printed Books in European Languages (2 vols), 2 Author Catalogue of Printed Books in Bengali Language (4 vols), Catalogue of Sanskrit, Pali and Prakrit Books (2 vols), Bibliography of Indology (3 vols), Catalogue of Periodicals, Newspapers and Gazettes (vol I, published in 1956), THE LIST OF DOCUMENTS IN Sir Tej Bahadur Sapru's private papers known as The Sapru Correspondence: A Check List (pub. In 1961), Catalogue Raisonne of the Buhar Library (Arabie Mss 2 vols published in 1921 and 1923) and Catalogue of Printed Books in the Ashutosh Collection (4 vols) are most important.

2.4 INCUNABULA OR BOOK RARITIES BIBLIOGRAPHIES

This type of bibliography lists the records printed in the 15th century, the cradle period of printing. It is highly useful in as much as it records the materials at once rare and valuable. The compilation of such bibliographies is often very difficult since most of the records, printed as they were in the pioneer period of printing, do not possess some of the basic facts such as author's name, title, printer's name, place and date required for entry. It is often by much bibliographical investigation and research that the bibliographer can establish these facts. Such bibliographies are therefore, as a rule the work of bibliographic scholars and researchers. Most of these bibliographies are complete since the materials listed in them belong to a limited period of time. A few examples are given below:

7. Hain, Ludwig F.T. Repertorium bibliographicum and annun MD. 2v
in 4. Stuttgart: Cotta 1826-38 (reprinted 1920, 1925 and 1948).

Hain is important for he lists most of the important works (16,000 incunabula) published before 1504 with as much accuracy and details as possible. But it is difficult to use his bibliography because of the code of abbreviations he has used to provide the number of leaves, typographical notes and others.

8. Proctor, Robert, Index to the early printed books in the British
Museum to 1500, with notes on those in the Bodleian library, 4v.
1989-1899.

It is a wonderful piece of work in which not less than ten thousand incunabula have been arranged on typographical evidence, first by countries and then by presses, sub-arranged chronologically. Indexes of authors have also been provided in this work.

9. British Museum. Catalogue of books printed in the XVth. Century
now in the British Museum, 1908 to date.

The monumental work has reached its ninth volume which was published in 1962. A photo-litho reprint of the first eight volumes was brought out in 1963. Entries in it are arranged in Proctor-order as described above.

10. Early Indian Imprints: an exhibition from the William Carey
Historical Library of Serampore, compiled by Katharine Smith Diehl,
Serampore, West Bengal. The Council of Serampore College, 1962.

It is a comprehensive list of 330 books printed in India before the close of the year 1850. The items included in it have been selected from a larger catalogue, being prepared with great bibliographical accuracy, of all such early Indian imprints now in the William Carey Historical Library at Serampore College, West Bengal.

2.5 NATIONAL BIBLIOGRAPHY

National Bibliography means lists of books published in a given country. That is to say, it is a comprehensive, almost complete record of both written and printed output in a given country, furnishing description and supplying verification which cannot be found in the less complete bibliographies. This record is, therefore, often referred to as 'national literature'.

Importance of a National Bibliography:

Information and knowledge explosion in the modern world necessitated the bibliographical control at the international and national levels. The universal bibliography and the national bibliography are the tools for this purpose. The national bibliography systematically organizes the total output of records and provides for their retrieval and verification. It is an authoritative and basic record for the preparation of subject and author bibliographies.

Purpose:

The national bibliography serves three-fold purpose. In the words of S.R. Ranganathan, the three purposes are : a) Cultural purpose; b) Economic purpose; and c) Educational purpose.

- a) Cultural purpose: The national bibliography as a register of national literature disseminates knowledge and facilitates communication.
- b) Economic purpose: It provides information about the documents concerning their publishers, place of publication, etc. and enables for their location and acquisition. Thus, it saves the valuable time of one and all.
- c) Education purpose: By reporting the total macro and micro documents produced in a country and about a country, the national bibliography serves as a source tool for book selection.

Use and Utility

The use and utility of a national bibliography are manifold. Some of them are:

- a) It serves as a bibliographical control of vast mass of documents produced in a country in conventional and non-conventional forms.
- b) It is a total register of the cultural heritage of a country.
- c) It provides information for quick and easy access to the literary output of a nation.
- d) It saves the time of scholars by providing them a comprehensive list of documents on the subject/subjects of their research and also informs the latest additions in such subject domains.
- e) It serves as an authoritative and accurate tool for book selection in libraries.
- f) It helps to avoid duplication of research and saves money and energy at the national level.
- g) It serves as a guide to the book trade by identifying the various bibliographical details of each publication.
- h) It transmits knowledge and scholarship of a nation to the present and future citizens of that nation.
- i) It helps the general reader to pick and choose books of his interest and thus the reading habits.
- j) It is the sine qua non of the national development and progress.
- k) It is a basic tool for the preparation of other kind of bibliographies.

- 1) The national bibliography by providing the bibliographical control at the national level helps the universal bibliographical control at the international level and serves as a resource sharing tool between nations.

Definitions:

The term national bibliography was defined variously by various authorities, some of the definitions are given below:

- 1) The Librarians Glossary defines: “ A bibliography of books produced in the language of one country, irrespective of the country in which published, about the country, by the natives of country, irrespective of residence and of books produced in the country, whatever their language”.
- 2) ALA Glossary of Library Terms defines: “ A list (or, collectively, lists) of works published in a country or elsewhere or written in the language of country”.
- 3) Girja Kumar and Krishna Kumar in their book, Bibliography define it as: “AS national bibliography should record all documents, published or unpublished, irrespective of the agency issuing them, covering trade as well as non-trade items, irrespective of the form of material, language, subject or time of publication. It follows that the totality of bibliographical tools relating to the output of a nation, taken together go to form a complete national bibliography.”
- 4) S.R. Ranganathan in his book, Classified Catalogue Code, (Part S) defines: “A national bibliography is a list of documents.
 - i) published or unpublished in all forms;
 - ii) produced within the country; or
 - iii) in the language of the country, whether produced within or outside the country; or
 - iv) on the country, whether produced within or outside the country; or
 - v) by the natives of a country, whether produced within or outside the country;
 - vi) on the country and on the natives of a country, whether produced within or outside country; or
 - vii) on the thought created in the country, whether produced within or outside country; or
 - viii) all of the above or any combinations of them.

The Library of Congress classification includes under the national bibliography of a country the bibliography of

- a) books printed and published in that country,
- b) books by native or resident authors,
- c) books written in the language of that country by foreigners and
- d) the country as subject: i) general ii) literature iii) biography, iv) history and v) description.

But this definition seems to be very broad and National Bibliography is now concerned with the publications in a given country which are delivered to the National or some other libraries in accordance with the Act or Acts prevailing in that country for the registration and delivery of book. If this is so, the compilation of National bibliographies has now become primarily the task of National or other libraries-the delivery stations though the assistance from other sources, commercial and professional, is not to be minimized. Indeed the association of book dealers and publishers, the library associations and individual bibliographers may co-operate with the professional staff of the National or the National Central Library in preparing a comprehensive National Bibliography.

Scope and Coverage:

The national bibliography should record the totality of macro and micro documents produced in the territories of a nation and concerning the nation and its thought by the natives and others anywhere in the world. The scope of it ought to be broad and coverage should be exhaustive. Its aim is complete bibliographical control at the national level and thereby obtain a complete listing for the whole world through cumulation of all national bibliographies.

The UNESCO Conference on the Improvement of Bibliographical Services held in Paris in 1950 recommended the following eleven categories of current national bibliography to form a complete national bibliography. They are:

- a) General national bibliography of books and pamphlets, these, government publication published and on sale;
- b) Books and pamphlets published but not on sale;
- c) Index to important articles in periodicals and newspapers;
- d) Maps and atlases;
- e) Musical works;
- f) Audio-visual material;
- g) Unpublished theses and academic publications;
- h) Local government publications;
- i) Directories of current periodicals and newspapers;
- j) Publishers and booksellers; and
- k) Learned societies, institutions and libraries.

There are differing views on the above plans of coverage but presently most of the national bibliographies due to the availability of automation are moving towards it. Complete bibliographical control at the national level is a prerequisite in achieving universal bibliographical control.

Uses of National Bibliography:

National Bibliography has a noble purpose. Its motive is purely intellectual. It serves various purposes.

- 1) it provides the readers with an effective access to their own intellectual resources by maintaining a record of the currently published materials of all kinds on all subjects in the language or languages of the country.
- 2) It brings every published book promptly to the notice of all those who may be helped by knowing about it.
- 3) It helps scholars in treasure of the nation.
- 4) It lends service not only to the present generation of readers but also to future generations.
- 5) By maintaining records of intellectual resources it helps build the future history of the nation.
- 6) Its purpose is not to control publication but to encourage literary production and intellectual activities.
- 7) It helps in the transmission of literary document, from one generation to another.
- 8) This is the only method by which the huge literary output of a country can be brought under effective bibliographic control. It also gives an idea to the users if the country is advancing or regressing in respect of literature, science and culture.
- 9) It also serves as a standard reference work and a tool for book selection. This may also serve as a guide for cataloguing to the librarians and Library workers.

Composition of a National Bibliography

The production of various macro and micro documents in a nation is an endless process. The national bibliography which prepares lists of such documents needs to be a continuing process. The current national bibliography is therefore published either as a weekly or a monthly periodical on a regular basis with quarterly, half-yearly and annual cumulations. For an effective functioning of a national bibliography, certain prerequisites such as continuous supply of source material, an issuing agency, standard practices of classification, cataloguing and arrangement are essential.

All the material produced in a nation and about the nation should be available for physical verification and inclusion in a national bibliography in order to make it as exhaustive as possible. It is only possible through an act such as legal deposit act or copyright act or delivery of books act. The publishers are required under the provisions of the act to submit certain number of free copies of their publications either at the national library or at the bibliographical center, which undertakes the publications of national bibliograp. Hence it is the best source for acquiring all the documents produced in a nation automatically on a continuous basic.

According to Ranganathan there are four categories of bibliographical agencies such as International (General) center, International(Special) center, National (General) center, and National (Special) center. These are responsible for bibliographic control. In the absence of national library, a bibliographic center or a trade agency can undertake the responsibility of the national bibliography.

Arrangement of entries in main part of national bibliography may be either alphabetical or classified order. The main part should be supplemented with indexes for author, title, subject, series etc. The bibliographic description should follow a standard catalogue code such as AACR or Classified Catalogue Code. Further they should have facility for adoption of automation also.

National Bibliographical activities in India:

The national bibliographies may be either current or retrospective. Both current and retrospective national bibliographies are being published in India. Some of the well-known examples for current and retrospective national bibliographies are provided below:

Current National Bibliographies

Indian National Bibliography. Calcutta Reference Library, 1957-.

Accession List: South Asia, New Delhi: Library of Congress, 1980-.

Indian Science Abstracts. New Delhi: INSDOC, 1965-.

Bibliography of Doctoral Dissertations: Social Sciences and Humanities. New Delhi: Association of Indian Universities, 1975-76-(Annual).

Press in India: Annual report of press compiled by the Registrar of Newspapers of India. New Delhi: Ministry of Information and Broadcasting, 1964-(Annual), 2V.

Retrospective National Bibliographies

National Bibliography of Indian Literature, 1901-53, New Delhi: Sahitya Academi, 1962-74. (4volumes : arranges language wise)

Social Sciences: A bibliography of doctoral dissertations accepted by Indian Universities. 1857-1970. New Delhi: Association of Indian Universities, 1974. (There are similar bibliographies for subsequent years)

Catalogue of Government of India Civil publications (subject-wise arranged) corrected upto 31st December 1959. New Delhi: Manager of publications, 1966.

Bibliography of Indology: Calcutta: National Library, 1960-65. 3 vols.

A Bibliography of dictionaries and encyclopaedias in Indian Languages. Calcutta: National Library, 1964.

Indian National Bibliography (INB)

UNESCO in 1950s assisted many countries with know-how and wherewithal to establish their national bibliographies. Government of India with plans to have bibliographical control at the national level sought the help of UNESCO. It appointed a National Bibliographical Committee in 1955 under the chairmanship of the veteran information scientist Prof. B.S. Kesavan to make recommendations regarding the layout, coverage, script and other technical details of the proposed Indian National Bibliography. The Committee while recommending the immediate establishment of the Indian National Bibliography suggested, among other things, the following:

- i) INB should cover publications in all the languages recognized by the Constitution of India.
- ii) Roman script should be adopted for all the languages with annotations in English for the entries in Indian languages.
- iii) D.D.C. should be adopted for the classification. Colon Classification numbers also to be provided. Chain procedure should be used to derive the subject headings.

On the basis of the recommendations, **Indian National Bibliography** was established in 1957. **The Central Reference Library** which is housed in National Library, Kolkatta, has been entrusted with the work of the publication of the **Indian National Bibliography** on continuous basis. The first quarterly fascicule of INB covering the period from October 1957 to December 1957, appeared in August 1958.

Books Delivery Act: The total record produced in the country should be physically available on a continuous basis for the publication of a national bibliography. Hence, there is a need for legal deposit act. The first copyright Act, viz., The Press and Registration of Books Act was passed in 1867. However, after independence, Government of India found the 1867 Act inadequate. Government, therefore, passed in 1954 **The Delivery of Books and Newspapers (Public Libraries) Act**. The act stipulates that the publishers within the territories of India should deposit four copies of their publications, both books and periodicals, free of cost tot the national libraries within a period of three months from the date of publication. This ensures continuous supply of source materials to the **Indian National Bibliography**.

Coverage: Indian National Bibliography is an authoritative record of books, first issue of periodicals, government publications published in 14 major Indian languages, viz., Assamese, Bengali, English, Gujarati, Hindi, Kannada, Malayalam, Marathi, Oriya, Punjabi, Sanskrit, Tamil, Telugu and Urdu. The following types of publications are, however, excluded from the INB: a) Maps; b) Musical Scores; c) Periodicals and Newspapers (except the first issue); d) Keys and Guides to Textbooks; e) Ephemeral materials and grey literature such as trade literature, telephone directories, etc.

Arrangement: Till 1972, the INB appeared in two parts, namely, I) General publications; and ii) Government and Semi-government publications with two separate indexes. This division was found uncalled for and unnecessary. From the issue of January, 1973, these two parts were amalgamated. The entries in the INB are arranged according to the Dewey Decimal Classification under appropriate subject headings with Colon Classification numbers given at the bottom of each entry. Full bibliographic details such as class number, name of the author, full title, place of publication, publisher's name, year of publication, prepages, pages, illustrations, size nature of binding, price series, annotations wherever needed and given for each entry. The headings of the entries are derived from the D.D.C number assigned to each entry.

Format: The format of the INB is demy quarto with a print area of 6 3/8 "9" with a line measure of 41 pica cms. The type used is 10-point Roman.

Script: Roman Script is used for all entries. Entries of books in Indian Languages are transliterated with diacritical marks. They are provided with annotations in English.

Frequency: The INB was first published as a quarterly publication with annuals cumulations from 1958 to 1963. Its periodicity was changed to monthly in 1964 and continued upto 1977. The issues of the years 1978 were published as annuals due to unavoidable circumstances. The issues for the year 1980 to 1983 have been decided to be published in two volumes of four parts. Since January 1984, the periodicity of the INB has been reverted to monthly.

Language Bibliographies

The use of Roman scripts for the books in Indian languages in INB was found unhelpful by non-English knowing public. The price of the consolidated issue of the INB was found high by individuals and smaller libraries. It was felt that the needs of the non-English knowing public and smaller libraries would be best served if separate annual bibliographies of Indian origin are brought out in the script of the respective languages. It was also considered that the publication of the language bibliographies would contribute indirectly to the development of the regional languages and also serve the long felt need of reference tools in such languages. Publication of language bibliographies in 13 major Indian languages was initiated in 1959.

The language bibliography are prepared by the INB staff at the Central Reference Library, Calcutta and are sent to the concerned authorities for publication in the states. This was done for maintaining uniformity. The Sanskrit bibliography in Devanagari script is brought out by the INB. The language bibliographies, except for Malayalam and Hindi, are much behind schedule.

Assessment of the INB

The publication of the INB is a great step forward for the bibliographical control in a multilingual country like India. It is a permanent record of the country's intellectual output for the use of the present and future generations of scholars, librarians, publishers and booktrade. It is as useful as a basic reference source for the preparation of various other bibliographical tools. By publishing the INB, India is contributing its share to the Universal Bibliographic Control. Yet there are some defects and handicaps which the INB has to overcome in the future.

1. There is time-lag in its publication. Monthly issues are much behind schedule and this defeats the very purpose of a national bibliography.
2. It fails to be comprehensive because the publishers are not complying with the provisions of the Delivery of books Act in depositing copies of their publications. National library has no efficient mechanism to enforce the provisions of the DB Act.

3. The INB is not recording the materials published outside India by its natives and by the others about India and Indian thought.
4. The scope of the INB is narrow since it provides information only on the books published in 14 languages excluding the publications in many minor Indian languages.
5. The price of the INB is high and it is not within the reach of individuals and small libraries.
6. The adoption of Roman script for the publications in Indian languages is not appreciated.
7. It should adopt Common Communication Format (CCF) to make it internationally compatible and suitable for consequent automation.
8. The INB should introduce card service, so that the libraries need not prepare catalogue cards. Thus their precious time can be saved and utilized for other reader services. This also will help in uniformity of cataloguing.

National Bibliographic Activities in U.K.

There is strong bibliographical awareness in U.K. unlike in India. The compilations of John Bale and John Leland laid strong foundations in the field of bibliography in Great Britain. British Museum catalogues are famous world over. Some sample of current and retrospective national bibliographies are given below.

Current National Bibliography

- i) *British National Bibliography*. Boston Spa, Wetherby; The British Library, National Bibliographic Service, 1950 – (Weekly)
- ii) *Bookseller*, London: Whitaker, 1858 – (Weekly)
- iii) *Whitaker's cumulative Booklist*. London: Whitaker, 1924-(Quarterly)
- iv) *Monthly Catalogue of Government Publications*. London: HMSO. (Monthly)

Retrospective National Bibliographies

- i) *ASLIB Index to Theses Accepted for Higher Degrees in the Universities of Great Britain and Ireland*. London: ASLIB, 1950-51.
- ii) *General Catalogues of Printed Books*. London: Trustees of the British Museum. 1965-66. (263 volumes).
- iii) *British Books in Print* London: Whitaker, 1967 – (Annual)

BRITISH NATIONAL BIBLIOGRAPHY (BNB)

BNB was established in 1950. Librarians and book trade in UK rely on the BNB for authoritative and comprehensive information on new and forthcoming British books. It is an indispensable tool for book selection, reference work and cataloguing. BNB is issued by the National Bibliographic Service of the British Library. The National Bibliographic Service is composite authority consisting of the Copyright Department of British Museum, Library Association, Publishers and Booksellers Association, ASLIB and others.

Coverage: BNB lists new books and first issue of titles received by the Copyright Receipt Office of the British Library. Even forthcoming books are included. Advance information of the forthcoming books is obtained from over 1000 British publishers. All subjects are covered, including fiction and children's literature. Though the BNB is comprehensive in its coverage, the following type of material is excluded from its listing:

- i) Serial (except the first issue)
- ii) Maps
- iii) Music

- iv) Publications of the Local Government and Government of Ireland
- v) Uncharged reprints
- vi) Publications without the British imprint and
- vii) Cheap novelettes.

Music scores are separately covered in the British Catalogue of Music.

Frequency: BNB appears weekly with annual cumulations preceded by interim cumulations for January-April and May-August. There is a quinquennial cumulations also. BNB comes out very promptly. Time-lag in the printing of BNB has been reduced a great deal by printing it from computer-controlled phototypesetting.

Arrangement: BNB weekly list is arranged in two parts, viz., classified and alphabetical parts. The entries in the classified part are arranged primarily in a classified subject sequence according to the 20th edition of the Dewey Decimal Classification. All entries are catalogued to the standards of the Anglo-American Cataloging Rules, 2nd edition (AACR2). The alphabetical index part contains entries under authors, titles and series which provides alphabetical access to the full records mentioned in the weekly list. The last weekly list of each month includes two separate alphabetical indexes of authors, titles and series and subject covering all items in the weekly lists of the month.

Bibliographical Information: Each main entry in the classified part contains the full bibliographic details as required under the AACR and in addition includes in International Standard Book Number (ISBN), price and BNB serial number. Index entries contain complete bibliographic details except tracing. For deriving subject headings BNB used PRECES developed by Derek Austin.

Sample Classified Entry

823.912 [FF] (DC-20) – Fiction in English, 1900-1945 – Texts
Hodgson, William Hope, 1877-1918

The night land/William Hope Hodgson. – London: Grafton, 1990 – 509 p: 18cm
ISBN 0-586-20933-6 (pbk) : \$4.99: CIP rev.
1.Title B90-45903

Sample Author Index Entry

Hodgson, William Hope, 1877-1918
The night land – Grafton (pbk). \$4.99: CIP rev.
823.912 [F] B90-45903 ISBN 0-586-20933-6

Sample Title Index Entry

Night land/William Hope Hodgson. – London: Grafton (pbk). \$4.99: CIP rev.
823.912 [F] B90-45903 ISBN 0.586-20933-6

Availability: BNB is available in many forms. The subscriptions vary for each form. The available forms for subscriptions are:

- 1) Weekly list only
- 2) Full service of weekly lists, interim cumulations and annual volume (hard copy of microfiche)
- 3) Interim cumulations and a choice of form or annual volume.
- 4) Annual volume only (hard copy or microfiche).
- 5) Back issues of annual volumes and multiannual cumulations.

BNB author and title cumulations from 1950 to 1984 covering about 2.5 million entries are now available in microfiche form. Since 1967 BNB joined the Machine Readable Catalogue (MARC) Project of the Library of Congress. Hence, UKMARC has come into operation and it is now available internationally for use.

BNB Publications

The following publications are provided by the BNB

- i) Books in English (Annual)
- ii) British Catalogue of Music (Three times a year and annual cumulation)
- iii) Serials in the British Library (Quarterly and annual cumulation)
- iv) Bibliography of Bibliography.
- v) British National Film Catalogue (Every two months and annual)
- vi) British Humanities Index (Quarterly and annual)
- vii) British Technology Index (Monthly and annual)

Books in English was started in 1972 because of the collaboration between the BNB and LC. In excess of 1,00, 000 English language titles published throughout the world are recorded. This is published annually. This covers all subjects including fiction published in English. The language titles are now available in 600 microfiche in a compact case. The entries covering the period 1981-85 listing over half a million English language titles compiled from the catalogues of the BNB and LC in a single author/titles sequence are available in 289 microfiche. Books in English had greatly increased the value of the BNB.

Assessment of the BNB

1. The BNB is an accurate and authoritative source for the documents published in U.K.
2. It is an effective tool for selecting British books all over the world.
3. It is greatly helpful as a standard guide for the purpose of classifications and cataloguing in libraries in and outside U.K.
4. It is a well planned and properly brought out national bibliography. There is no time-lag in its publication.
5. Since it is brought out in various forms, subscription is facilitated even by small libraries.
6. The subscription rate is found high by the overseas subscribers.
7. There is a time-lag between the appearance of a publications and its listing in the BNB. This is due to the fact that some publishers deposit their publications late.

Role of National Bibliography in Universal Bibliographic Control

Bibliographic control at the national level is of utmost importance for control at the universal level. As a first step towards this, all the nations should have their current bibliographies. Their scope should be comprehensive. In order to build up a 'world brain' as suggested by H.G. Wells, the scope of the national bibliographies should be wide and exhaustive. The national bibliographies will help internationally:

- i) to know the national literature published in other countries;
- ii) to forge cultural understanding with other nations of the world;
- iii) to select the classics published in other national literatures for translation into the languages.
- iv) to borrow the required documents on inter-library loan and resource sharing;
- v) to disseminate information to avoid duplication; of research and save energy, time and money; and

- vi) by adopting CCF to enable the universal cumulation of the national bibliographies.

2.6 SUBJECT BIBLIOGRAPHY

There are three approaches for the identification, storage and retrieval of documents. They are author, title and subject approaches. National library catalogues and general bibliographies generally adopt the author approach. Such bibliographies are usually not limited to any subject. They are designed for the widest possible general use. The subject approach to bibliographic control lies, however, through bibliographies whose scope is limited to individual subject fields. The range of the subject filed can be a major discipline like 'chemistry' or a geographical area like 'India' of a relatively small subject like 'book-keeping' or 'Tea plantations in Nilagiris'. But the focus is limited to a subject.

An ideal subject bibliography is a comprehensive list of all books, periodical articles and other non-book materials that have appeared on that subject across languages, geographical boundaries and time. Subject approach is largely adopted by scholars and subject specialist.

Definitions:

The different definitions of subject bibliography are given below:

1. The Librarians glossary (4th ed.) states that geographical area subject bibliography is "a list of material about geographical area particular subject or individual".
2. Encyclopedia Americana states: "Subject bibliographies: are lists in which both the purpose of compilation and the common characteristic of the listed books are related to the subject matter of their content".
3. According to ALA Glossary "A subject bibliography is geographical area document bibliography confined to a specific subject, whether the subject be a person, place of thing.
4. S.R. Ranganathan defines. "A subject bibliography is geographical area document bibliography confined to geographical area specified subject only, instead of covering the entire universe of subjects".

The subject bibliography is, therefore, a systematic list of documents on a specific subject irrespective of the language, country and time of their publication.

Scope & Special Features

A subject bibliography, generally, should be universal in its coverage. That is, it all should include all documents produced on the subject in all languages in all countries at all times. Such geographical area bibliography may be called a complete subject bibliography. But physical barriers frustrate the realization of such an ideal subject bibliography. Some of the special features and limitations of subject bibliographies are as follows:

1. Due to physical barriers subject bibliographies suffer with certain limitations with regarding to form of materials, time, language, etc.
2. Subject bibliographies may range from the comprehensive to the highly selective ones. A selective bibliography is one which lists only significant material.
3. Depending on the subject of coverage, the subject bibliographies can be either current or retrospective. A current bibliography is one which records contemporary literature as it appears with no terminations in view. A retrospective subject bibliography is one that includes all documents published before or in print on a certain date.

4. Subject bibliographies with materials on a specific subject may also include material from allied subjects.
5. The indexing and abstracting periodicals in specific subject fields are also subject bibliographies.
6. The printed catalogues of special libraries can also serve as a subject bibliography in the field of its specialization. They are also useful as location tool of such material in the libraries.
7. International databases with subject specialization can also serve as subject bibliographies.
8. Subject bibliographies may also carry annotations or be provided with abstracts.
9. Most subject bibliographies also suffer in their coverage of materials because of the compilers' limitations and bias of language.
10. Earlier subject bibliographies listed only books. Inclusion of parts of books, periodical articles and other materials is a later development.

Types

The term 'subject' has very wide connotation and 'spread'. The elements which are implied by the term are multiple. The subject can be person, geographical unit, form of material, form of literature, etc. A subject bibliography may comprise any of the following categories:

<u>Category</u>	<u>Examples</u>
1. Subject	: Documents on any of the subject such as 'Chemistry', 'History' etc.
2. Forms of Literature	: Poetry, Drama, Fiction, etc,
3. Books publishes in definite period of time	: Incunabula; Sixteen-century books, etc.
4. Special categories of literature	: Banned books, bestsellers, books by women, etc
5. Works by and on individual author	: William Shakespeare, D.H. Lawrence, R.K. Narayan
6. Works published in a geographical	: Books published in India, A.P., Kerala, etc.,
7. Editions and variants of individual	: Gita, Bible, the first folio of Shakespeare, etc.
8. Works in languages	: Books in Telugu, Tamil, etc.

The above division is not exhaustive and there may be subjects which may fall between these categories. Further a division of the materials is possible on the basis of their physical form. The may be subject bibliographies concerning: 1) Printed books; 2) Periodicals; 3) Articles in periodicals and composite publications; 4) Manuscripts; 5) Films, photographs, etc.; 6) Audiovisual materials; and 7) Posters. The subject bibliographies can be broadly classified into five board types of reference tolls: 1) Subject Indexes; 2) Bibliographies; 3) Abstracts; 4) Bibliographic Reviews; and 5) Subject Databases. When

these tools are viewed from the point of time and coverage, they can further be classified as current and retrospective bibliographies and comprehensive and selective bibliographies. Examples of Subject Indexes, Bibliographies, Abstracts and Databases

A) Subject Indexes

Applied Science and Technology Index, 1913 – (monthly, except July)

This analysis about 300 periodicals published in English in the disciplines of Science and Technology. Mostly issues are cumulated annually.

British Humanities Index, 1962 – London, Library Association

It covers about 400 British journals and is mainly intended to serve the general reader. This was formerly, The Subject Index to Periodicals.

Biological and Agricultural Index, 1964-New York: Wilson (monthly, except August)

Library Literature: An index to Library and Information Science, New York: Wilson, 1934-

Indian Education Index (1947-1978), by K.G. Tyagi, Indian Institute of Education, 1980.

B) Subject Bibliographies

Annual bibliography of English language and Literature. London: Modern Humanities Research Association. Vol. 1-1921 (Annual).

International bibliography of Historical Science, Paris: Librairie Arman C (Annual).

(C) Abstracts

Library and information Science Abstracts. London: Library Association, 1950 – (Bibliotheca-monthly).

About 400 journals are abstracted besides books, reports and conference papers in the field of Library and Information Science. Entries are arranged in classified order. Author and Subject indexes are also given.

Linguistics Abstracts. London: Basic Black well, vol. – 1985. (Quartely).

This serves the information needs of all who engaged in research into linguistics. It surveys about 200 specialist periodicals in the field. Entries are arranged under classified subject headings. Author and key word indexes are given. Cumulative index for each volume is published annually.

Biological Abstracts, Philadelphia: Biosciences Information Services of Biological Abstracts. 1926- (Semi-monthly).

Indian Science Abstracts. Delhi: Indian National Scientific Documentation Centre, Vol.1, 1965 (Quartely)

Psychological Abstracts. Washington, D.C. American Psychological Association, Vol. 1-1972. (Monthly).

D) Bibliographical Reviews

Annual review of psycho-analysis. New York: International University Press. Vol. 1 (1952)

The review of English Studies. London: The English Association. Vol.1(1925)

Advances in Environmental Sciences and Technology. New York: Wiley Interscience. Vol. 1 (1969-) (Biennial).

E) Databases

MEDLARS

ERIC

BIOSIS

COMPENDIX

AGRIS

2.7 TRADE BIBLIOGRAPHY

The bibliographies are generally lists of books of print and available in a country. They are issued usually by commercial organizations like booksellers, distributors, publishers, printers. The aim is to earn business. Sometimes even for the books published abroad, trade lists can be brought out by their agents in home country.

Definition

Trade bibliographies usually contain information on the macro documents such as books, reports, proceedings, pamphlets, etc. They exclude micro documents, grey literature, dissertations. Trade bibliographies are issues by book sellers, printers, publishers, distributors of books for the purpose of sale and publicity of books.

Girja Kumar and Krishna Kumar in their book, *Bibliography* (1985) defined a trade bibliography as 'one issued for, and usually by commercial organizations like booksellers, distributors, publishers, printers, etc., usually for a particular country'.

B.L. Chakraborti in his book, '*Bibliography in Theory and Practice*' (1975) states that "a trade bibliography, as its name implies, is brought out by the book trade, i.e., by a publisher or a bookseller or a group of such agencies".

The Encyclopaedia of Library and Information Science termed the trade bibliography as the Dealer's Catalogue. It defines the dealer's catalogue as "a list of books of sale, reproduced in some quantity to be distributed to customers at a distance. So that they may be informed of the dealer's stock, and persuaded to purchase some of it".

Scope and Coverage

As mentioned in the earlier paragraphs, the purpose of trade bibliography is sales promotion. Hence, this category of bibliographies list the documents which are priced and are available for sale from publishers and other trade channels. Unpublished literature such as dissertations, these, grey literature, micro-literature, off-prints, journals, private publications of societies and industries hardly find place in these bibliographies. Recording of the price of each item is an essential feature of a trade bibliography. Literature which is available free of cost and on exchange doesn't figure in trade bibliographies.

Trade bibliographies provide the required bibliographical details of the publications. There are good tools of selection in libraries. These are national in scope. Sometimes, book distributors, wholesalers bring out trade lists which cut across national boundaries. Such lists are based either on language or subject. Trade lists published by M/s. Heffers (Cambridge) or M/s. Basil Blackwell (Oxford) belong to this category.

Types

Like all other bibliographies, trade bibliographies are also published either as retrospective or current bibliographies. S.R. Ranganathan recognized the following types of

1. Lists of individual Publishers and Booksellers.

2. Lists of Second-Hand books.
3. Lists and review in reviewing periodicals.
4. Periodical lists of all the publications produced within specific countries during specific period of time
5. Periodical lists of all the publications in print in specific countries at a particular point of time.

These lists are known as 'Books in Print'. This category lists only works available for sale and exclude those which are not available at that point of time.

A trade Bibliography, as its name implies, is brought out by the book trade, i.e., by a publisher or a book-seller or a group of such agencies. Like a National Bibliography it also attempts at recording the printing output of a given country though its purpose somewhat differs from that of a national bibliography. A trade Bibliography is compiled primarily to facilitate the sale or purchase of books, though it may also serve various other purposes. For example, it may be used as a book selection tool and sometimes also as a source of current bibliography data. But the purpose of a National Bibliography is far nobler still. Its motive is not commercial but intellectual. It tries to maintain a record of currently published materials of all kinds deposited at a central point according to some system of legal deposit to provide the readers with an effective access to their own intellectual resources, to help scholars in the field of research, to make every published book promptly known to all those who may be helped by knowing about it, to help build the future history of the nation, to lend service to to-day's readers as well as to future historians. But Trade Bibliographies have been the precursors of National Bibliographies, the latter being an entirely post-war development. Indeed the trade bibliographies used to serve to some extent the purposes of National Bibliographies even in some advanced countries like the U.K. and the U.S.A. before the advent of formal and comprehensive National Bibliographies. A Trade Bibliography is generally based on weekly lists published by the same agency and subsequently cumulated into monthly, quarterly, annual and later on into three or five-yearly volumes. But as Trade Bibliographies are not evaluative because they often contain a minimum of bibliographic information and almost no annotation, they practically come to no purpose to research and special libraries as also to big libraries.

Use

Books are commodities which are produced due to the joint venture of authors, publishers and printers. Their main aim is the sale of their product to earn profit. Trade bibliographies bring the books to the notice of the potential purchasers. The purchasers can be individuals or libraries. The use of trade bibliographies are:

- i) They are good acquisition tools. Trade bibliographies by listing publications of a single publisher or multiple publishers bring together books which can be available for sale. Sometimes by adding annotation or summary of each book, the trade bibliographies enable each purchaser to make his decision.
- ii) Trade bibliographies bring to the notice of libraries and individuals the new publications just come out of the Press.
- iii) These are also good source for book trade and retailers to acquire books for resale locally.
- iv) Trade bibliographies are useful for the price verifications whenever there is a doubt about a publication or publisher.

Along with the above uses, the trade bibliographies have certain limitations. They are:

- i) Trade bibliographies don't include information on unpublished literature such as dissertations, theses and micro and grey literature.
 - ii) They list only documents which are available for sale through trade channels.
 - iii) They contain only minimum bibliographical details about the publications.
- Exarodes of Trade Bibliographies for India, UK and USA.

Some well known trade bibliographies of the U.K. and the U.S.A and India given below:

The English Catalogue of Books, 1801 to date, 1864 to date London, Publishers' Circular. This gives in one alphabet under author, title, and subject the size, price, month and year of publication and publisher of books issued in the United Kingdom, 1801 to date, 1864 to date. It is drawn from the weekly lists published in The Publishers' Circular which are themselves cumulated into monthly lists. At present it appears as an annual volume with five-yearly cumulation. This has been a primary source of British books prior to the publication of the British National Bibliography. Though it is a tiresome and often an unreliable source, the librarian has still no alternative to it especially for materials before the advent of the B.N.B.

Another trade list of similar compilation is

Whitaker's Cumulative Book List, 1924 to date.

London, Whitaker.

This is drawn from the weekly and monthly lists of publications included in the Book-seller and is issued quarterly, annually and later on into five-yearly volumes. It is arranged in classified order, with an index of authors and titles.

Cumulative Book Index : a world list of books in the English Language, 1898 to date.

This is the most efficient of the bibliographies in the English language. This is issued monthly, cumulating into semi-annual and since 1957, into permanent two-year cumulations. Earlier permanent volumes covered four to six years. Originally it used to record only American publications, but since 1928 it has widened its scope by including the publications of the rest of the English-speaking world. It is, therefore, more useful than its English counterpart, the Cumulative Book List. It is highly popular since it indexes material in one alphabetical sequence which helps the readers of all intellectual levels. The main entry is under the author's name (including Pseudonym) and records dates of birth and death, full title as it appears on the title-page, series, edition, size of the book, exact pagination, price, details of illustrations, maps etc., and the Publisher's name, place of publication and date, Library of Congress card number, and standard book number, if available. It used to supplement the U.S Catalogue and became in fact a continuation of it when the latter ceased to come out in 1928. It is famous for its high standard of bibliographical accuracy and serves as an indispensable reference tool for verification of titles of books published in English as well as for full bibliographical data about them. It is also an important tool for selecting books published in the English language.

Books in Print, 1948-, Annual

New York, Bowker.

It is an author-title-series index to the Publishers' Trade List Annual. It does not, however, include non-book material listed in the aforesaid catalogue nor does it provide more than one source for any book. It gives author, title, edition, binding, year of publication, illustration, series, the ISBN and publisher and price of books and covers only the publishers

included in the Publishers' Trade List Annual. Since 1966 this is published in two volumes of which the second one namely the title-index has a complete list of all known publishers including those not included in PTLA. Its coverage is very wide. It lists 4,50,000 titles which include books of all kinds ranging from children's books to text books and paperback. This is a very useful tool both for book selection and reference. It has a companion volume, Subject Guide to Books in Print.

American Book Publishing Record, 1961 –
New York, Bowker.

It is a list of current American books drawn from the weekly records of the Publishers' Weekly, issued monthly and then cumulated into annual and five-year volumes. The items are arranged according to Dewey Deciaml Classification. There are, however, both author and title indexes. Books are also listed just after the classified part under three different heads, : Fiction, Juvenile Literature and Paperback. As regards bibliographical details, they are the same as in the Publishers' Weekly. ABPR is an important tool for the selection of books in small libraries.

British Books in Print : the Reference Catalogue of Current Literature, 1967-, Annual.
London, Whitaker.

This is a trade bibliography that lists books in print in England. It is an invaluable source of reference similar to the American Books in Print published by Bowker Company of New York. It does not, however, include such books as are priced less than o. 12^{1/2}. Each entry in it is more or less complete since it contains all relevant information such as the author, title, the publisher, place and data of publication, edition number, price etc. It is now being published in a single volume with author, title and subject entries arranged in a single sequence and records the publications of 1,800 British publishers.

Bibliography of English Publications in India, 1976 – (Annual), Delhi, D.K.F. Trust.

This is, according to the Publishers, a bibliography of significant and scholarly publications in English brought out in India. It includes commercial, institutional and government publications various kinds like books, monographs, exceptional text books, atlases, serials, proceedings and transactions of different learned bodies, societies, conferences, seminars and symposia, yearbooks etc. The entries of this bibliography do not thus lend support to the tall claim made by the publishers that it is a bibliography of significant and scholarly English publications of India. Nevertheless it is an honest attempt in the right direction so far as publication of current trade bibliographies in India is concerned. Though a current bibliography for the year 1976, it, however, includes quite a lot of books published in 1973, 1974 and 1975 because these books were not available before 1976.

There are nearly 16,000 entries which appear in three parts: author, title and subject. The author part containing author entries provides maximum information while the title part gives such brief information as is sufficient to identify the book or the like. The subject part covers nearly five hundred subjects and gives subject references. It is, on the whole, a dependable bibliography.

“The basis of all librarianship is bibliographic. It is a profession in which what is recorded, by whatsoever means historical development has permitted, is the foundation of all activity. The enumeration of that material, its analysis, its detailed recording, its history, its authentication are all problems relating to its use, of which no librarian dare be ignorant”.

This indicates the role bibliography plays in the field of librarianship. It serves as the basis of various activities in this subject and must be given the importance it rightly deserves.

2.8 SELF ASSESSMENT QUESTIONS

1. Describe the kinds of bibliographies
2. Explain the concept of Universal bibliography
3. Define national Bibliography and describe INB and BNB
4. Write Short note on :
 - a. Trade bibliographies
 - b. Incunabula
 - c. Subject Bibliography

2.9 SUGGESTED READING

A.M.L. Robison, *Systematic bibliography*, 3rd ed., London, Bingley, 1971, pp. 27-30.

Archie G. Rugh, " *Catalog, bibliography, or index*," RQ, 13,1973, pp. 27-30.

Georg Scheider, *Theory and history of bibliography*, Ralph Robert Shaw, trans., New York, Scarecrow Press, 1961, pp. 13-36, 271-293.

Roy B. Stokes, *Bibliography*, *Encyclopedia of library and information Science*, New York, Dekker, 1969, vol.2, pp. 407-419.

LESSON- 3

BIBLIOGRAPHIC CONTROL AND ORGANISATION

AIMS AND OBJECTIVES

This lesson aims to explain the concept of Universal Bibliographic Control and Universal Availability of Publications.

After reading this Lesson You will be a position to understand the ongoing activities in relation to the Universal Bibliographic Control and Universal Availability of Publications.

STRUCTURE

- 3.1 Introduction**
- 3.2 Concept of Bibliographic Organization and Bibliographic Control**
- 3.3 Universal Bibliographic Control (UBC)**
- 3.4 National Bibliographic Control**
- 3.5 UBC and International MARC Programme (UBCIM)**
- 3.6 Universal Availability of Publications (UAP)**
- 3.7 Bibliographic Activities in India**
- 3.8 Self Assessment Questions**
- 3.9 Suggested Readings**

3.1 INTRODUCTION

‘Bibliographic control’ was used for the first time in 1964 by Dr. Luther Evans in a note in Bulletin of Bibliography. He used the phrase in absence of bringing about an effective control over the growth of literature, by producing adequate and complete record of them but not in the context of bibliography.

The Library Association, defined it as : “Bibliographic control is the development and maintenance of a system of adequate recording of all forms of material published and unpublished, printed and audio-visual or otherwise, which add to the sum of human knowledge and information.:

There is now such a frightful abundance of books and other records of communication that it has now become virtually impossible for the librarians to meet the bibliographic needs of scholars and researchers, artists and technicians and the general public. Hence there is the need of some quicker method by which the knowledge contained in the whole mass of existing literature can be easily transmitted to their users and the way by which this can be done, is not only to organize these materials but also to make them physically available to their consumers. This is what is known as Bibliographic organization. Bibliographic organization naturally does not include in its scope the great bulk of the media of mass

communication such as radio newspapers, motion pictures etc. unless news and views provided by them are available in the form of some historical documents.

The 'Unesco/Library of Congress in their joint publication, Bibliographical Services gave the following definition in 1950: 'Bibliographical control is defined to mean the mastery over written and published records which is provided by and for the purpose of bibliography. Bibliographical control is synonymous with effective access through bibliographies. Thus reference to the bibliographic control of medicine means, effective access through bibliographies to sources of medical information'.

Bibliographic Organization', is also used synonymously with bibliographic control, bibliographic organization, is concerned with the study of the total system of listing and access to the documents, and hence it is a much broader concept than bibliography control. It encompasses a study of the means by which access is obtained to recorded knowledge especially with regards to the reduction of barriers of political, legal, intellectual or organizational kinds. The barriers will include, copyright problems, secrecy, security, trade, postal and tariff restrictions on the international dimension and differences in cataloguing and other internal arrangements at the national, local and even at the single library level.

J.H. Shera and Margaret Egan defines bibliographical organization as"- the pattern of effective arrangement which results from the systematic listing of the records of human communication. Such listings are themselves called bibliographies and the art of making them is bibliography." This definition makes clear that compilation of bibliographies is not an end in itself but merely the means to an end. The product of bibliographic control is the pattern of effective arrangements which result from the bibliographies.

3.2 CONCEPT OF BIBLIOGRAPHIC ORGANIZATION AND BIBLIOGRAPHIC CONTROL

It is course difficult to say what is exactly meant by bibliographic organization. Different authorities have given different definitions of which the one given by V.W. Clapp very nearly hits the mark. "Bibliographic Organisation may be defined", he says, "as the pattern of effective arrangement which results from the systematic listing of the records of human communication". This implies that the records of human communication of all kinds whether they are in written or printed form should be so effectively arranged that they serve some definite purpose. Bibliographic organization, as such, is not much different from bibliographic control since the latter has also been defined in the UNESCO/Library of Congress Survey as "the mastery over written and published records which is provided by and for the purpose of Bibliography.

Bibliographic organization and bibliographical control are for all intents and purposes synonymous. For if the former means the organization of different kinds of reading materials in different branches of learning in order to make them accessible to all seekers of knowledge the latter means effective control of all published and unpublished records on all subjects and in various languages and forms through systematic bibliographies for the convenience of the readers all over the world. Really speaking bibliographic control is nothing but ensuring effective access through bibliographies.

The literature explosion particularly in various forms and in several languages makes information. The literature explosion particularly in various forms and in several languages

makes necessary the bibliographic control of the over growing literature. In the absence of bibliographic control many researches and discoveries get duplicated, without having awareness of the accomplishment already made elsewhere, may be in different parts of native country or in other countries. For lack of bibliographic control several highly significant discoveries may lie unnoticed for years, to the potential user. The other form of recorded knowledge is left unlisted or uncontrolled, various types of material and listing them systematically. Bringing awareness of the existence of the information is not just sufficient, but locating and retrieving the significant and relevant documents is the major problem, and the bibliographic organizations is concerned with this. For all these reasons, the bibliographic control and organization is vitally needed for the furtherance of research and development.

There was a time when it was possible for a diligent scholar virtually to read all records of learning. Though this may sound a bit exaggerated, there were really periods in human history when the number of records was so insignificant that an assiduous scholar might read almost the whole of those records which concerned him most. Naturally there was no need of bibliographic organization or control in those days. But in the modern age the number of publications is almost appalling to every reader and hence it is not possible even for a voracious reader to read all the publications even on his chosen subject. It is not only the frightful number of publications alone that has added no less to our confusion. Indeed knowledge today has developed and widened so much in almost every branch of study, particularly in science and technology that new and new subjects have sprung up many of which were not even heard of half a century ago. To harness these new materials and to bring them together according to their characteristics and distinction of subject-matter is an uphill task with which bibliographic organization is primarily concerned to-day. Then again, a scholar or a researcher to-day cannot be cannot with the publication of a locality or of his own country. As similar kinds of publications presents a baffling problem in their listing. It is for all these reasons that bibliographic organization is so vitally needed in the interest of research and higher learning.

Programmes Towards Bibliographic Control and Organization

International Federation of Library Associations Institutions (IFLA) was instrumental in preparing the two programmes towards the world-wide bibliographic control organization. These two programmes are i) Universal Bibliographic Control (UBC); and ii) Universal Availability of Publications (UAP).

3.3 UNIVERSAL BIBLIOGRAPHIC CONTROL (UBC)

Genesis

Konard Gesner (1516-1565) compiled 'Bibliotheca Universalis' the first universal bibliography, during 1545 and 1555. Even though this work is limited to Hebrew, Latin and Greek languages it was observed that Gesner could cover only 20-25% of the then existing literature. But still it was nearer to the concept of Universal Bibliography. Another notable attempt at Universal Bibliography was made by the International Institute of bibliography (Brussels) now known as FID. FID was established by two enthusiastic Belgian Lawyers, Paul Otler and Henri La Fontaine. They dreamt of listing everything published since the beginning of printing. More than 16 million records were transcribed from printed bibliographies, trade catalogues and library catalogues. All entries were arranged in classified order, using UDC Scheme with alphabetical index to authors.

In the early 1950s Unesco's organized a series of meetings on antional libraries and planning of library services. The one such noteworthy meeting, the symposium of National Libraries in Europe, was held in Vienna in 1958. This symposium defined the role of national libraries in national bibliographic control, as "It is the responsibility of the national library to acquire and conserve the whole of the national production of printed material. It should be responsible for coordination efforts to obtain the foreign literature the country requires. The national library should promote the adoption in its own country of common rules for the compilation of catalogues. The national library is responsible for the bibliographical services of its own country to undertake the production of current national bibliographies".

Universal Bibliography Control has its roots in IFLA (International Federation of Library Association and Institutions) Committee on Cataloguing Principles (ICCP) and the International Conference and cataloguing principles held at Paris in 1961, a landmark in the history of cataloguing. The Conference agreed to use the statement of principles (Paris principles) in making Headings for the documents by the national agencies. International Meeting of Cataloguing Experts (IMCE) held at copenhagen in 1969, is a further significant landmark, that was organized by IFLA. The IMCE is more significant because it was aimed at finding a basis for the compatibility of bibliographic records i.e.for achieving the international standards in bibliographic description of the documents. IMCE resolved that "Efforts should be directed towards creating a system for the international exchange of information by which the standard bibliographical description of each publication would be established and distributed by a national agency in the country of origin of the publication. The means of distribution in such a system would be through the medium of cards of machine readable records". The effectiveness of the system will be dependent upon the maximum standardization of the form and content of bibliographical descriptio

UBC is the oldest core programme of IFLA, and its basic concept is that each country in the world should create bibliographical record of its publications an internationally accepted form, using international standards, immediately after they are published. All such records should be made available internationally.

Aims of UBC

the aims of UBC according to Dorothy Anderson, are "the promotion of a world wide system for the control and exchange of bibliographic information. The purpose of system is to make universally and promptly available, in a form which is internally acceptable, basic bibliographic data on all publications issued in all countries".

The concept of UBC presupposes the creation of network made up of component national parts. Each of which should cover a wide range of publishing and library activities, resulting in integration at the international level to form the total system.

Requirements

UBC is an international bibliographic programme. It is promoted by UNESCO in cooperation with IFLS, to create a world wide system for the control and exchange of information. It had been recognized that the success of such an international programme (Universal bibliographic control) depends on efficient national bibliographic control and, therefore, emphasis was laid on the national bibliographic agencies. As stated in Universal Bibliographic Control: a long term poliey' by Dorothy Anderson, the Director, IFLA

International Office for UBC< the requirements of UBC at national and international levels are as follows.

UBC requirements at the National level

At the national level the operation of the system will have the following requirements:

- a) of ensuring to make the bibliographic record of each new publication as it is issued (i.e. by legal deposit of similar governmental regulation, or by voluntary agreement);
- b) the machinery by which that bibliographic record can be made, that is, the establishment of the national bibliographical agency which will:
 - i) create the authoritative bibliographic record for each new publication issued in the country.
 - ii) publish those records with the shortest possible delay as a national bibliography;
 - iii) produce and distribute the records in a standard physical form (cards, machine readable tapes, or acceptable alternatives);
 - iv) receive and distribute within its own country similar records produced by other national bibliographic agencies.
 - v) Eventually, as circumstances permit, create a retrospective national bibliography of the country's published output..

UBC requirements at the international level

At the international level the integration of national bibliographic agencies to form the total system depends upon universal recognition and acceptance

- a) that each national standards in creating the bibliographic agencies is the organization responsible for creating the authoritative bibliographic record for the publications of its own country, and
- b) of international standards in creating the bibliographic record:
 - i) its contents; the elements to be included in the authoritative record, the order of those elements, means of distinguishing the elements and their functions;
 - ii) its physical form: compatibility of machine readable records, standardization of catalogue cards.

It is clear from the above statement that UBC is based on: 1) the development/improvement of national bibliographic control, and 2) the identification and development of necessary international standards.

Role of UNESCO in Bibliographic Organization and Control

UNESCO was born as a subsidiary body of the United Nations Organization in 1945 to meet the challenge of international bibliographic explosion. In the constitution of Unesco it is stated that on behalf of the member Governments the Organization shall maintain, increase and diffuse knowledge by encouraging cooperation among the national in all branches of intellectual activity including the exchange of publications and other materials, national and international, by initiating the methods of international cooperation calculated to give the people of all countries access to the printed and published materials produced by any one of them. Accordingly the first task it undertook was the production of a Universal Bibliography. Theodore Besterman started its compilation, but the project had to be abandoned in view of the ever increasing number of publications in different languages and on different subjects, increasing cost of compilation, inordinate time required for the purpose and paucity of resources to cope with the work.

Unesco then ventured on stimulating existing bibliographical services and coordinating them. The objectives of Unesco in bibliographic organization are

- (i) to stimulate the activities of national and international organizations engaged in bibliographical work
- (ii) to coordinate bibliographical activities of various countries and to encourage international bibliographic project
- (iii) to act in cooperation with various international bodies like International Federation of Library Associations (IFLA), International Standards Organization (ISO), Federation of International Documentation (FID), International Council of Archives (ICA), International Council of Scientific Union (ICSU) etc.

An International Conference on Bibliography was held in Paris in 1950 for the consideration of the various aspects of bibliographical work, cooperation, organization and control and the Conference recommended the following :

1. Every country should have a national planning body
 - (a) to look after bibliographic planning of that country
 - (b) to develop bibliographical information services
 - (c) to undertake research in bibliographical method
 - (d) to find out the areas in which the country is weak and what special attention is required to strengthen them
 - (e) to coordinate bibliographical activities within the country and
 - (f) to act as an international link.
2. Every country should establish a national library which would acquire all materials published within the country by means of Compulsory Deposit Act and compile a national bibliography.
3. Every country should have a Bibliographic Documentation Center which would be responsible for documentation, storage and retrieval of bibliographic information for the country. It would also ensure international library cooperation including inter-library loan. Moreover, it would be responsible for the production of Union list of various reading materials, bibliographies and guides to sources of information.

As a result of the recommendations of this International conference a committee was set up under UNESCO. The committee was named International Advisory committee on Bibliography and later named international Advisory Committee on Bibliography, Documentation and terminology. The functions of this committee are

- (i) to examine and resolve the problems in the areas of bibliographic cooperation
- (ii) to examine and locate the areas where subject bibliographies are inadequate
- (iii) to act as liaison between UNESCO and various national bodies undertaking bibliographic projects
- (iv) to find out the area in which international cooperation in bibliography is necessary
- (v) to act as a body for deriving necessary funds and technical assistance from UNESCO for those organizations which are carrying out the projects under UNESCO.

Activities of UNESCO

Apart from helping and encouraging bibliographical activities at national levels and promoting international bibliographical tools for the guidance of the international community of readers. It has been bringing out a bulletin entitled Bibliography, Documentation and terminology in six languages : English, German, French, Spanish, Chinese and Rumanian containing reports on various bibliographical projects of UNESCO, and those of member nations and other international organizations. Besides, it has brought to light a number of publications like.

Bibliographical services throughout the world by Robert L.Collison

National Bibliographical services their creation and operation by Knud Larsen

(a)Vocabularium Bibliothecari. The last one is a vocabulary of glossary of technical terms pertaining to bibliography, librarianship, publishing and printing. It includes, German, French Russian and Spanish.

One of the major functions of UNESCO. In the field of bibliography is to publish need-based bibliography of social Sciences. It is issued in four parts : Part 1 Economics, part 2- Political Science, Part 3- Social Anthropology and Part 4 – Sociology. Each of these is an annual classified list of books, periodicals, pamphlets, periodical articles and official publications in various languages including those of Asia and Slavonic countries. To cope with the problems created by information explosion in the fields of science and technology UNESCO arranged three important working groups : one in Philadelphia in 1962 for collecting scientific information and looking after scientific publications, another in Moscow in 1963 for automatic documentation, storage and retrieval and still another in Rome in 1964 for looking after scientific and technical vocabulary, translation and technology. It also issued a number of guides such as World Guide to Scientific information and Documentation Centres, A World Directory of Technical Information and Documentation Centers, A list of Annual Progress of Research in Science and Technology etc.

To cope with the problem of languages UNESCO lays stress on producing vocabularies, thesauri and multi-lingual dictionaries. A World Guide to International Scientific and Technical Dictionaries is one of its great achievements. Then again, with financial aid from International Council of Scientific Union (ICSU) Unesco is now engaged in publishing Abstracts in Physics, Chemistry and Biology. It makes necessary arrangement for exchange of specialists in the field of scientific terminology, computer vocabulary etc. Another notable contribution of Unesco was the revival of Index Translationum in 1948 which was originally sponsored by the international Institute of Intellectual Cooperation in 1932 but ceased to come out during the war years (1940-45). It is an annual publication listing the translations of books and other records with full bibliographical details of each. It covers the languages of most of the countries of the world (more than 71 countries) and arranged by country under ten major headings of the UDC.

All these clearly show that the UNESCO has been playing a very important role in bibliographical organization and control. It not only stimulates and coordinates various bibliographical activities throughout the world but also renders some valuable services itself. It is also lending its helping hand to abstracting services. On the whole UNESCO has been making various efforts to bring the people of the world closer to one other, which are welcome to all nations. Thanks to UNESCO, serious readers and intellectuals feel no longer handicapped for lack of proper intellectual resources covering the whole world.

3.4 NATIONAL BIBLIOGRAPHIC CONTROL

The system of UBC is understood as the sum of national bibliographic contributions. It follows naturally that every endeavour to strengthen national bibliographic control will assist the development of the total UBC network. Both the “item of literature” in its physical form and its “surrogate” form as the bibliographic record are a matter of concern to the national library of each country; or that library within a country which undertakes the functions of a national library. According to Dorothy Anderson. “It is suggested that the national component of the UBC systems should normally be the national library receiving all types of published documentary material by legal deposit and hence maintaining the national collection; and that within the national library the functions relating to bibliographic control should be performed by an organizational unit; the national bibliographic agency, which will make the authoritative bibliography record for each item added to that collection and will carry out all the functions associated with the production of the record; that is, produce the national bibliography”.

International Bibliographic Standards

The basic premise for UBC is that the comprehensive bibliographic record of a publication is made once in the country of its origin in accordance with international standards which are applicable in both manual and mechanized systems and record is then made available speedily in a physical form which is also internationally acceptable. The detailed elements that make up the comprehensive and authoritative bibliographic record include all the information about the publication which may be required to fulfill any of the functions of all aspects in the preparation and production of the comprehensive record has been undertaken by cataloguers and bibliographers and other experts working together in small international groups or at larger international conferences, usually under the auspices of one or other of the international organizations involved in ‘Standard setting’ viz., ISO, UNESCO and IFLA. In 1980, Unesco Working Group brought out the UNISIST Guide to Standards for information Handling’.

The data elements that may be required in a comprehensive record of a document are grouped into:

- a) Those that relate to authorship, i.e., the Heading
- b) Those that describe the item, including its physical form, i.e., the Description
- c) The unique identification of the item : International Numbering Schemes (ISBN & ISSN)
- d) Those relating to subject content, its functions, etc, (The subject approach).

a) Headings

The international agreement towards standardization in the Headings for documents goes back to the International Conference on Cataloguing Principles (ICCP), held at Paris, in 1961. About 20 national and international cataloguing codes were formulated based on the statement of principles – the Paris Principles. The AACR-2, is multinational or supposed to be the international catalogue code. AACR2 and AACR2R, published in 1978 and 1988 respectively had adopted the ICCP Rules to maintain conformity.

b) Description

The International Meeting of Cataloguing Experts (IMCE) in 1969 established the basis for internationally uniform description cataloguing practices. At the meeting, a working group was set up with its task to develop an International Standard Bibliographic Description (ISBD). The ISBD was published first international 1971 and some national bibliographies started using the ISBD from 1972 onwards. Later a number of IFLA working groups were established and the following ISBDs were published to facilitate the standardization of description of various types of materials, compatible with the framework of the General International Standard Bibliographic Description (ISDB) (G).

ISBD (M) - Monographs (first published in 1971 and revised in 1978)

ISBD (S) - Serials (1977)

ISBD (G) - General (1977) – A general framework of structure of description for all kinds of documents.

ISBD (CM) - cartographic materials (1977)

ISBD (NBM) - Nonbook materials (1977)

ISBD (A) - Antiquarian (1980)

ISBD (PM) - Printed Music (1980)

ISBD (CF) - Computer files (1990)

The use of ISBD had reduced the importance of traditional differences in cataloguing practices and catalogue codes related to choice and form of headings, names of authors etc. The future development of the international exchange of bibliographic records can be envisaged as a system which is flexible, economical and catalogue-code independent. That is records made in accordance with the ISBDs, making use of structured authority control system.

The ISBDs having already been adopted by and introduced into at least 10 national and multinational cataloguing codes. It is an indication of its acceptance world wide and of the recognition of their universal applicability. The following catalogue codes are some examples that have adopted ISBDs; Anglo American Cataloguing Rules (AACR2 and AACR2R), 1978, 1988 and 1998; the German Cataloguing Rules, the Regeln für die alphabetische Katalogisierung (RAK), 1977; and the Nippon Cataloguing Rules, 1977 prepared by the Japan Library Association. The ISBDs are also translated into 15 languages.

C) International Numbering Schemes

The international standard numbering schemes, particularly, the International standard Book Number (ISBN) and International Standard Serial Number (ISSN) are developed in handling the books and serials respectively. These two standard numbering schemes are complementary to the international standards for the bibliographic records like ISBDs.

The objective of the numbering schemes is to identify a document by a unique number, and also help as a retrieval tool for the documents, Inclusion of ISBN has become a mandatory element in the comprehensive record of the national bibliographic agencies of several countries. A number of computer based library interlending systems make use of ISBN as an access point. Basically, it is a tool promoting national bibliographic control. The utility of ISBN Scheme in the publishing trade is enormous. About 90% of publications in Sweden and about 95% publications in Norway have extended the application of ISBN international machine readable code form facilitating tele-ordering of publications.

D) Subject Approach

The conflict of interest is significant at national and international levels among the national bibliographic agencies while doing subject analysis and identification of documents in regard to their conformity with the international standards. The different approaches to knowledge variations is subject development and alternations in meanings of the word, create problems in finding internally acceptable standard form for subject approach.

It was presumed that in lieu of subject headings, the adoption of a universal system of classification linked with numerical or alphanumeric tables could solve the problems of international understanding. But no classification scheme like DDC or UDC was totally agreeable to all countries of the world and all types of libraries.

Machine Readable Bibliographic Records

The UBC programme, as we understood, has the basis in the development of component national parts, with contributions large or small, of compatible records produced international manual of machine readable form. If all the bibliographic records are available in machine readable form, it will facilitate in visualizing the concept of the total system of UBC for quick and exchange of bibliographic records.

The future pattern of national bibliographic agencies shall have comprehensive computer based systems for controlling internal operations, producing national bibliographic records, and transmitting and receiving bibliographic information in national, regional and international networks.

The objectives of UBC programme is to create a machine record as one automated system in such a way that it can be immediately available and usable in automated library systems in all countries. However, to achieve such uniformity, it is necessary to have accepted standards for the machine structure of the records and for labeling the various elements that make up the comprehensive contents of the record. The following are some standards developed so far.

1. ISO-2709: A standard for the record structure prepared by ISO, which provides basis for most national, regional and international exchange formats.
2. UNIMARC: Universal MARC, the exchange format for use among national bibliographic agencies. It is an improvement over ISO-2709 by grouping data into functional blocks and aims thorough the use of ISBD, to be catalogue code independent.
3. UNISIST Reference Manual for Machine Readable Bibliographi Description (2nd rev. ed. 1981): A standard structure developed by UNISIST and is used by several international information systems and some commercial organisations in abstracting information services.
4. Common Communication Format (CCF) : Sponsored by the Unesco's General Information Programme (PGI) to facilitate the exchange of records. It is to serve as a bridge between different types of formats currently in use by libraries and information community.

3.5 UBC AND INTERNATIONAL MARC PROGRAMME (UBCIM)

The old international programme of UBC had become the 'Universal Bibliographic Control and International. MARC Programme (UBCIM) in 1987. The UBCIM is an exhaustive programme for which UBC was engaged for early two decades of its existence. It is not a totally new programme. Since 1987 UBCM produced many publications and created awareness of the programme among the library profession. It improved and promoted the programme's journal and updated old manuals, standards, etc.

(i) Aims of UBCIM

The aims of UBCIM programme were summed up briefly at the 1988 IFLA Conference, as “the exchange and use of compatible bibliographic records amongst libraries in general and national bibliographic agencies in particular”, and to create, maintain and promote the use of standards for the exchange of bibliographic data in machine-readable form.”

(ii) Activities of UBCIM

The important activities of UBCIM in pursuit of universal bibliographic control are:

1. The revision of ISBDs, which necessitated in view of the inconsistencies in the specific texts of several ISBDs, for harmonized editions / texts of these ISBDs. A new revised edition of ISBD (G) is under preparation by the Review Committee.
2. The UBCIM has published a report on interfacing MINISIS and UNIMARC (MINISIS / UNIMARC Project: a final report / E. Woods). This was international response to a growing demand for UNIMARC at national level for adopting the format. Many institutions have successfully adopted UNIMARC for implementation with software such as MINISIS and CDS / ISIS. UBCIM office has also published the following works relating to the UNIMARC format:

International Guidelines for the Cataloguing of Newspapers, by Hana Komorous and Robert Harriman (1989).

UNIMARC international theory and practice: Papers from the UNIMARC' workshop Sydney (Australia), August 1988 (published in 1989).

In the series of UBCIM occasional papers it has recently published a revised edition of *Standard Practices in the preparation of Bibliographic Records*. The programme office supervises the preparation of comprehensive Manual of the ISBD.

Further the original quarterly bulletin of UBC (*International Cataloguing*) which was a vehicel for disseminating information on worldwide cataloguing developments in general and UBC activities in particular, has been the after the creation of UBCIM programme changed to “*International Cataloguing and Bibliographic Control*” (CBC). The UBCIM programme (office) is transferred from the British Library to the Deutsche Bibliothek in April 1990, to spread the burden of responsibility for hosting its core programmes, so as to ensure the continuous maintenance and promotion of UNIMARC.

3.6 UNIVERSAL AVAILABILITY OF PUBLICATIONS (UAP)

The Universal Availability of Publication (UAP) is the second important programme of IFLA, the first one being the UBC. However UBC and UAP are interrelated to each other. The UAP programme is intended to promote the international interlending of publications by increasing their availability and obtaining them speedily. It had been well recognized that no single library, and indeed no country, and not even the well organized British Library Document Supply Centre (BLDSC) can approach self-sufficiency in the provision of library materials. Further, lack of materials in the third world countries need not be over emphasised. It is in this context that there is every need and importance for Universal Availability of Publications.

(i) Meaning

According to Maurice B Line, the UAP means, that “every published document, whenever and wherever published should be available to any one who wants it and at the place where he wants it- its presence in a reference collection far away from the user, is not enough.

Donald Urquhart emphasizes that UBC was not an end in itself and that universal involvement of users seeking information was essential. He also made it clear by stating that UAP applies not only to all information but to all people.

(ii) Objectives

The basic objective of UAP programme is to make available all the publications to all people by increasing the availability and speed of interlending services and by developing simple and efficient procedures. The ultimate aim should be to ensure that all individuals throughout the world are able to obtain for personal use any publication whenever or wherever published either in original or in copy which means freedom of information at all levels from local to the international. UAP also aims at ensuring that the existing access to information on documents through UBC is matched by improved access to the documents themselves.

(iii) Requirements

For the success of the UAP programme the prime requirement is to have a national interlending system for each country, which ultimately would depend on i) a comprehensive and effective availability of publications at national level; and ii) a system of universal lending through the national agency.

However, the basic requirements according to Stubbs Stuart and Simpson are:

1. “ Publishers in each country seek to match their publishing and distribution programmes closely with national and international requirements by soliciting manuscripts and by selecting from unsolicited manuscripts;
2. effective book trade channels be developed to ensure the prompt availability of material to consumers;
3. Libraries, documentations centres and archives develop effective policies and procedures for the acquisition of materials whether by purchase, gift or exchange to serve present and future needs;
4. Libraries, archives and documentation centres develop effective policies and procedures for the supply of documents either in original or as copies to remote as well as to local users and
5. The library and archives system of each country ensure the retention of at least one copy of all published documents required”.

Thus, the responsibility of making the UAP programme successful rests with the governments, publishers, booksellers, information professional and learned associations, libraries and archives. Further, it is also dependent on copyrighting, publishing, and distribution. The other important aspects are: i) Acquisition policies and practices, the need for national system and the need for improved communications between various sectors of the information world; ii) Repository planning, necessitating positive action at national and international levels; and iii) National and international lending policies and practices (their requirements, costs and efficiency in terms of speed of supply) and the possibility of instituting models.

(iv) Activities

The two main activities of the UAP programme are:

1)Publicity and 2) Research. The publicity is needed to draw attention to the various problems of UAP. There are still a number of people among the information community, who hardly know what the programme stands for.

The UAP programme utilizes several channels of communication, like seminars, conferences and publications, to publicise and emphasize the need for action. The seminars and conferences have been organized at the international, regional and national levels. The International Congress on UAP in 1982 was followed by a Seminar for librarians in developing countries. Likewise, an international seminar was organized in Boston Spa international 1983 with the financial support form UNESCO.

The participants from China, Coloumbia, Zambia, India and Jamaica attended the seminar. This helped to promote the UAP in their respective countries and to stimulate research organise meetings and to get involved in pilot projects. In 1986, another seminar was directed to the librarians information specialists in St. Lucia. The main recommendation of this seminar was to carry out further researches to assess abailability and to suggest solutions for improvement in the region concerned. In the same year, several countries organized national meetings, with the financial support of Unesco, eg. National Library of China, National Library of Canada, etc.

The publications were the other major means used for publicity. One onf the important publications is **Universal Availability of Publications (UAP)** / by Maurice Line and Stephen Vickers (1983). Further, the programme of activities and concern of UAP are being publicized through **IFLA Journal and UAP Newsletter**, which had been published twice a year since 1983. Apart from these, a general information brochure is regularly updated and made available at annual conference.

(v) **UAP – and Present Scenario**

The IFLA's oldest programme is the Universal Bibliographical Control (UBC), which was merged in 1987 with International MARC to form UBCIM. UAP is the second important programme of IFLA. These two programmes (UBC and UAP), which have a complementary relationship, are stated to be the two components of a still larger concept of UAI (Universal Availability of Information) i.e., $UBC + UAP = UAI$. UAP is in fact, a prerequisite of UBC, as no bibliographic agency an record the new items in national bibliography without the availability of documents. UAP is in a sense more comprehensive than UBC, because it is not only geared to librarians but is user-oriented.

In 1986, IFLA launched two new programmes viz., Universal Dataflow and Telecommunications (UDI) and Preservation and Conservation (PAC). UAP and UDT have common concerns, in as much as UDT activities are parallel conventional activities associated with the availability of publications. Electronic mail (particularly across national boundaries) and its document delivery aspect are potential areas of cooperation. It has been suggested that IFLA should propose a scheme for Universal Availability of Data. Further, UAP and PAC are interrelated, because the retention/ or preservation of documents is an essential element of UAP otherwise the documents become unavailable.

3.7 BIBLIOGRAPHIC ACTIVITIES IN INDIA

Regarding the bibliographic activities in India, the work of INSDOC and Association of Indian Universities (AIU) is worth mentioning. In addition to this, the National Library, Calcutta and the National Medical Library, Delhi, are involved in a number of bibliographical

projects. Important bibliographic projects of India's National Library are compilation of 56 volumes of bibliography on Indology. Some volumes have already been published.

INB is another important regular activity of the National Library. The four volume work, National Bibliography of Indian Literature, records, 60,000 books published in 15 languages of India covering the period 1901-1953. Association of Indian Universities (AIU) had brought out a series of bibliographies on Doctoral Dissertations accepted by Indian Universities from 1857 to date and thus has established bibliographical control on these type material. NASSDOC's bibliography on Gandhiji and its various other indexing and abstracting services in the fields of social sciences, like Psychology, Sociology and Social Work etc., are worth mentioning.

Indian Science Abstracts, Union Catalogues of Periodicals in Science and Technology and other bibliographical services covering Russian literature received by them are the important bibliographical activities of INSDOC.

3.8 SELF ASSESSMENT QUESTIONS

1. Explain the concept of UBS
2. Examine the feasibility of the realization of UAP
3. What is the role of UNESCO and IFLA towards UBC and UAP?

3.9 SUGGESTED READINGS

1. Avicenne, Paul. *Bibliographical Service throughout the World*, 1960-1964, Paris, Unesco, 1969.
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LESSON - 4

REFERENCE SOURCES: NATURE, TYPES AND UTILITY AND EVALUATION

AIMS AND OBJECTIVES

The aim of this lesson to explain the concept of Information / Reference sources. After reading this Lesson You would be in a position to understand the types of Reference sources, their characteristics and utility. Further you also learn the check list for the evaluation of printed reference sources and also web resources.

STRUCTURE

- 4.1 Introduction
- 4.3 Types of books
- 4.4 Types of Information Sources
- 4.5 Reference Book / Sources
- 4.6 Utility of Information Sources
- 4.7 Evaluation of printed reference sources
- 4.8 Criteria for evaluating the web resources
- 4.9 Self Assessment Questions
- 4.10 Suggested Readings

4.2 INTRODUCTION

A book contains organized human knowledge and is in use from ancient times as a well accepted media of communication. To describe physically, a book is a collection of leaves of paper, parchment or other material, bound together along one edge within covers. In scholarly sense, a book is a literary work or a main division of such a work with a systematic way of presenting the thought content on any subject. A book produced in electronic format is known as an e-book. It is a handy, portable printed information storage device commonly forming a large portion of a library collection, and not requiring mediating technology for use. Hence a book can be defined as any written or printed composition of some length.

4.3 TYPES OF BOOKS

The books can be further categorized based on various factors like content, level of presentation, audience etc. For example: **Text books**- used for study or to impart subject based on curriculum. E.g. Elements of Library classification by S.R.Ranganathan
Treatise – Comprehensive, authoritative & Systematic compilation of knowledge with detailed coverage E.g. Laski's Grammar of Politics.
Monograph: Scholarly treatise on a specific area of knowledge.

E.g. Library without walls by Singh & Murthy

Classic: an outstanding work of scholarship & high merit. E.g. Geetanjali by Rabindranath Tagore

Reference book: – it is an approach material, from where we can find information upon the original knowledge. They indicate/ direct, about the availability and serve as the mirror of information and gateway to knowledge. These are also called as reference sources, reference materials, reference tools, reference works, and information sources.

General book vs. reference book:

General Books

- It is made of continuous exposition-sentences, paras, chapters etc all lead to single exposition
- Written primarily to be read consecutively for inspiration, enjoyment, information and education.
- Generally cover a fairly broad subject area, designed to impart education or knowledge.
- These are structured on the basis of the subject or syllabus.
- User reads them from cover to cover to gain basic knowledge on the subject

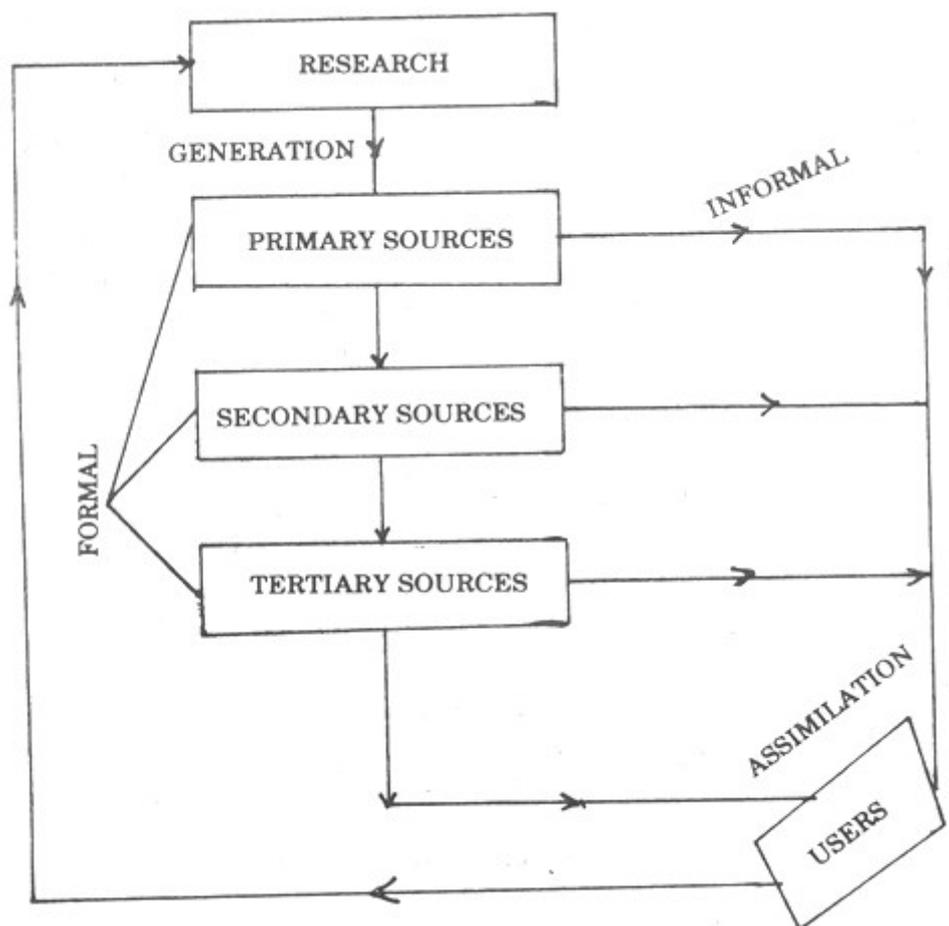
Reference Book

- They have disjointed entries, arranged alphabetical / Chronological.
- Designed to be consulted or referred to from time to time for specific info.
- Consists little information; more formulae, statistics, maps, diagrams, and bibliography
- Structuring is not according to subject.
- User refers them either to get broad view or to get information on specific topic.

4.4 TYPES OF INFORMATION SOURCES

Economic, social, scientific, industrial and technological developments are dependent on scientific discovery. Discovery in turn depends on heavily the ability of the scientific community to assimilate the results of previous research. The availability of information about the existing body of research is essential for the scientific activity.

Generation, transmission and utilisation of information are a continuous activity. Any breakdown in the communication system will lead to serious consequences. All the above activities should be kept in a proper dace so that scientific work can be accelerated. The following figure reveals the role of the various sources in the information transmission process.



Information sources can be broadly divided into documentary and non-documentary sources. Documentary sources are recorded information which are formal in nature. Non-documentary sources are directly transferred from the source to the users. According to the sources of generation, information sources can be grouped into three broad categories: Primary, Secondary and Tertiary.

Brief information about these categories is as follows:

Primary Documents: These documents represent new knowledge or new interpretation of old knowledge. They are the first published records of original research and development. Often a primary document may be the only source of information in existence. According to Hanson the books, journals, reports, patents, these, trade literature standards, etc., are the primary documents. Grogan adds the conference proceedings and official publications to them but excludes books from them.

Secondary Documents: The secondary documents do not carry new and original information but guide the users to the primary documents. They are compiled from the primary documents. They organize the primary literature in a convenient form. These documents are of three types: a) those which index selected portions of primary literature and help the users in finding what has been published on a given subject, such as indexes, bibliographies, abstracts, etc., b) those which survey selected portions of the primary literature to help the users in knowing state-of-art of a given subject, such a reviews, treatises etc. c) those

documents which themselves contain the desired information collected and selected from primary documents. The information such as biographies, facts formulas, histories, procedures, theories etc., is derived from the primary documents and is arranged systematically in some convenient order in such secondary documents. Dictionaries, encyclopedias, handbooks, manuals etc. are some of the documents of this type.

Tertiary Documents: The tertiary documents list the secondary documents. Their function is to help the researchers in retrieving the secondary sources. Directories, yearbooks, bibliographies of bibliographies, lists of research in progress guides to literature, guides to organizations, guides to libraries, text-books etc., are included in this category of documents.

In brief, the classification of documents according to Ranganathan, Hanson and Grogan is as follows.

S.R. Ranganathan's classification:

Conventional: Books, Periodicals, Maps, Atlases etc.

Neo-conventional: Standards, Specifications, Patents, Data etc.

Non-conventional: Microforms, Audios, Visuals, Audio-visuals etc.

Meta-Documents: Directly produced document without human intervention.

C.W. Hanson's Classification:

Primary: Books, Periodicals, Theses, Dissertations, Reports, Patents, Standards, Trade literature, Conference Proceedings etc.

Secondary: Catalogues, Bibliographies, Indexes, Abstracts, Indexing and Abstracting Journals etc.

Denis Grogan's Classification:

Primary: Periodicals, Research reports, Conference proceedings, Patents, Standards, These and Dissertations, Trade literature etc.

Secondary: Reference books, Indexing and Abstracting journals, Reviews of progress, Text-books, Monographs etc.

Tertiary: Bibliography of bibliographies, Yearbooks, Directories, Guides to literature, Lists of research in progress, Guides to libraries, Guides to organizations etc.

Sources of information often referred to as reference source or reference book or information source. These form the basis of reference work in any library.

4.5 REFERENCE BOOK /SOURCES

Secondary sources are the tools of access to primary sources of information. Hence these sources are well defined and organized. The productions of secondary sources are time-consuming and also costly. Moreover, collection, analysis, synthesis and repackaging of scattered primary data within a given time (without much delay and time gap between the publication of primary and secondary data) is an up-hill task. This had been made easier and faster with the information of computers in information handling.

The secondary sources are essential records for any library's collection to create awareness and access to primary data, as they largely save the time and cost of the consumer group. For those of the primary literature in foreign language, secondary sources like abstracting sources with summaries in English language are highly warranted. The R&D

people, decision-makers, business class, researchers etc cannot function without access to secondary sources.

Most of these secondary services also provide back-up service to the users on-demand. Photocopy of the original papers can be obtained from the producers whether freely or on fee-basis, as the case may be.

According to Gates, “The term ‘reference Book’ has come to mean a specific kind of publication which has been planned and written to be consulted for items of information, rather than to read throughout. It contains facts that have been brought together from many sources and organized for quick and easy use, either in an alphabetical or chronological arrangement or by use of detailed indexes and numerous cross references”.

S.R.Ranganathan defined it as “A reference book is characterized internally by an ensemble of disjointed entries of short, through varying lengths. The sequences of entries are not determined, strictly by intimate thought sequence. It is determined by the scheme of arrangement chosen. It is often alphabetical in the main entry. It is occasionally systematic. Even the connection between the consecutive entries is not as compelling and continuous or as free from jerks as between paragraphs in an ordinary book, or a reference book may consist mostly of formulae, statistics, diagrams, tables, maps or lists including lists of documents with or without abstracts, annotations and other features.

ALA Glossary defines as “A book designed by its arrangement and treatment to be consulted for definite items of information rather than to be read consecutively.”

Characteristics of Reference Books:

The basic characteristics of reference books are:

- They are intended primarily for occasional consultation.
- They are not meant for comprehensive reading
- They are consulted for definite items of information.
- The information included in them is collected from a vast number of sources.
- It is miscellanea of information or facts.
- The arrangement is such that it facilitates easy recall.
- Includes only bird’s eye view of the topics.
- Usually concentrate on facts.
- Normally not issued on loan and to be referred in the library.

Varieties of Reference sources with their information value

	Varieties of sources	Nature of information	Function and value.
1	Dictionaries	Language	Definition, spelling, pronunciation, usage, etymology, parts of speech etc.
2	Encyclopedias	Background	Overview of the subject
3	Biographical	People	Notables, specialists, life sketches
4	Bibliographical/ Catalogs/Index	Subject literature	Reviews, best books, articles in periodicals.
5	Geographical Maps, Gazetteers	Places	Locations description, distance

6	Directory	Organization and individuals	Address and products
7	Hand books & Manuals	Specific subjects	Statistics, events, formulae how to do, how to make etc.
8	Year books, Almanacs Statistical sources	General	Current events, past year
9	Audio-visual sources	Subject and music	developments, recent events

4.6 UTILITY OF INFORMATION SOURCES

- Each type and every sources is valuable in its own way
- To keep up to date and well informed the new developments, trends and advancements in the various fields.
- To avoid duplication of research
- To help others to conduct further research and thus generate more and more information
- To know what other researchers are doing or about to do in a particular subject filed.
- To provide answers for some specific queries
- To furnish background information to understand a subject, new or old or unfamiliar.
- To provide all relevant information on a given subject.
- To offer a fruitful path to information
- To browse a wide variety of knowledge.

4.7 EVALUATION OF PRINTED REFERENCE SOURCES

Evaluation means assessing the value or worth of a work. The libraries are depending on the reference sources to meet varied information requirements of their user community. Hence there is a need to ascertain the value of the reference books they are purchasing in terms of their authenticity, currency and value and to assess the worth of the work for the huge costs incurred on them. The evaluation is necessary

To know the quality of reference book

To identify the purpose and scope

To find out whether it suits to the user needs.

To ascertain that the cost invested has value (cost effectiveness)

A reference book must be able to provide specific and accurate answers to queries without much difficulty. It would prove to be of poor quality if it is not able to provide direct, authoritative, answers. According to Louise shores, the important points to serve as checklist criteria for evaluation of reference book consist of 1) Authority 2) Scope 3) Treatment 4) Arrangement 5) Format 6) Special features.

Criteria for evaluation of reference sources

1. Purpose: The purpose of a reference work can usually be evident from little, table of contents, preface, introduction & index. Other sources for clue are publisher's catalogue, books reviews etc. the check points that indicate purpose include:

- Title and subtitle of the work
- Table of contents

- Introduction or preface- author or compiler expresses the purpose.
 - Index- sampling of the terms reveal the coverage of subjects
2. *Authority*: The authority of information of a reference work usually judged from the following:
- The author's qualification and experience and that of contributor or editors
 - Whether the work used primary or secondary sources.
 - Whether articles are signed to indicate responsibilities.
 - The librarian's own understanding of knowledge of subject.
 - Reputation of sponsoring body/ Publishers.
 - Genealogy of the work i.e. new or based on previous publication and the extent of the revision, and writing style.
3. *Scope*: This includes the coverage and to what extent purpose is fulfilled. The factors for evaluation are –
- Subject scope- comprehensive or selective- are there any limitations
 - National or political scope- whether there is any bias
 - Scope of the bibliographies if any, in terms of numbers, length, language, timeliness.
 - Inclusion or exclusion of indexes, illustrations etc.,
 - Timeliness- date of publication, copy right etc. indicate the recency and up to dateness of the material.
 - Consistency of scope for comparable entries.
 - Scope in relation to other works - can the reference wok be used alone or must it be supplemented by others.
4. *Treatment*: Level of the reference work- whether suited to the requirements of juvenile or adult audience; to the scholars or students of a subject or to the lay person with little knowledge of the subject. The language style, the terminology of material must be examined.
5. *Arrangement*: Arrangement is important to locate information easily and quickly and to provide a handy form of access to the material. It can be alphabetical, classified or chronological or some other but should have a sound basis.
- It should have author, title & subject indexes.
 - Cross references leading to other information.
6. *Format*: It refers to the physical makeup of the book.
- Typography and Layout of the pages.
 - Space between lines, columns, margins.
 - Readability, clarity and quality of text, illustration, photos, diagrams etc.,
 - Quality of paper binding.
 - Is the physical get up attractive
7. *Revision*: Is there continuous revision policy in practice. The information will be obsolete within no time hence revision should be done at regular intervals adding the current information. There can be annual supplements or complete revision policy.
8. *Special Features*: What are the distinctive features which distinguish this reference book from other reference books of similar type? E.g. Annexure, Weights and Measures, formulae, Tables, Maps etc.,

4.8 CRITERIA FOR EVALUATING THE WEB RESOURCES

The present day information environment is characterized by the maximum use of internet or web resources to answer the queries and provide access to information. The libraries are making use of the Internet to provide reference information of any nature making

use of variety of websites. However, information on the Internet is mostly unfiltered unlike print. Many sites provide valuable information while others have information that is unreliable and misleading. Hence, there is a need to evaluate the resources on the web.

1. *Authority*- Who is the author? Is the author the original creator? Does the author's occupation and other credentials provided?
Who is responsible for the site? Homepage reveals related information.
What is the affiliation? Does the information exercise quality control?
2. *Who pays for the site?* It cost money to run a website. For e.g. web address may end with '.gov' or '.com'. The later may sell advertising if sponsored by a company. E.g. Drug information.
3. *Purpose*: 'About this site' on home page reveals the purpose that helps to evaluate the reliability and suitability; whether it is to inform, explain or persuade.
4. *Source of Information*: Original or collected from other sites; whether the original source clearly labeled; When was this information created and last updated.
5. *Basis of information*: The site should provide details of the source from where the facts and figures or references are taken. The opinions or information should be evidence based.
6. *Selection of Information*: Is there an editorial board? Whether the members are experts to assess the quality of wok before it is posted on the site.
7. *Currency*: Web sites should be reviewed and updated on a regular basis. It is particularly important for science. The most recent update or review date should be clearly posted to prove its validity.
8. *Links to other sites*: Some sites will not provide links, some to any site that may not be useful.
9. *Privacy of user/ viewer*: The site asks info of the user to' become a member' or 'subscriber'. The commercial sites sell the aggregate/ collected data to others. What data is required to sign up needs examination.
10. *Interactions with vision*: The web is interactive, receives question and feed back. Is the site hosts chat rooms or discussion areas or moderated? Better to read this before sign in.

4.9 SELF ASSESSMENT QUESTIONS

1. Explain the nature and characteristics of Secondary sources
2. Explain the important characteristics of primary sources of information.
3. Discuss the nature and characteristics of Reference Books
4. Examine the criteria for the evaluation of printed reference sources
5. How do you evaluate the Web Resources?

4.10 SUGGESTED READINGS

1. Grogan, D. Science and Technology: An Introduction to the Literature.
2. Higgins, G. Printed Reference Material.
3. Katz, W. Introduction to Reference Work. Vol. I.
4. Sharma & Grover. Reference Service and Sources of Information New Delhi: Ess Ess Publications.
5. Encyclopedia of Library & Information Science. Vol. 26.

LESSON - 5

REFERENCE SERVICE: NATURE AND TYPES

AIMS AND OBJECTIVES

The aim of this Lesson to explain the concept of Reference service . After reading this Lesson You would be in a position to understand the need and purpose of Reference Service and its types such as Ready Reference Service and Long Range reference Service.

Structure

- 5.1 Introduction**
- 5.2 Definitions and Meaning**
- 5.3 Need and Purpose of Reference Service**
- 5.4 Functions of Reference Service.**
- 5.5 Ready Reference Service (RRS)**
- 5.6 Long Range Reference Service (LRRS)**
- 5.7 Difference between Ready Reference and Long Range Reference Service**
- 5.8 Self Assessment questions**
- 5.9 Suggested Readings**

5.1 INTRODUCTION

The introduction of the five laws of Dr. S.R. Ranganathan was responsible for, the reference service to become the keystone of professional practice. It is considered the *raison d'être* of the whole of librarianship. With the growth of this idea that books are for use, the librarians according to Dr. S. R. Ranganathan are now “canvassing agents” for library collection. This is the spirit of this new method called reference service.

5.2 DEFINITIONS AND MEANING

According to James I Wyer Reference Service is that “part of library administration which deals with the assistance given to the readers in their use of the resources of the library”. He further states that “it is a direct or sympathetic and informed personal aid in interpreting library collection for study and research”.

According to Margaret Hutchins “reference service includes the direct, personal aid within a library to persons in search of information for whatever purpose and also various library activities especially aimed at making information as easily available as possible.”

Dr. S. R. Ranganathan defines reference service as “the process of establishing contact between a reader and his document in a personal way.” He has further stated that reference service is a personal service to each reader in helping him to find the documents answering his interest at the moment pin-pointedly, exhaustively and expeditiously.

Samuel Rothstein defines reference service as “the personal assistance given by the libraries to individual readers in pursuit of information.” According to Louis shores, “Reference is to library service what intelligence is to the military.”

5.3 NEED AND PURPOSE OF REFERENCE SERVICE

The reference service is ‘the supreme and ultimate function of the library’. This is in fact the hub of all library activities. The other activities such as book selection, acquisition, accessioning, classification, cataloging are only means to this end. These activities make reference service possible and more effective.

In the earliest period of the history of libraries there was a spirit of collection and preservation. Libraries were used by a few scholars who hardly felt the need for reference service. The research work was done by a few men of genius who knew most of the authors and their work in their respective field.

Dr. S.R. Ranganathan’s fifth law of library science states “A library is a growing organism”. The library will grow in terms of documents, readers and staff of the library. In order to organise knowledge in libraries various practices have been adopted. The documents are properly classified according to their thought content. These are catalogued and arranged on the shelves in classified order so that th related material in arranged at one place. The library catalogue shows the holdings of the library and location of books in shelves. The plan of the library is to provide guidance for the reader. Now a day’s most of the libraries follow open access system. The above techniques are very useful to the readers for easily location and availability of documents. The latest technique which has been enforced is “reference service” because it is not possible to organise books so mechanically, so perfectly as to dispense with personal service in their use. In spite of all the arrangements there is a need for the human agency to help the reader.

Dr. S.R. Ranganathan has stated three important reasons for providing reference service in a library.

1. *Artificiality of the books*: The appreciation of the value and usefulness of the books has to be induced among the readers of the library/information centre.
2. *Artificiality of the Catalogue*: The fresh man finds it difficult to consult the catalogue, even if the catalogue is available. Even though he knows its intricacies the new entrant wants some explanation for using the catalogue and shelf guides.
3. *Psychological Needs*: The prompt and accurate service in the libraries will enable the right reader to get the right book at the right time. It will have a psychological effect on the minds of the readers who will appreciate the library servies and consider the library as a place which is worth –visiting.

5.4 FUNCTIONS OF REFERENCE SERVICE.

The American Library Association has stated the following functions of reference service.

1. The supervision function
2. The Information function
3. The Guidance function.

4. The Instruction function.
5. The Bibliographic function
6. The appraisal functions”.

These are the basic functions which have to be performed by the reference staff.

1. The Supervision Function

This function consists of (i) proper organization of facilities; (ii) Selection of reference material; (iii) direction of personnel and (iv) study of the library clientele. The first function of the reference staff is to organise the reference section properly. The organization of the reference section very much depends upon the scope and size of the library. A small public or a school library can be housed in a single room having the entire collection. In a college or medium size public library a separate room is allotted for reference e service along with the reference collection. But in a university and large public libraries more than one stack room can have reference allocation with a reading hall. The collection of the reference materials should be arranged in separate sequences. There should be an information desk where enquiries are received and routed to proper section. The reference section must have telephone and reproduction equipment. Apart from this, the reference staff should be arranged in separate sequences. There should be an information desk where enquiries are received and routed to proper section. The reference section must have telephone and reproduction equipment. Apart from this, the reference staff should also arrange for the material on inter-library loan from other libraries if it is not available in their own library. The reference staff maintains a separate catalogue containing only reference collection. They also maintain separate files containing records of enquiries, pamphlets, press clippings etc. In large libraries, there is a chief reference librarian with reference assistants who are subject specialists in various subjects.

2. The Information Function

The reference librarian should be prepared to answer all types of questions and also able to produce the source that would answer the questions. The reference librarian has to classify questions in various ways. Suppose there is a background question, any general encyclopaedia will be helpful. For the biographies of various persons the biographical dictionaries can be consulted. For trend questions of information on current topics the year book can give the answer and regarding places the geographical dictionaries will be of great help. If there is a question on the meaning of a word, the dictionary in the respective language can be consulted. For knowledge about the books, the bibliographies and the catalogues are very useful sources. The reference librarian should satisfy the readers' requirement as much as possible.

3. The Guidance Function

Some readers may seek guidance for their career or profession. The reference librarian should able to provide guidance service to the readers and also recommend good books in various fields. In academic libraries he should be able to give guidance to the students regarding higher education. The reference librarian can be a guide to the readers in the choice of books and other reading material.

4. The Instruction Function

The reference librarian is the right person to provide orientation programme to the new entrant of a library. He should instruct the readers about the working conditions of the library, the use of catalogue, the reference works and the location of material etc.

5. The Bibliographic Function

Bibliographic is the systematic listing of records of knowledge in all forms, covering published and unpublished material. The object of a bibliography is to collate and list information about individual books and related material in a logical or useful order. The reference librarian prepares a bibliography on the basis of readers' interest, so that the readers are able to know the books and other reading material in a particular subject. Similarly indexes and abstracts listing the articles of periodicals may also be prepared by reference librarian for the purpose of providing reference service.

6. Appraisal Function

The success of the reference service very much depends upon the two important factors such as (i) possession of right material (ii) knowledge of how to get the most out of it. Reference books are chiefly consulted for any kind of specific information. The efficient staff only knows how to get information from the reference books. The reference staff must be familiar with the all kinds of reference books and their use.

A.K. Mukherjee states that the reference service consists of the following categories of work.

- Attending to enquiries received from readers either in person, or must over the phone or through correspondence.
- Helping readers at all levels in the use of library tools, viz., catalogues and other reference tools like bibliographies, and generally guiding them as to the reading materials available in the library.
- Providing general information
- Preparing 'reading lists' and ad-hoc bibliographies on request from readers.
- Helping in research by maintaining special abstracting and indexing services, i.e. documentation work.
- Providing facilities for copying of reading list, periodical articles, documents, etc., by duplicating or documentary reproduction methods, viz., micro-film, micro-card, photo-copying, xerography, etc.,
- Making arrangement for inter-library loan and if necessary, inter-state or international borrowing.
- Preserving university ephemera as research and reference material.
- Providing translation service
- Keeping in touch with and co-operating with bibliographical centres and union catalogues.
- Collecting information regarding, library resources of th region, nation and other countries.
- Providing reader with copies of micro-film or photo-copy of documents in case he wants to own it.
- Locating information required by research workers, scientists and technologies and

- Retrieving research information.”

5.5 READY REFERENCE SERVICE (RRS)

“Ready reference service is reference service finished in a very short time – in a moment if possible.” In this kind of reference service, the information is provided to the enquirer almost immediately. The time is the very essence in ready reference service. “Most ready reference questions are solved in a few minutes, while some take a longer time but seldom more than half-an-hour”. It involves lesser effort on the part of reference staff. “Long range reference query becomes a ready reference one when it is repeated a second time since the answer is now readily available.

"Ready Reference Service", is a reference service finished in a very short time-in a moment, if possible. In other words, time is of the very essence of ready reference service. It is generally termed also as Fact-Finding Service and Short Range Reference Service.

Some of the examples which come under the purview of ready reference service are such as:

1. What is the height of Mount Everest?
2. What does IFLA stand for?
3. What is meant by symbiosis?
4. What is the population of Poona?
5. What is the address of American Chemical Society?

The nature of the above questions are such that the answers to these can be provided readily within a short span of time, either with a prior knowledge and/or experience of the reference staff or by consulting the ready reference sources such as dictionaries, encyclopaedias, directories, year books, handbooks, almanac, biographical sources, geographical sources, bibliographies etc. However, these reference sources should be supplemented by the files and records maintained by the reference section. Above all, the success of ready reference service largely depends upon the ability of the reference staff.

Thus as Dr. S. R. Ranganathan says, ready reference service is more or less fact finding service, which normally consumes not more than, say, five minutes. Hence, the concept of ready reference service is based on the duration of time taken. Reference books should be supplemented by files maintained by the reference section and other sources of information. Reference section should maintain a press clippings file, a file on cards containing information collected from various sources, etc., However, reference books will form the main sources of information.

Nature of Ready Reference Service

The nature of ready reference service differs from library to library. The members of the special library, being specialists and researchers are not expected to search for the material. The librarian is supposed to do this work and also supply information to them. In an academic library, one of the duties of reference books rather than provide information. In public library, there are diverse types of readers. The reference service depends upon the category of library user and kind of information required. The reference librarian should be able to guide them about the right type of sources.

Methods of Ready Reference Service

The methods adopted in the provision of ready reference service involves three processes, namely, "preparation, service and assimilation."

1. *Preparation*: Preparation is a process, which takes places behind the screen. A reference librarian has to begin his preparation even before the arrival of the users on the scene. Right kind of preparation can go a long way in making reference services a successful operation.

The reference librarian must have a good reference collection to enable him to answer to various types of questions. In order to keep reference collection up-to date, he must regularly examine the new reference books and new editions of reference books. He should familiarize himself with reference collection. According to Isadore Mudge, "The ignorant assistant can render comparatively useless the finest collection of reference books, while the skilled assistant, who knows how to get from each book all the varied kind of information, that is planned to give can show astonishing result even when limited to only a few basic books.

The reference librarian must also maintain a file fugitive material such as newspaper cuttings, folders, brochures, pamphlets etc. They have to be located collected, mounted whenever necessary. These cannot be kept in general collections on ordinary shelves. These are stored in open-end boxes, vertical files or in cabinets with steel or wooden drawers. These can be arranged in alphabetical order or classified order or chronological order and should be either classified or given proper subject headings. There is no hard and fast rule for the order or arrangement to be followed, but these are not catalogued. Such material should be checked periodically and obsolete material should be weeded out.

2. *Service* : The following three kinds of service can be recognised.

i) TRAINING THE ENQUIRER IN FACT FINDING

One of the services to be performed by a reference section is to train the Enquiries in fact finding. This kind of training should be given special consideration in providing orientation to new users. There is greater emphasis on this in academic libraries. The users should be told about three stages in fact finding, namely, precise enunciating of the requirements, deciding search strategy (laying down line of action, as to which reference books is most likely to contain the required information) and final location of the information. The training should be given in a form, readily acceptable to the users.

ii) SETTING THE ENQUIRER ON THE RIGHT TRACK TO HELP HIMSELF

The readers sometimes requires assistance to the extent that they can be set along a right track. The reference librarian will direct the reader to the sources of information and the reader should become capable of using the reference tools.

iii) FURNISHING THE EXACT INFORMATION

In case, a person sends his query through post or phone, then he would have to be furnished with exact information. Here the question of putting the person along right

tract would not arise. If the person is an important one, then it is just possible he would have to be provided information readily. In a special library, very often exact information would have to be provided because the user might be a busy person. A special library is different in this respect.

3. *Assimilation*: In reference service, the basic qualification is probably experience, through which a librarian acquires the flair that direct him along the paths most likely to lead to the information he wants. He should also share with his colleagues the day today reference questions. There should be meeting of reference staff in which the reference problems should be discussed. The staff member should be encouraged to participate in seminars and conferences. They should have contact with other documentation and information centres. The reference librarian should have knowledge of bibliographical sources of information, union catalogue and other sources of information. He himself should be a voracious reader, lower of knowledge and books. He should be allowed to pursue higher studies and research.

The reference librarian should keep a record of the reference enquiries attended by him. This will be useful for reference purpose at some later date. Moreover, it will provide certain statistics about the number and nature of enquiries attended. This record may be on slips or cards of standard size and may be filed in reference cabinet in two sequences, classified and alphabetical.

5.6 LONG RANGE REFERENCE SERVICE (LRRS)

“Long range reference service will not totally absent in any type of library. However, it is a special feature of a research library such as that of a learned body, University, and business enterprise. Long range reference service and ready reference service differ in the time involved, the materials used and the nature of the information sought.”

Long range reference service cannot be rendered immediately. It is difficult to say how much time is required for search before it befits a long range reference service. However, according to Dr.S.R.Ranganathan, “few long-range reference questions take less than half-an-hour, while some take a whole day and even weeks”. This is a useful distinction.

METHODS OF LONG RANGE REFERENCE SERVICE

According to Dr. S.R. Ranganathan, how of long range reference service involves three processes, i.e. “preparation, service and assimilation.” These three processes are but phases of one continuous experience.

- Acquiring Knowledge of the Subject:
- Scanning of Sources of Information:
- Gathering of Information:
- Recording of Information:

There are three stages in LRRS

- i) Enunciation of the reference question,
- ii) Search for documents; and
- iii) Supply of documents.

To summarise, what we have discussed in this lesson may be put in the form of a table

which is as follows:

5.7 DIFFERENCE BETWEEN READY REFERENCE AND LONG RANGE REFERENCE SERVICE

Factor	Ready Reference Service	Long Range Reference Service
1. Time	Between few minutes to half an hour	Less than half an hour to a day or even weeks.
2. Source of Information	2. Secondary sources such as encyclopaedias, dictionaries, year books, directories, handbook, etc	Starting with tertiary, secondary upto primary, human or institution a sources
3. Nature of Information	Chiefly related to facts and very specific and pinpointed.	Exhaustive, specialised current or retrospective information to be collected from large number of sources, requiring a systematic search

Reference service is now considered the highest form of librarianship. The reference librarian is an intermediary meant to establish right contact between the right reader and the right document in a right personal way. Dr. S.R. Ranganathan states that “the happiest moment in the life of a librarian is the moment of his doing reference service.” In fact reference service is the heart of library service.

5.8 SELF ASSESSMENT QUESTIONS

1. Define Reference Service. Discuss the kinds of reference service and illustrate the same with examples
2. Distinguish short range reference service from that of long range reference service

3 Write short notes on :

1. Short Range/Ready Reference Service
2. Long Range Reference Services

5.9 SUGGESTED READINGS

1. Katz William A: Introduction to reference work Vol.I New York, McGraw Hill, 1969.
2. Krishna Kumar: Reference service, 4th ed. New Delhi, Vices Publishing House, 1984.
3. Sharma and Grover: Reference service and sources of information, New Delhi: ESS ESS Publication, 1987.

LESSON - 6

DICTIONARIES AND ENCYCLOPEDIAS

AIMS AND OBJECTIVES

This lesson explains about Dictionaries and Encyclopedias as reference sources. After reading this Lesson you would be in a position to understand the features, types, purpose and scope, reference value and limitations of Dictionaries and Encyclopedias.

STRUCTURE

- 6.1 Dictionaries
- 6.2 Encyclopedias
- 6.3 Self Assessment Questions
- 6.4 Suggested Readings

6.1 DICTIONARIES

Language is the systematized set of words, which helps human society to interact and communicate. The communication among the individuals depends much in the understanding of the meaning of the words. To facilitate this understanding and reduce communication gap, dictionary plays a vital role. Further the number of vocabulary developed in a language speaks about the advancement of the language. The listing of the words extensively providing its meaning, pronunciation etc. is called as dictionary. The word ‘dictionary’ comes from the Latino word ‘Dictio’ meaning ‘word’. So, primarily dictionaries deal with words.

Definition: It is a book, which gives information of words, arranged alphabetically, and as such the word dictionary has come to mean any alphabetical arrangement of words, topics, subject headings.

Oxford English Dictionary defines it as “a book dealing with the words of a language, so as to set forth their orthography, pronunciation, significance and use; their synonyms, derivation and history or at least some of these; the words are arranged in some stated order now usually, alphabetical; a word-book, vocabulary.”

Characteristics: Basic characteristics of dictionaries include the following.

- The dictionary is a collection of words in alphabetical order.
- Each word is treated as to its meaning, pronunciation, derivation, usage & syllabication, synonyms, antonyms, definition & illustrative material, quotations, maps etc.
- Acc. to Whitaker- ‘the dividing line between dictionaries and encyclopedia is particularly precarious’. The basic difference is – Dictionary provides words; Enc. Provides information.
-

History and Development: Early dictionaries compiled to give meaning of a word in one language in the words of another. Several clay tablets excavated that belong to Sumerian civilization include a number of dictionaries - giving Sumerian words with their equivalent Assyrian meaning.

1st Century A.D – Apollonius, the sophist and a grammarian compiled ‘Harmonic glossary’ i.e. collection of terms limited to a special area of knowledge. In ancient china, a dictionary of 40000 hieroglyphical characters was in use. In India, ancient dictionaries of Sanskrit language were very popular- E.g. Amarakosa: Namalinganusasana by Amara Singha, a scholar of Vikramaditya empire 5th century AD. Prior to this Veda Nighantu – words explained with usages.’ Was developed in 4th century A.D.

In 225 AD, first use of the word ‘dictionary’ was made in English language by Joanne De Garland. 1604 AD Robert Cawdrey developed a new dictionary conveying only those words introduced to English from other languages. 1721 has seen the development of Universal Etymology dictionary.

The method of editing and compilation of the English dictionaries was considerably modified by 19th century with the publication of Webster’s “American dictionary of the English Language” in 1828. Webster’s “New International Dictionary of English Language” succeeded this.

The first Oxford English Dictionary applied the historical method to words, giving origin, meaning, historical development of English words, general use etc. Now there are a number of dictionary houses like Random, Funk and Wagnall etc. besides Webster and Oxford.

Alternate names for Dictionaries:

Glossary: It is a list of dialect / explanation of technical terms of a subject.

Lexicon: A dictionary of foreign language, especially of Greek, Hebrew, and Arabic. The word is derived from Greek word Lexicon.

Thesaurus: It means a treasury of words. The word is of Greek Origin.

Concordance: An alphabetical index of principle words in the Bible or works of an author i.e. words used by an author in his works. E.g. Shakespeare

Scope:

The general assumption is that dictionaries are only one category, but they cover almost every interest. They include:

1. General language dictionaries
2. Foreign and Etymological dictionaries
3. Foreign language dictionaries
4. Subject dictionaries
5. Other dictionaries like- slang, abbreviations, dates etc.

Purpose and use:

The general dictionary has a main and secondary mission. In other words the main purpose of dictionary is

- i) To indicate spelling, meaning, pronunciation, syllabication etc.
- ii) To indicate etymology, major place names, major personal names of historical importance, foreign terms and plural, synonyms and antonyms abbreviations and slang terms etc.

Whitaker has listed four broad uses of dictionaries:

- i) A quick reference tool: To verify spelling, meaning etc.
- ii) Language Recorder: OED records the developmental trends of a language by noting down the etymological details.
- iii) Language Standardization: Accepted word usage, spelling
- iv) Vocabulary builder: It helps the user in building and developing proper vocabulary. Accurate use of words in particular context is ensured by the dictionary.

Entry and content:

The structure and context of the entry word of a dictionary is dependent on the size and purpose of the dictionary E.g. General adult dictionary and collegiate dictionary. An entry in a general dictionary contains the following:

Entry word in local script

Transliterated form of Roman or Devanagari script

Origin of the word

Parts of Speech tag

Sub-Class tag - gender of a known, transitivity of verb string or glosses (meaning)

Idioms with glosses

Citations from literary treat (usage)

Etymology.

Notation and Format: Every dictionary should have an organized system of notation. There should be a proper presentation of entries and other related matters. The important 3 parts are

1. The first part contains preface, introduction, redress globule
2. The second part dictionary proper
3. The third part contains appendices, supplementary material like measures, tables, maps etc.

Types of Dictionaries:

For the purpose of organization the dictionaries are divided into 4 broad categories.

1. General language dictionaries
2. Special Dictionaries
3. Subject Dictionaries
4. Translating dictionaries

Each group is further divided into several kinds.

1. General Language Dictionaries: They deal with common words of languages. They are more popular and very frequently used dictionaries. They are classified into 5 groups -

- a) According to purposes - Prescriptive- authoritative and standard

- b) According to size - Descriptive – more record of words
Unabridged
Semi abridged or Desk
Abridged or Pocket
- c) According to volumes - Single volume
Multi volume
- d) According to Language - Mono lingual
Bi lingual
Multi lingual or Polyglot
- e) According to User's age - Adult dictionaries
Junior dictionaries
Children Dictionaries

Examples:

1. *Prescriptive*: Samuel Johnson Dictionary of English Language
 2. *Descriptive*: Oxford English Dictionary, Webster's New International Dictionary of English Language
 3. *Unabridged*:
 1. Oxford English Dictionary, 2nd Ed, 20vols. 1982.
 2. Hindi Sabdasagar Ed. by Shyam Sundar Desai. New Rev. ed. Varanasi, Nagi prachararini sabha, 1965-75 11 vol.
 4. *Semi abridged*: Concise Oxford Dictionary of Current English, 5th Rev. Ed. 1982.
(For adults) Webster's Concise Family Dictionary, 1975
Oxford Advanced Learners Dictionary 4th ed., 1989
 5. *Abridged /Pocket*: The Oxford Pocket Dictionary, 7th ed. 1984.
Webster's Ninth New collegiate Dictionary 8th ed., 1983.
- School Dictionaries: Oxford Illustrated Dictionary, 1975.
Oxford School Dictionary, 1981.
Webster's School Dictionary, 1980.
6. *Single volume*: Sri Shabdarnakaramu-a dictionary of Telugu Language
Compiled by B. Sitaramacharyulu, New Delhi, Asian Educational Services, 1988.
 7. *Multi-volume*: Sri Surya Rayandra Nighantuvu, 8 volumes. Hyderabad, Andhra Saraswatha Parishad, 1979.

2. *Special*: Most of the information given in the special dictionaries might have been covered in general dictionaries hence these are supplementary, but are more comprehensive on the chosen aspect. The table below shows the variant forms of special dictionaries.

Special linguistic aspects of words	Special type of class of words	Literary aspects catering to spl. Groups of persons
Dictionary of pronunciation punctuation spelling synonym & antonyms Usage Etymological	Dictionaries of – Slang words Objective words Dialect New Words Names, Surnames Cross words, Puzzles Abbreviations Acronyms Signs & Symbols	Dictionary of Folk tales Nursery Rhymes Quotations Proverbs Foreign terms Phrases Idioms Rhyming words

Examples:

- i) Oxford Dictionary of English Proverbs compiled by Frank P Wilson 3 ed Oxford Univ. Press, 1970
- ii) Concise Oxford Dictionary of Quotations, Oxford Univ. Press, 1982.
- iii) A dictionary of foreign words and Phrases in Current English by Alan Joseph Bliss. New York, Dalton, 1966.

3. Subject Dictionaries: The rapid development in all the field of knowledge has necessitated compilation of subject dictionaries, devoted to specific subject fields, occupations and professions. These are called as *glossaries*. These dictionaries

- Deals with terms of a particular subject field.
- Use of specialized terms in each field- (which general dictionaries can't accommodate)
- Almost every subject has one more dictionaries after caller glossary.

Characteristics:

- 1) They contain highly specialized technical terms.
- 2) The terms are adopted / coined by subject specialists.
- 3) They provide descriptive information and accurate definitions.
- 4) They include information about institutions.
- 5) Include brief biography of specialists.
- 6) Compiled by subject specialists.
- 7) Revised frequently to add new technology.
- 8) Available as unabridged/ abridged; single/ multi volume; Mono/ bi/Multilingual.

There are two series of subject dictionaries that are popular and most used:

1. Elsevier's dictionaries – available in many scientific & technical subjects. E.g. Aeronautics, automobile etc.

Entry: Each entry provides information on important features, definitions, illustrations, scope (international/national) and up-to dateness.

Examples:

1. McGraw Hill Dictionary of Scientific and Technical terms. Ed. By D.N. Lapedes, N.Y., McGraw Hill. It contains more than 1, 00,000 entries, around 3000 illustrations one of the world's most comprehensive single volume work. It is most accurate and highly reliable.
2. A.L.A glossary of Library and Information Science, 2nd Ed. Chicago, ALA 1985.

5. **Translating Dictionaries:** These are not confined to one language like monolingual general dictionaries. They are bi-lingual or multi-lingual in nature, mainly used by language learners and translators. The translating dictionary contains limited vocabulary. They do not define words but give accurate equivalent words in one or more foreign languages. Some translating dictionaries are comprehensive and include words of colloquialism, idioms, borrowed and dialect words E.g. All bilingual and multi-lingual dictionaries.

Examples:

Mono lingual: Oxford English Dictionary, Webster's Dictionary of English Language.

Bilingual:

1. C.P. Brown: Dictionary of English-Telugu and Telugu –English. Madras, Christian Society, 1924;
2. Sankaranarayana. English Telugu Dictionary. Madras, V.R.Sastrulu, 1951, 1568P

- Polyglot:*
1. Bharatiya Bahubasha Kosh or Dictionary of 16 Indian Languages including English. Bombay, Triveni, 1961
 2. Raghuvira. Exhaustive English- Hindi –Sanskrit Dictionary. Holds a million vocabulary entries pertaining to science, Arts, Literature. Nagpur, Int. Academy of Indian Literature, 1954.

Special Dictionaries: Dictionaries, which are compiled to deal with special purpose aspects of a language.

Evaluation of Dictionaries

According to Johnson, 'Dictionaries are like watches. The worst is better than none, and the best can't be expected'. There is no perfect dictionary and there will not be until the language is completely static. Further no single dictionary is sufficient. Reference tools like Reader's Guide, Kennett Kisser's Dictionary Buying Guide, New York, Bowker etc., are helpful. The following criteria have to be followed while evaluating dictionaries.

Purpose: The category in which the dictionary falls and the type of reader for whom it is intended to determine the purpose.

Authority- Publishers like G&C Merriam, Funk & Wagnall, Random House, are reputed publishers of dictionaries besides Oxford and Webster. The reputation of compilers, editor et al can also be assessed based on their qualifications.

Scope: generally the scope will be stated in preface and / or introduction. However size of the vocabulary, basis for word selection etc. are important. E.g.; unabridged 4, 50,000; abridged 1,80,000- 1,50,000 indicates the scope or coverage of words

Treatment: The audience for whom the dictionary is aimed at and whether it is treated to be suitable to that group needs to be ascertained.

Word Arrangement: Generally alphabetical, word by word or letter by letter. There should be consistency of spelling – its variant forms; definition, of words; pronunciation; different methods of how to divide the word (syllabication), grammatical information; usage-prescriptive/ descriptive etc. has to be studied under word arrangement.

Format: Print size, spacing, face type, illustrations, type of paper, binding, appearance etc.

Revision: Whether there is continuous revision policy adopted; the method of adding new words are important to maintain the currency of the work.

Special features: Many dictionaries include several special features like appendices, special lists, quotations, Almanac type information, writing business letters etc. that helps user in many ways.

6.2 ENCYCLOPAEDIAS

Introduction:

The urge of human being to know something about him and the world around is responsible for the growth of human knowledge. Human knowledge covering all aspects of life has been recorded together for use of the present and posterity. Such records are called as 'Encyclopedias'. Since ancient times, the purpose of the general encyclopedia is to capsule and organize the world's accumulated knowledge and to bring together into one work all human knowledge.

Definition: Dictionary tells us that 'Encyclopaedia' derives from Greek word 'Enkyklios'(circle)'Paideia' (Learning) meaning 'general education'. It is meant as 'circle of learning' or 'complete system of learning' i.e. an all round background education. Oxford Dictionary defines it as 'a literary work containing extensive information on all branches of knowledge, usually arranged in alphabetical order'.

The A.L.A. Glossary of Library & Information Science states it as 'A book or set of books containing informational articles on subjects in every field of knowledge, usually arranged in alphabetical order, or a similar work limited to a special field of subject'. H.G.Wells defined it as 'A general summary of thought and knowledge which will serve as the basis for common understanding between specialists and for the ideology of education and so become a guiding center for the intellectual activation of mankind'.

Historical Development:

The encyclopedia making owes its origin to the West. 'Historia Naturalis' of Pleny the Elder is regarded as the first encyclopedia, though attempts were made by Aristotle to systematize the knowledge in an encyclopedia form much earlier to him.

Of the several works of encyclopedia nature belonging to the middle ages, some noteworthy works are-

Isodore, Bishop of Suville's work 'The etymologize' which is sometimes called the 'encyclopedia of middle age' and

Caxton's 'Translation of image due Monde (1460 AD).

Ringeberg's 'Night studies' was the first work to use the term encyclopaedia in 1541.

China brought out a 15-volume encyclopedia during the Middle Ages.

In 1630, the first modern encyclopedia given the title 'Encyclopedia Septum Tomis Distincta' was published in Switzerland by Johann Heinrich Alsted. This is the first with the title 'Encyclopaedia' and gave much attention to the arrangement.

During 17th century, French contributed 'Grand Dictionnaire' of Lois Moreri and 'Dictionaries Historique et critique' of P. Bayle.

18th century is considered as classic age for encyclopaedia making.

1704 John Harris brought out Lexicon Technicum or an Universal English Dictionary of Arts and Sciences.

1728 Ephrain Chambers Cyclopaedia (2 vol.s) became a model for all encyclopedias that followed.

1751-72 Denis Dideret's Encyclopaedia due XVIII Siecle is worth to mention

1768-71 witnessed the emergence of the great 'Encyclopedia Britannica' (Arts & Science) at Edinburgh in 3 volumes, a new evolution in encyclopaedia. Next edition, in 10 volumes, added history & biography. Other larger editions followed including scholarly 9th and 11 editions. Since 1943 'Encyclopaedia Britannica Inc.' publishers it, located in Chicago.

U.S.A.

1829 is a remarkable year as Encyclopaedia Americana was published.

1833-48 The penny cyclopedia was published

1850-68 Chamber's Encyclopedia came into light

1884 The New International Encyclopaedia (Journalistic Style) was appeared

20th century has produced a number of encyclopedias of all types, approaches, coverage, readership, scope etc.

India:

During British rule, there was no encouragement and there exists multilingual problem in the country.

1886-91- Nagendranath Basu compiled Bangala Viswakosha in 22 vol.s

16-32 – Nagendranath Babu published Hindi Viswakosha in 25 Vol.s as an editor.

Later, K.S.Karanth, Manivettam (Keala) R.R.Sethna (Gujarat) S.V.Ketakara (Maharashtra) Vinod Kanungo (Orissa), Laxmana Rao (A.P.) K.C.Mahant (Assam brought out encyclopaedias.

Types of encyclopaedias: The encyclopedias are divided into two main categories, General and special or subject.

General

- Contains a collection of articles which give essential information about the branches of knowledge
- Arranged alphabetical or classified order of subjects.
- Intended for general readers
- Occasional revision
- Huge and highly expensive

Special

- Collection of articles limited in a particular subject area
- Arranged alphabetical
- Intended for specialists of a subject
- Published frequently due to literary explosion
- It is comparatively less due to limited scope and coverage.

Encyclopedias are further classified into four groups

According to size and format
According to user age

According to area of coverage

According to language

One or two volumes or multivolume

Adult

Junior

Children

National –French-Enc. Universalis

Regional – Hindi Viswakosha

Language of a particular speaking people, e.g. Telugu Vignana SarVaswamu.

Scope and Purpose of Encyclopedias:

Scope: Generally it is the users and their age determine the scope of an encyclopaedia. In some cases the coverage and language also decide the boundary line of an encyclopaedia.

Purpose: Denis Diderot stated that “the aim of an encyclopaedia is to connect all the knowledge, scattered over the face of the earth to present its general outlines and structure to the men with whom we live and to transmit this to those who will come after us, that our children, by becoming more educated, may at the same time become more virtuous and happier.”

Katz opined that “There are two primary purposes for the general encyclopedias –

(a) to provide a source of information to fact questions of a simple nature as to who, what, when, where and how.

(b) to provide some background information to fact for both scholars and lay persons”

Its main purpose is to summarize human knowledge and give basic background information.

Thus the basic purpose of encyclopaedias can be summarized as

- It is a work of reference
- Used only indirectly for understanding
- A continuing link between academic and lay world
- An instrument of popular education.

Functions of encyclopedias: the purpose of encyclopedias indicates the functions of the same. In other words the functions of encyclopedias reflect its aim and purpose. The functions of encyclopaedias can be listed as follows:

- Encyclopaedias constitute the backbone of reference collection.
- Provides easy access to reliable information of all available knowledge of the time.
- Works as a compendium of information on all branches of human knowledge.
- Presenting in an organized way an over view of every topic.

Characteristics of Encyclopaedias: The characteristics of encyclopaedias are many but may be grouped as five for the purpose of understanding.

1. *Authorship:* Historically individuals were the authors (E.g. Socrates), but from 17th century specialist in each field became contributors.
2. *Arrangement:* Alphabetical or classified with alphabetical index.
3. *Subject Coverage:* In the beginning the encyclopaedias were said to be the total knowledge embodiments. However, information explosion in Science and Technology eroded the claim that the encyclopaedias depict all knowledge. Some part of the coverage became obsolete.
4. *Construction:* The construction of articles may be general and special; giving long articles on general subjects, smaller topics being included in them.
5. *Requirements:* The work of this magnitude calls for the
 - Most careful planning and editing
 - The most experienced writers
 - the most reputable publishers
 - To keep up to date through supplements
 - Continuous revision programmes.
 - Limitations of Encyclopaedias

Limitations of Encyclopaedias:

1. They go out dated very soon and problem to keep them current because of rapid growth of knowledge
2. The pressure of new subjects may necessitate the dropout of many articles of real worth in successive editions.
3. It serves only as a background information sources in subjects and topics.
4. Some well knew encyclopedias suffer bias. E.g. Encyclopaedia Americana
5. The appended bibliographies may not be exhaustive.

Uses of encyclopaedias:

The major uses of encyclopaedias are:

1. For background information and enquiries on any topic i.e. general and retrospective information.
2. To know about culture and development of nations (other than English also).
3. Subject encyclopaedias form important reference tools.
4. The bibliographies at the end of the articles provide an insight into the literature on the subject.

Examples

General

Encyclopaedia Britannica: Encyclopaedia Britannica, Inc., headquartered in Chicago, Illinois, is a leading provider of learning and knowledge products. We're proud to be one of the world's most trusted sources of information on every topic imaginable - from the origins of the universe to current events and everything in between.

Encyclopaedia Americana:

Subject Encyclopaedias

McGraw-Hill Encyclopaedia of Science and Technology

Encyclopaedia of Library and Information Science

6.3 SELF ASSESSMENT QUESTIONS

1. Examine the characteristics and types of Dictionaries with examples
2. What are the criteria for the evaluation of Dictionaries
3. Describe the types and value of Encyclopedias
4. Write Short notes on:
 - a. Special Dictionaries
 - b. Subject Encyclopedias

6.4 SUGGESTED READINGS

1. Grogan, D. Science and Technology: An Introduction to the Literature.
2. Higgins, G. Printed Reference Material.
3. Katz, W. Introduction to Reference Work. Vol. I.
4. Sharma & Grover. Reference Service and Sources of Information New Delhi: Ess Ess Publications.
5. Encyclopaedia of Library & Information Science. Vol. 26.

LESSON 7

READY REFERENCE SOURCES: YEARBOOKS, ALMANACS, STATISTICAL SOURCES AND DIRECTORIES

AIMS AND OBJECTIVES

The lesson explains about the year books, almanacs, encyclopedia supplements, statistical sources and directories.

Structure

- 7.1 Introduction
- 7.2 Year Books and Almanacs
- 7.3 Statistical Sources
- 7.4 Directories
- 7.5 Self Assessment Questions
- 7.6 Suggested Readings

7.1 INTRODUCTION

In this Lesson you are presented with a detailed account of Ready Reference Sources such as yearbooks, almanacs, encyclopedia supplements, statistical sources and directories. Under each category of sources a brief note on the individual sources.

7.2 YEARBOOKS AND ALMANACS

Yearbooks and Almanacs are ready reference sources of information. These sources, generally published annually, provide current and miscellaneous information complementing and supplementing encyclopedias. They are referred to answer the fact or ready reference queries. They are usually serial publications useful in getting brief, pin pointed answers. “Almanacs and Yearbooks are compendia of useful data and statistics—almanacs typically cover a broad spectrum of topics but do not include in-depth information. The World almanac and Book of Facts is an example of such a title. Almanacs are generally updated annually, so are excellent resources for finding current facts and information. Some almanacs are focused on a given field, such as the Weather Almanac or the CQ (Congressional Quarterly) Almanac.” (Five Colleges of Ohio Research Tutorial: Reference Sources).

Definitions: *Yearbook:*

According to Katz “A yearbook is an annual compendium of data and statistics of a given year. Its fundamental purpose is to record the years activities by country, subject, or specialized area.” (Compendium: a brief summary of a large work or of a field of knowledge).

A.L.A. Glossary defines yearbook as “an annual compendium of facts and statistics of the preceding year, frequently limited to a special subject.”

According to Harrod’s Glossary, yearbook is “a volume often called as annual, containing current information of a variable in brief descriptive and/or statistical form.”

Almanac:

According to Katz, “An almanac is a compendium of useful data and statistics relating to countries, personalities, events, subjects and the like.”

A.L.A. Glossary defined it as “(1) An annual publication containing calendar, frequently accompanied by astronomical data and other information. (2) An annual yearbook of statistics and other information sometimes on a particular field.” The second definition is more appropriate to the present day almanacs.

An almanac will inevitably cover material of the previous years too. The essential difference between the two is that almanac will also include considerable retrospective material, which may not be in the yearbook. The difference between yearbook and almanac is very narrow. It can be summarized as follows:

1. Both are related to ready reference sources of information in terms of their scope and use.
2. Traditionally, almanacs were considered general in scope while yearbooks confined to a subject or given area. But this distinction broke down. For e.g., a yearbook supplement to an encyclopedia is general in scope.
3. The only difference is that the yearbook provides information of the previous year only, while almanac provides current as well as retrospective information.

Scope: The yearbook and almanacs usually contain the following kinds of information:

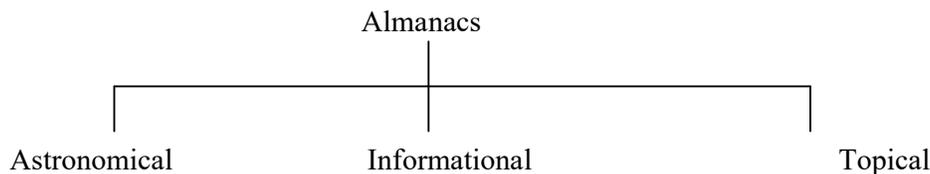
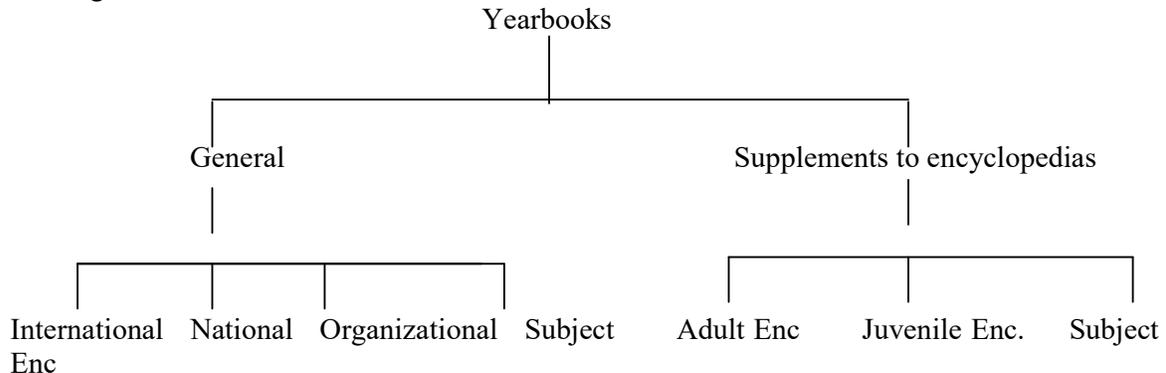
- Chronological list of the important events of the year;
 - Summaries of the political, social and cultural events of the year;
 - Major developments and trends in various fields including science and technology during the year;
 - Short biographies of notable living persons and also obituaries of leading personalities;
 - Information about organizations;
 - Statistical information about sports events, awards, population etc.;
- E.g. Who won the Nobel Prize in Physics in 2004?
Who won Wimbledon women’s singles final in 2004?
Which picture got Oscar award in 2004?

Purpose:

- Recency: provides recent information on a subject or personality. The sources update the standard texts as they provide current information;
- Brief facts: Provides information for a single figure or a fact. If limited amount of back ground information an yearbook is of help, otherwise almanac;
- Trends: By implication they indicate the trends in the development or regression of civilization;

- Informal Index: Most of the year books and almanacs cite sources of original information. E.g. Fortune, Business Weekly etc.
- Directory and Biographical information: Usually they include information about persons and organizations (directory type). A yearbook may include principal leaders in a field and their addresses; short biographical sketches; and associations and learned societies. E.g. Sam Pitroda appointment as chairman of National Knowledge Council. World Almanac provides a lot of information of this kind.

Types: the yearbooks are categorized as two types and further divided according to their coverage.



EXAMPLES:

GENERAL YEARBOOKS:

- The basic aim of the yearbook is to record the year's activities, by country, subject, organization or specialized field.
- It covers the important events of the preceding year.
- The date – only imprint – year completes 3 months before publication
- The arrangement, coverage and index should enable the user to make search easy and useful.

A. International:

The Statesman Yearbook 1864 – (annual) London, Macmillan. This is a statistical and historical annual of the States of the world. It provides comparative statistical tables. Main portion of the work is of four parts. Pt I – International organizations; Pt II – Commonwealth Pt III – U.S.A; Pt IV – Other countries followed by detailed index.

Entry: Information under each country include constitution of government, area and population, religion, education, health, justice, finance, defense, planning, agriculture, forestry, industry, oil, roads, aviation, post, banking, measurements, diplomatic representatives, books of reference etc. it will not include any astronomical data. At the end

of each item list of references, comparative statistical tables are given. Index is arranged alphabetically by place name and subject. It excludes names of persons.

B. National:

India, A reference annual: 1953- . (Annual) New Delhi, Research, Reference and training Division, Research and Reference Section, Ministry of Information and Broadcasting, 2003. The contents include Land and the People, National Symbols, The Polity, Defence, Education, Cultural Activities, Scientific and Technological Developments, Environment, Health and Family Welfare, Welfare, Mass Communication, Basic Economic Data, Finance, Planning, Agriculture, Water Resources, Rural Development, Food and Civil Supplies, Energy, Industry, Commerce, Transport, Communications, Labour, Housing, Justice and Law, Youth Affairs and Sports, India and the World, States and Union Territories. There are a number of appendices covering personnel of government, universities in India etc. Being a government publication, it's more authoritative work. Now available online.

Times of India, Directory and Yearbook including WHO'S WHO: 1914- (Annual) Bombay, Times of India Press. This publication has a long history. First publication was under the title 'Indian Yearbook'. Later - Indian, Pakistan Yearbook. From 1954 onwards published under the present title. This is a trade directory, yearbook and biographical dictionary combined in one. Its contents are confined to India. Provides lists of commercial firms arranged item wise, lists of research organizations, Names of government of India and State administrative personnel, foreign representatives in India and abroad, interviews with award winners of the year etc. It provides information which may not be available else where and contains more descriptive and statistical information.

ALMANACS:

Whitaker's Almanack. 1869- (Annual) Manufactured by Gale Group and Published by A&C Black. 2004.

As the most comprehensive annual reference book on Britain, Whitaker's offers coverage of a wide range of topics, including important dates and events of the previous year; information about parliament and government; obituaries of notable individuals; and more. It covers the astronomical and other phenomena, information on government, finances, population, commerce and general statistics. The almanac calendar is only a small part of it, but vast amount of information provided is accurate and updated to know of British life. Index with thousands of entries is of much use. Events of the year listed chronologically. Its confined to British Commonwealth and Great Britain. Provides information especially on British Institutes, Royal family, knightage etc.

7.3 STATISTICAL SOURCES

Introduction

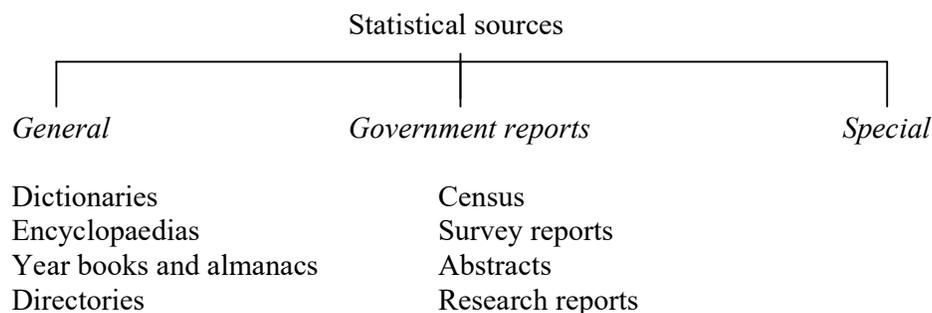
Statistics are concerned with the collection, classification, analysis and interpretation of numerical facts or data. There are numerous types of official and un-official organizations. More and more data collected and tabulated by these organizations that leads to the publication of innumerable statistical sources. The statistics are of immense use to scientists, business people and general public as well. Hence as librarians we have learn about the nature and characteristics of these sources.

Statistical sources – Definition:

"The science that looks into the study of generic phenomena, normally complex and framed in a variable universe by means of the employment of reduction models of information and validation analysis of the results in representative terms." Statistical information is the outcome of analysis and interpretation of numerical data. The information can be numeric, alphabetical or symbolic. The statistical process consists in the phases of information collection, analysis, presentation, interpretation of the results, and elaboration of methods. Reference librarian usually receives information of statistical nature, for example, population ratio or literacy ratio etc. Hence it is necessary to collect and maintain statistical information sources in the reference section.

Types of statistical sources:

Statistical sources can be categorized into several types but mainly they are either *inclusive* i.e. a part of other reference sources or *exclusive* i.e. published separately only for statistical information. The types of statistical sources can be summarized diagrammatically as follows.



Examples:

General:

1. Dictionary of statistical terms by Maurice and others. 3rd rev. edition. Edinburgh, Oliver and Boyd, 1971.
It gives clear meanings, detailed definitions and explanations of symbols.
2. The International Encyclopaedia of Statistics. New York, The Free Press, 1978.
Provides good articles by eminent scholars, which include 75 articles on Statistics and 42 on Social Science and Statistics.
3. The Statistical Yearbook. Compiled by UN Statistical Office. New York, United Nations, 1949 - .
It provides statistical information in 150 areas.
4. UNESCO Statistical Yearbook. Paris, UNESCO, 1964 – (Annual)
5. Directory of International Statistics. New York, UN Publications, 1973 - . (Irregular)
6. Oxford Economic Atlas of the World. 4th edition. London, Oxford University Press, 1972.
It is in two parts: Part 1 – A section of world maps under 13 subject heads;
Part 2 –A Statistical supplement arranged alphabetically by country.

Government Reports:

1. Census Reports: Census is the record of systematic enumeration of population, houses, business, trade and other important aspects. Now they provide more information than mere population figures. The census reports provide demographic,

- social, economic, ethnographic and religious statistical data. E.g. Census of India, 2001.
2. Statistical Abstract of the Indian Union. Delhi, Central Statistical Organization, Min. of Planning, 1950 - . (Annual)
 3. Survey Reports: These are the sample data of people or things collected by Q method. Example: National Sample Survey Reports,. New Delhi, Govt. of India, National Sample Organization.

Special

1. Demographic Yearbook. New York, UN Publications, 1949 – (Annual)
It provides international demographic data.
2. Yearbook of Labour Statistics. Geneva, ILO, 1936 – (Annual)

7.4 DIRECTORIES

Introduction: This is the age of organizations, associations, societies and academies. Man's all round development depends much on these organizations with the growth and development of science and technology at a faster rate. Many organizations of social, educational, industrial, scientific and technological know how have been established. Societies growth and man's involvement with these organizations necessitated for the compilation of this organizational information, and directories have been developed to meet this need. Basically a directory is not more than a list of names and addresses of people in a city, town or district; members of a trade or profession; societies and institutions.

Definition: The dictionary meaning of a directory is 'a book containing one or more alphabetical lists of the inhabitants of any locality with their addresses and occupations; also a similar compilation dealing with members of a particular profession, trade or association such as medical directory etc.'

Hence a directory is any work, which enables the searcher to locate, identify or obtain further information about a person or organization. A.L.A. Glossary defines "A list of persons or organizations systematically arranges, usually alphabetical or classed order, giving addresses, affiliations, etc. for individuals; and addresses, officers, functions and activities and similar data for organization."

Librarian's Glossary defines a directory as "a book containing list of names of residents, organization or business houses in a town, a group of towns or a country in alphabetical order and or in order of situation in roads, or of firms in trade classification, arranged in alphabetical order; or professional people, manufacturers or business houses in particular trade profession."

History: The idea of directory can be traced back to 1732 AD, when Brown's Directory on list of principle traders in London was published. Since then several thousands of directories have been published to suit the requirements of specific type of information.

Scope and Purpose: The definition suggests that directories are involved in answering the following questions:

- Address of an individual
- Brief account of products produced and services rendered
- Authority and team involved in specialization

- Agencies concerned with advertisement, sale, and subscription
- An account of the institutions, political groups, business firms and professions.

Thus, directories provide information at two levels – (i) regarding the structure and operational activities of an organization and (ii) about its members and officials.

Uses: These are easier to use than any other reference tool because the scope is normally indicated in the title and information presented in orderly manner. In a reference section the directories can be used for answering questions like

- Address or telephone number of an individual e.g. Any IAS officer
- Full name of individual or organization. E.g. Director of ISRO
- Description of a product of a manufacturer. E.g. Drug info of Reddy's Labs
- Who is the President / Head of an Institution or organization. E.g. Chairman of DHE, A.P.

Less obvious uses are –

- Limited but up to date biographical information of individuals.
- Historical and current data about an organization.
- Commercial use – such as selecting a list of individuals, companies or organizations for mailing in particular area.

Types of directories: The directories can be categorized into two broad groups viz. general and specific.

- The general directories include the information on international, national and local organizations.
- The specific directories cover the information on scientific and learned societies, trade, profession and such other similar groups.

All these directories are generally published by the business houses, telephone departments, government agencies, associations, learned societies, and scientific organizations with necessary advertisements wherever applicable. By referring these directories, current status of a person or institution can be confirmed.

Katz has categorized them as follows:

Local or topographical directories: telephone, city directories, directory of local schools, departmental stores, theatres, clubs etc.

Governmental directories: Includes guides to post offices, army and navy posts and different services offered by central and state governments.

Institutional directories: lists of schools, libraries, hospitals etc.

Investment directories: related to trade and business directories. They give detailed reports on public and private corporations and companies.

Professional directories: lists of professional organizations.

Trade and business directories: lists of manufacturers information about companies, industries and personal services.

Directory type of information are some times found in the other information sources like encyclopedias, yearbooks, almanacs, gazetteers, and government publications though not extensively.

Examples:

1. General directories include international, national and local directories. Two best examples of this category are telephone and city directories.

1. Kelley's Post Office London Directory. Surrey, Kelley's Directories Ltd. In U.K. these are very popular which covers a large part of the country. Since 1976 only London Guide is being published. This helps in locating an individual person or house if the street name is known. The resident of the street is usually identified by the occupation or whether he/she owns a house.
2. U.S. Postal Services: Directory of Post offices (with Zip code). Now National ZIP code Directory. Washington, GAOVT. Printing Office, 1955- (annual).
3. Times of India, Directory and Yearbook including Who's Who.1914 – (annual). Mumbai, Times of India Press (Bennett Coleman). This publication has a long history. First publication was under the title 'Indian Yearbook'. Later Indian, Pakistan Yearbook. From 1954 onwards published under the present title. This is a trade directory, yearbook and biographical dictionary combined in one. Its contents are confined to India. Provides lists of commercial forms arranged item wise, lists of research organizations, names of Govt. of India and State administrative personnel, foreign representatives in India and abroad, interviews with award winners of the year etc. It provides information, which may not be available elsewhere and contains more descriptive and statistical information. Section 1 covers Trade Directory for buyers (Chamber of Commerce and Commercial firms) Section 2. Political.
4. Delhi Telephone Directory, Delhi, Indian Posts and Telegraphs (Irregular).

Special directories include institutional, professional, business, trade. Many of the yearbooks like Europa Yearbook include lists of international organizations. Some directories are exclusively deal with general and special organizations.

1. Commonwealth Universities Yearbook: Directory of the Commonwealth and the Handbook of their associations. London, Association of Commonwealth Universities, 1914- (Annual) 4 volumes.
2. World of Learning. London, Europa Publications, 1947 – (annual). 5th ed. 2004. It enlists societies, research institutions, universities, libraries, museums etc. and provides information about them. International section provides data on UNESCO, ICSU, IAU and other international organizations. Arrangement alphabetical country wise. Within each country, further entries made under categories.
3. For India it lists academies, learned societies, research institutions, libraries, archives, museums and art galleries, universities, institutions with university status, schools of art and music, selected colleges. Information provided includes address, year of foundation, objectives, collections of library, names of director / V-C, Secretary / Registrar and its publications. The amount of information varies depending on the type of institution. It is an outstanding reference tool as it is a comprehensive and update directory.
4. Universities Handbook: New Delhi, AIU, 1992. Covers all universities and deemed universities. Each entry provides name of the university, year of establishment, address, telephone, telex numbers, administrative officers, Deans, academic departments, staff, Library facilities, research facilities, courses and grades, scholarships and fellowships, distance education programmes, annual results, budget, special features, miscellaneous information.

Special or professional directories are being published in almost every branch of knowledge at the international, national and local levels.

1. International Directory of Marine Scientists. Rome, FAO, 1977.
2. American Men of Medicine. New York, Institution for Research in Biography, 1961.
3. A.L.A. Membership Directory. Chicago, American Library Association, 1950- (Annual)
4. Directory of Special and Research Libraries in India. Calcutta, IASLIC, 1962.

Trade Directories: it is not possible for the general international directories to cover all aspects in detail. Thus it has to be highly selective and limit its coverage to major topics. Hence specific trade directories cover detailed information about the important and minute information of worth knowing.

1. Kelley's Directory of Merchants, Manufacturers and Shippers of the world: A guide to the export and import, shipping and manufacturing industries. London, Kelley's Directory. 1880 – (Annual).
2. American Register of Exports and Imports. New York, Am. Reg. Of Export and Import Corporation, 1946- (Annual)
3. Thacker's India Directory. Calcutta, Thacker's Press and Directories. It's a comprehensive directory. Arrangement is state wise and within a state alphabetically by city. It covers information about the government and its officials, trade, commerce, educational institutions, societies etc.

7.5 SELF ASSESSMENT QUESTIONS

1. Explain the characteristics and types of Year Books and Almanacs with examples
2. Describe Directories as ready reference sources
3. Write short notes on :
 - a. Statistical sources
 - b. Encyclopedia supplements

7.6 SUGGESTED READINGS

1. Grogan, D. Science and Technology: An Introduction to the Literature.
2. Higgins, G. Printed Reference Material.
3. Katz, W. Introduction to Reference Work. Vol. I.
4. Sharma & Grover. Reference Service and Sources of Information New Delhi: Ess Ess Publications.
5. Encyclopedia of Library & Information Science. Vol. 26.

LESSON 8

BIOGRAPHICAL AND GEOGRAPHICAL SOURCES

AIMS AND OBJECTIVES

The aim of this Lesson is to explain the Biographical and geographical sources in detail with examples of those sources. After reading this Lesson you would be in a position to understand the need for biographical and geographical sources, their types both inclusive and exclusive. You would also learn about the gazetteers, maps and atlases.

Structure

- 8.1 Introduction**
- 8.2 Need, features and historical development of Biographical Sources**
- 8.3 Types of Biographical sources**
- 8.4 Need and characteristics of Geographical Sources**
- 8.5 Types of Geographical Sources**
- 8.6 Gazetteers**
- 8.7 Maps and Atlases**
- 8.8 Self Assessment Questions**
- 8.9 Suggested Readings**

8.1 INTRODUCTION

Biographies provide information on the lives and accomplishments of famous people. Biographical sources form an important part of reference collection. Biography is written as life of a person. It is the truthful transmission of personality. It is the recreation of a person's life. It is not merely a narration of the events of a life. It gives flavour of personality. It gives person's achievements. It is accurate, balanced and objective account of person's life.

Geographical sources are one of the important parts of reference collection in any library. They are special type of material that will provide specific information on places of the world. Geographical sources are important art of reference collections. They consist of graphic representations. They are made use of answering reference questions on geographical aspects. On the purely imaginative level, geographical sources have the ability to transport the user to any part of the world. Geography is the science that describes the surface of the earth and its associated physical, biological, economic, political and demographic characteristics especially in terms of large areas and the complex of inter relationships obtaining among them.

8.2 NEED, FEATURES AND HISTORICAL DEVELOPMENT OF BIOGRAPHICAL SOURCES

Writing biography is an inherent and deep rooted instinct in man to perpetuate the memory of life. As a source of information, it tells accurately the history of an individual from the cradle to grave in a manner that will reveal the various aspects of his character, personality and philosophy in relation to the time he lives in. These aspects ultimately constitute a source of inspiration and guidance to human being to modify their activities. As such, these sources form an important collection of reference section in any kind of library.

Biographies provide information on the lives and accomplishments of famous people. Examples include the Biographical Dictionary of Scientists and African-American Business Leaders. A biographical dictionary differs from a biography: a biographical dictionary gives some information about the lives of lots of people, while a biography gives lots of information about the life of one person.

Definition: The term biography has been derived from two Greek words, 'bios' meaning life and 'Graphien' means to write. According to Oxford English Dictionary, biography means "The history of the lives of individual men or a written record of the life of an individual."

Harrod's Library Glossary defines biography as "a written account of a person's life or the branch of literature concerned with the lives of people." And a biographical dictionary as "a collection of lives of people arranged in alphabetical order."

To quote Luis Shores, biographical dictionary is "essentially a dictionary of notable persons, usually arranged alphabetically by surnames, with biographical identification that range from brief outline to extended narrative."

History and development: From time immemorial it has been observed that men have been interested in the lives of other men, out of the desire to learn from them or to imitate them. This process of human interest is responsible for the growth of biographical sources.

Plutarch's Parallel lives containing life history of forty six Greeks and Romans of first century A.D. is said to be earliest biography. John Dryden translated the same under the title "History of Particular Men's Lives". Since then this meaning of biography as the history of the life of an individual has gained momentum and became established as a literary form.

Biography as a subject and literary form was actually born in England towards the middle of 17th Century. Izaak Walton's Life of Donne (1640), Life of Hooker (1651), Life of Herbert (1670) are some notable works of this period and this is considered as the 1st stage of biographical development.

James Boswell's life of Samuel Johnson (1791) century was considered as an outstanding work. From 18th century, biographers were treated as historians, i.e. a class of artistic works. But biography as literary form differs in purpose, style and content from simple biographical information about an individual. 19th century however witnessed a number of publications under the title Dictionaries of National Biography, providing biographical information about all important national figures. These collections, containing biographical articles became forerunners of modern biographical dictionaries in which factual

information are arranged alphabetically unlike a dictionary. This is called as the II nd stage of biographies.

Thus, biographies of modern times gradually gained ground from flowery descriptions and the narrative of an individual's life and pursuit to the very controlled codification of large number of eminent persons' lives – their activities, ideas, writings, or discovery etc. These IIIrd stage biographies have made definite contribution to the history of mankind. Dictionary of National Biography by Stephen is a monumental specimen of such efforts.

Brief biographies, in collected form are, however, a 20th century development. E.g. Eminent Victorians by Strachey Pub., (1918). Gradually biographical dictionaries developed as a distinct lot. The modern biographies could afford only a limited space to each individual in its attempt to be comprehensive and it includes reference to the lives of people, eminent in all walks of life.

Characteristics of Biographical Sources: Some important characteristics of biographical sources are:

- An international biographical dictionary is usually biased towards the country where published.
- National biographical dictionaries likely to cover more nationals and provide more information than international.
- A special bibliography is likely to provide more information than general source.
- Books on local history provide more information than national. These may cover less prominent persons also.
- News papers and periodical indexes are excellent sources for obituaries, significant achievements, opinion and views about notable persons.
- Encyclopedias are excellent sources of biographical information.
- Well edited biographical sources may provide descriptive as well as evaluative account.
- The biographies show bias of the period concerned relating to choice and treatment of biographee. E.g. Independence period.

Nature and Scope: The aim of biography is two folded:

1. it should appeal to our curiosity about personality;
2. it should appeal to our interest in factual knowledge.

For these reasons, biographical sources are considered as a popular form of literature in the libraries forming the part of its reference collection.

Harold Nicholson defined it, as “A biography must be a history, in the sense that it must be accurate and depict person in relation to his times. It must describe an individual with al the gradation of human character and not merely present a type of virtue or vice.”

Therefore, the scope of biographies includes the birth and death dates, qualifications and contributions and the address of the biographee.

Contents: A good biographical dictionary should be confined mainly to memoirs of persons of eminence, with precise statements of dates and facts, a list of publications and a condensed account. Experts in the field have given the elements to be covered in biography. Louis

Shores states “people are interested in people. Facts about great peoples lives, the vocational and advocational interests, religion, philosophy, recreation, courtship, family life, education and adventures are sought by young and old.” Further, people generally ask questions at the reference desk about dates of birth and death, college attended, degree earned, names of family members, and present address etc. hence all these aspects should be covered. Biographies should maintain brevity and exclude redundant facts.

Thus, Biographical sources include the information that ranges in length from several brief sentences containing basic factual information about a person, to quite extensive "chapters" on individuals, or "mini-biographies." An example of a source which includes only basic factual information is *Who's Who in America*. Sources giving more extensive information include the *Dictionary of Literary Biography*, *Current Biography*, and *The Dictionary of American Biography*

Data collection: The information for biographies is usually collected from other sources such as newspapers, magazines, books, etc. and often from the individual being covered through questionnaires. All the publications appeared as ‘biography’ can not be considered as reference tools because they do not fall under accepted category as mentioned above.

8.3 TYPES OF BIOGRAPHICAL SOURCES

Biographies are again of mainly two types – Inclusive and exclusive.

The **inclusive biographical sources** include dictionaries, directories, encyclopedias, handbooks, manuals, newspapers (obituaries), periodicals, year books etc. Periodicals and Newspaper indexes are also valuable sources of biographical information.

The **exclusive biographical sources** are categorized based on different factors.

According to coverage – General or Universal (International, more comprehensive)

According to period – Current (Who is Who) and retrospective (Who was Who)

According to size – Single and Multi volumes

According to language – Any language of the world

According to subject – special or subject

Indexes to biographies (helps to locate biographies in various sources)

Katz divided them as Indexes, Data type (biographical dictionaries) e.g. Who's Who, Essay type – extensive and descriptive profiles of living and dead.

How to use biographies: Reference librarian has to answer a number of questions on biographical information. Some are straight but some are complicated and requires sound knowledge of biographical sources. Before searching the librarian has to think about the following aspects of the queries.

- What type of information the enquirer needs?
- How much information should be given?
- Is it going to be a short answer or essay type?
- Ready reference or long range?

To find information from the sources, the librarian has to ascertain the nationality of the person; whether he is alive or dead; his profession or occupation; his contribution and achievements. All this information is available from any standard biographical dictionary.

Initial preparation is require experience and thorough knowledge of different biographical tools.

Important points to be noted in answering biographical questions is that care is required for 19th century biographies as were bias towards the period. It is better to compare a number of sources. Biographical dictionary is preferable to get grief and general information.

Examples:

International:

1. Current Biography Monthly Magazine: 1940- New York, H.W.Wilson. (monthly)

Renowned since 1940 as a trusted source of timely information, Current Biography offers:

- 11 issues per year—a monthly publication schedule that allows Current Biography to keep up with the day’s most talked-about personalities.
- 16 to 20 profiles per issue, representing a wide range of professions.
- Obituaries, whenever possible, of figures profiled in previous issues.
- A cumulative index in each issue, listing all those profiled in the current volume year.

An invaluable source for researchers, teachers, students, and librarians, Current Biography draws information from newspaper and magazine articles, books, and occasionally personal interviews or questionnaires completed by the subjects. This resource presents biographical information in a lively style that makes for entertaining as well as informative reading.

All entries are feature length; the heading of each article includes full name of the individual, date of birth, occupation and address. This is followed by life and works of the biography, covering specific details of the person’s career, critical evaluation of an artist’s work, his views, attitudes and opinions. At the end of the article further reference are given. Each entry accommodates a recent photograph of the biographee. Specialist staff, including researchers, writers and editors, prepares the sketches.

Current Biography Cumulate Index: 1940-200. It indexes all the profiles and obituaries published from 1940 through 2000 in a single alphabet with 25,000 articles.

Current Biography Illustrated: All the in-depth coverage of the Current Biography monthly, in a searchable database. More than 25,000 articles on figures 1940 to the present, plus over 19,500 photos, and available online

Current Biography Yearbook: An annual hardcover cumulation of all the biographies published in the 11 monthly issues—about 220 profiles.

Current biography International Yearbook 2004: is a new annual publication that focuses exclusively on people of international prominence outside the U.S.

Merriam Webster’s Biographical Dictionary, Massachusetts, G & C Merriam, 1972- (latest 2004) : Provides profiles of more than 30,000 noteworthy individual from all over the world, including key figures from Asia, Africa, Latin America, and the Pacific Rim as well as Canada, U.K. and U.S.A. contains biographies for major figures in business, sports, the arts,

politics, science, popular culture – every field of human endeavor in every era. It covers both living and dead personalities.

Each entry includes name, pronunciation, syllabication, dates, nationality, city of residence, designation/profession, family, education, career, other significant achievements like inventions, publications etc. The pronunciation preferred by family or the individual is given priority. A number of tables giving details of Presidents and Vice Presidents of U.S.A., popes of Rome, Roman Emperors etc. are provided. This is the most useful source giving bare minimum information for identifying dates, nationality, and general field of the person concerned.

The International Who's Who, London, Europa publishers, 1935 - (Annual): This source is vital in scope covering almost every outstanding international personality of contemporary times. Brief biographical sketches running to few lines include DOB, nationality, education, profession, career, present position, honours, awards, and present address. Arranged alphabetically by the name of the person. Vital statistics are provided for living persons from all countries. The treatment is uneven with bias towards English people. The work can be identified as three parts, the first one listing monarchs and royal families; second is the list of obituaries; third is the list of biographies from different countries.

Literature Resource Center: Literature Resource Center provides in-depth biographical and critical analysis of over 2,400 authors. Each of these authors is further classified by nationality, ethnicity, genres in which they have written, literary movements and time periods to which they belong, and literary themes generally associated with their work.

National Biographical sources:

1. **Dictionary of National Biography:** Ed by S.P.Sen. Calcutta, Institute of Historical Studies, 1972-74. 4 volumes.

It aims to cover people from all walks of life – politics, religion, social reforms, education, journalism, literature, science, law, business and industry, who had made some tangible contribution to national life from the beginning of 19th century to the achievement of independence. 32 research fellows collected the material and 350 contributors have written the sketches.

The coverage is undivided India, with 1400 biographies. Arrangement is alphabetical by surname according to English spelling. The length of each entry is 600-2400 words. Selected bibliography was given at the end of each article for further reference. All articles are signed with name of the contributor. It is a standard work useful for historians and general public as well.

2. **India, Who's Who**, new Delhi, INFA Pub., 1969- (annual). Aims to provide basic biographical information about living Indians. Persons by virtue of their position, and achievements in the fields such as in civil services, education, business etc. have gained recognition. The sketches are short and include: present position, DOB, place of birth, names of family members, education, career, publications, office and residential address, telephone numbers. The publication is divided into seven sections: 1. Business 2. Humanities 3. Public affairs 4. Sciences; 5. Sciences, applied 6. Social sciences and Law 7. Miscellaneous. Within each section further arrangement is alphabetical. Occurrences (position change) and obituary

during printing are given in the beginning. Appendix contains addresses of leading associations, institutions, universities etc.

National Biographical Dictionary of India. Compiled by J.S.Sharma. New Delhi, Sterling, 1972. Attempts to provide info about life and thoughts of well known Indians who played vital role in the history of the country. Covers 5000 years to the present. 5000 entries covering all walks of life. Sketches are brief with hDOB, DOD, profession, summary of important events of their lives, publications etc. Entries are arranged alphabetically by surname. Cross references and comprehensive index are the added features.

Current biographies:

Times of India Directory and Yearbook including Who's Who.

Who's Who in India. New Delhi, Guild Pub., 1967-

Who's Who in India. Mumbai, Business Press, 1985-

Other countries:

The Dictionary of National Biography (or **DNB**), Now **Oxford Dictionary of National Biography**, London, Oxford Univ. Press, 1885- (60 volumes): It is a standard work of reference on notable figures from Great Britain and British history. The editor of the Oxford DNB and leader of the project is Dr Lawrence Goldman, from October 2004. For editorial and practical purposes the dictionary's subjects were divided into one of twelve areas according to theme and chronology: for example, science; business and the world of labour; literature, 1780-2000; the general eighteenth century. Each area was supervised by a consultant editor who, with the editor, was responsible for overseeing the development of his or her particular section of the dictionary. Each area was in turn divided into a series of blocks of subjects structured around a common theme: for example, Medieval Latin writers; eighteenth-century criminals; twentieth-century social reformers.

The Oxford DNB's 50,000 articles have been written by almost 10,000 expert contributors, including university scholars, independent researchers, and writers drawn from many disciplines. As well as being large, this community of authors is also geographically diverse. Just over 7000 contributors are based in the United Kingdom, and the remainder residents of forty-nine countries (including 1396 from the United States, 302 from Australia, 52 from Germany, and 16 from India). The new dictionary, now known as *The Oxford Dictionary of National Biography*, was published on 23 September 2004 in 60 volumes in print at a price of £7,500, and in an online edition for subscribers. At publication, the 2004 edition had 50,113 biographical articles covering 54,922 lives, including all those in the old *DNB*.

Dictionary of American Biography: Indexes people who have made a significant contribution to American life.

Who Was Who in America with World Notables: Americans and people from other countries who contributed directly to American history are included.

American National Biography (ANB): This database offers portraits of more than 17,400 men and women whose lives have shaped the United States. Updated quarterly, the ANB

features thousands of illustrations, more than 80,000 hyperlinked cross-references and links to select web sites.

Professional and subject biographies: Due to increase in the number of professional are useful for locating addresses, correct spelling of names, and miscellaneous information about an individual.

1. Who's Who of Indian Writers: New Delhi, Sahitya Academy, 1961. Indian authors in all Indian languages including English are included as subjects. Each entry includes name, titles, degrees, pseudonym, date and place of birth, mother tongue, education, present occupation, total number of books, address.

2. Biographical Directory of Librarians in the Unites States and Canada. 5th ed. Ed. By Lee Ash. Chicago, A.L.A., 1970. Includes active members of library profession, archivists and information scientists with all types of libraries. Each entry provides place, DOB, family, education, language read or spoken, positions, activities and organization, honours, publications, areas of professional interest and mailing address.

3. McGraw Hill Modern Men of Science: New York, McGraw Hill, 1966-68, 2 volumes. Contains 846 biographies of leading contemporary scientists. Describes essential biographical data and achievements of scientists. Though out dated up-dated to some extent by McGraw Hill yearbooks and Encyclopaedias.

Some important biographical sources on the Web are:

African American History

<http://afgen.com/history.html>

This site on African-American history contains the text of significant speeches. There's also biographical information about famous African-Americans.

Biographical Dictionary

<http://www.s9.com/biography/>

"This dictionary covers more than 28,000 notable men and women who have shaped our world from ancient times to the present day. The dictionary can be searched by birth years, death years, positions held, professions, literary and artistic works, achievements, and other keywords."

Biography

<http://www.biography.com/>

Offical site of A&E's Biography television series. Includes the searchble text of 15,000 entries from The Cambridge Biographical Encyclopedia.

biography-center

<http://www.biography-center.com/>

A searchable, multi-lingual biographical directory. This site indexes and provides links to biographies available from other Web sites.

Buscabiografias

<http://buscabiografias.com/>

Spanish-language resource for biographies of famous people from all over the world,

from the past and present. Includes royalty and world leaders, writers, actors, musicians and singers, artists, athletes, philosophers, and scientists.

Current Biography Excerpts

<http://www.hwwilson.com/currentbio/cbonline.html>

Looking for a biography of your favorite athlete? This site probably has it. It has short biographies for lots of athletes in lots of different sports.

Dead or Alive?

<http://www.deadoraliveinfo.com/dead.nsf>

This site tracks whether famous people are still alive or not. On March 9, 2004, the site listed 6765 famous and semi-famous people from a wide range of backgrounds.

Distinguished Women of Past and Present

<http://www.DistinguishedWomen.com/>

"This site has biographies of women who contributed to our culture in many different ways. There are writers, educators, scientists, heads of state, politicians, civil rights crusaders, artists, entertainers and others. "

The First Ladies of the United States

<http://www.whitehouse.gov/history/firstladies/index.html>

A White House Historical Association site with pictures and biographies of the U.S. First Ladies, from Martha Washington to Laura Bush.

100 Greatest Female Athletes

http://sportsillustrated.cnn.com/siforwomen/top_100/1/

Sports Illustrated for Women provides biographies of 100 of "the century's greatest sportswomen".

The List of Popes

<http://www.newadvent.org/cathen/12272b.htm>

Provides a biography of all 265 Popes of the Roman Catholic Church from 32 AD to the present. Includes a detailed entry for Pope John Paul II with links to online speeches and writings.

Lives, the Biography Resource

<http://amillionlives.com/>

"Lives, the Biography Resource is a collection of thousands of annotated links to biography sites. It is cataloged by individual names and biography collections (geographical, professions, Civil War, etc.), and includes materials such as journals, diaries, letters, memoirs, narratives, image collections, biographical dictionaries, critical biography and more. The site is searchable."

The Nobel Channel

<http://www.nobelchannel.com/>

A very informative web site that brings to life those that have won the Nobel Prize with movies and audio of speeches. While this site is a work in progress, it has the history of how the prize began, as well as information on all of the categories that the prize is given and some of the winners. It has great graphics, is easy to navigate, and

has a wealth of information. The plug-ins Real Audio and Shockwave are needed to take advantage of the site's full capabilities but you can get some good information without the plugins too. This site may have a slow download time depending on one's computer.

Nobel Peace Prize Winners

<http://www.almaz.com/nobel/peace/>

A listing of Nobel Peace Prize winners and what they won for. Provides links to other sites about the winners, when available.

Their Stamp on History

<http://www.stamponhistory.com/>

"Their Stamp on History is an educational site exploring the lives of important historical people through their pictures on postage stamps. It's meant to be used as a resource for stamp collectors, students, teachers, parents, and anyone interested in the lives of unique people. The site is designed to be easily usable for reference, but also easy to surf randomly through, picking out the bits and pieces that you find most interesting." Each entry includes a picture of the postage stamp, along with its face value, a description of its text, and its current (1999) value. Links to information about that person and, sometimes, full biographies are also included. Stamps are indexed by name and by occupational category.

Who's Alive and Who's Dead

<http://www.whosaliveandwhosdead.com/>

"The site that helps you keep track of which famous people have died and which are still alive! The people listed in Who's Alive and Who's Dead are grouped according to the accomplishments for which they are best known. That makes it easy to find the cast list of your favorite TV show or rock group. Or, you can easily get a list of famous athletes who played your favorite sport. Politicians are here too, along with authors, cartoonists, astronauts, and a bit of everything else."

8.4 NEED AND CHARACTERISTICS OF GEOGRAPHICAL SOURCES

Geographical sources are one of the important part of reference collection in any library. They are special type of material that will provide specific information on places of the world.

Definition: A geographical source primarily consists of graphic presentation of the earth surface. These are concerned with information about places such as cities, towns, lakes, mountains, forests etc., their location, description and other details.

History: the geographical sources can be traced back to the ancient times when man recorded the route he traveled for his remembrance and to convey the information to others. Later to establish ownership of places occupied or conquered man has used more permanent material to record such information. Navigators and business people need know the sea routes and exploit the natural resources so developed maps. Of course publication of maps is a 19th century phenomena. E.g. Gazetteers of Madras

Nature and characteristics: Katz stated that "the difference between the geographical sources and other works is that they are primarily graphic presentations which allow imagination of

full region. They are works at and rarely found is the purely textual apache to knowledge". The advantages over other works a

- They give info for smaller units not found in given word.
- The info given after will be more precise.
- Since they are limited to one area, they are usually easier to use.
- They play an invaluable role and dominant in our reference collection.

Geographical sources are important art of reference collections. They consist of graphic representations. They are made use of answering reference questions on geographical aspects. On the purely imaginative level, geographical sources have the ability to transport the user to any part of the world. Geography is the science that describes the surface of the earth and its associated physical, biological, economic, political and demographic characteristics especially in terms of large areas and the complex of inter relationships obtaining among them.

A geographical source is primarily consist of information about location and description of places and determination of distances between the places. In other words these are concerned with information about political divisions of places, physiographical features such as mountains, lakes, rivers, forests etc., Therefore, as a reference librarian we have to study the range of information sources on geography.

NEED FOR GEOGRAPHICAL SOURCES:

Human civilization makes use of maps in several ways. Therefore the need for geographical sources can be summarized as follows:

- Man has interest in geographical matters.
- Interest for voyaging in to unknown places or discover new places
- Increase in travel due to developments in transportation; increase in tourism and Government efforts to attract tourists.
- Development of Geography as a subject and the need for publication for visual location identification.

The improvement in the means communications has lead to increase in travel all over the world. Tourism and development of transport and communication has also lead interest on geographical aspects. As a result the people are becoming more aware of the places and their description. At this juncture a geographical sources play a vital role in answering queries, concerning places. Further the two world wars have also lead the human interest that has shifted in geographical sources. The changing political, economic, social conditions during the few decades have influenced maps of continents, drastically and stimulated human curiosity for knowledge of places hitherto unhard of them. Moreover, there is also increasing emphasis on the teaching of geography at various levels of education. Enquiries about geographical information are rather common in every type of library. Therefore, the reference librarian shall be prepared for any eventuality of this type of queries. All this factors has lea to production of variety of geographical questions.

Since the need for geographical sources are unlimited, and it is essential to study the various types of answers to geographical questions are not necessarily limited to specialized books. There are as many reasons for consulting these sources as there are patterns and most of self-evident, the location of small town in some country, the nearest rail road, the air-line, conditions of roads, the number of hotels in a city and so on and so forth.

Answers to geographical questions, are also found in many other reference sources such as encyclopaedias, almanacs, yearbooks, but geographical sources have distinct advantage over general reference sources, as mentioned Katz:

1. They give information for smaller units not found in general works.
2. The information given will be more précised; and
3. Since they are limited to one area, they are usually easier to use. More in depth indexing is another major advantage.

NATURE OF INFORMATION PROVIDED IN THE GEOGRAPHICAL SOURCES:

The following types of information is usually provided in the geographical sources. They are physical geographical information, ecological information, information on economic geography, human geography and information on government and historical development of places.

8.5 TYPES OF GEOGRAPHICAL INFORMATION SOURCES

Information on geographical aspects is seen in a variety of reference sources. The following two broad categories are identified. 1. Inclusive sources of geographical information and 2. Exclusive sources of geographical information. The geographical information sources are many but they are broadly categorized as inclusive and exclusive.

Inclusive	Exclusive
Encyclopedias	Gazetteers (Geographical Dictionaries)
Dictionaries	International
Bibliographies & Indexes	National
Biographical sources	Local /Regional
Year books & Almanacs	Atlases & Maps
News papers	Geographical
Periodicals	Physiographical
Sources of Statistics	Topographical
	Geological
	Economic
	Commercial
	Guide books- in series or individual
	Census Reports

INCLUSIVE SOURCES OF GEOGRAPHICAL INFORMATION:

These are called parallel sources or general reference sources. They are not exclusively devoted to geographical information but they provide some data on geography. Hence these sources are known as inclusive sources. However, there is much duplication of information in these sources. The following are the various categories of inclusive sources.

Encyclopaedias

- a. Biographical sources
- b. Dictionaries
- c. Bibliographies and Indexes
- d. Year books
- e. Newspapers
- f. Almanacs
- g. Periodicals and
- h. Sources of statistics.

Encyclopaedias:

These are extremely useful of geographical information regarding countries, states, cities, etc., and also they provide maps, such as thematic maps. They also provide information in historical, socio-economic aspects of places.

Dictionaries:

They provide definitions of geographical terms and physiographical features with population statistics and area of the places.

Year Books:

They provide factual data about the places giving description on climate, constitution, demography, education, defence, finance, insurance companies, scientific research activities, social welfare, communication, finance, cultural activities, agriculture, industrial developments, justice and laws, sports, planning development, and similar aspects of data, on places.

Almanacs:

These are also useful source on various countries with respect to government, finances, population and general statistics of various nations of the world.

Biographical Sources:

They are useful for locating the biographies of cartographers and geographers.

Bibliographies and Indexes:

These are useful for locating geographical sources. Similarly indexing and abstracting of sources are also useful for locating articles on places etc. Though these do not contain directly the information on geographical aspects, but provide bibliographical references to various bibliographies and other sources of geographical information.

Newspapers:

These provide information on weather forecasting, other important information about road transport, train timings, air timings, etc.

Periodicals

These provide articles on various aspects of geography. There are exclusive geographical journals such as National Geographic Magazine, which often provides maps and descriptive account of places etc.

Sources of Statistics:

They provide data in tabular form and also thematic maps. These sources of statistics give geographical data in readily accessible form.

EXCLUSIVE SOURCES OF INFORMATION:

These are specific sources which are specially prepared to provide geographical information. This may be divided into three broad categories:

1. Gazetteera
2. Atlases, Globes, Maps, etc.
3. Guidebooks

These exclusive sources have distinct advantages over the inclusive sources of information. They are as follows:

1. The exclusive geographical sources provide information for smaller units which are not available in the general reference sources.
2. These provide different types of maps, atlases, and detailed description of places, which is more precise, factual and pinpointed.
3. These are generally limited to one geographical area and these offer ease of access and reference.
4. These also provide detailed index for places, physiographical features of various types and gazetteer type of information.
5. From the point of travel, there is an exclusive guide books which general reference books do not provide.

8.6 GAZETTEERS

Gazetteer is a geographical dictionary or a dictionary of places or a finding list with a alphabetical arrangements of towns cities, rivers, lakes, mountains, etc., with indication of their location and other brief particulars.

According to L.M. Harrod a Gazetteers is a geographical dictionary with a varying amount of descriptive, geographical, historical of statistical information.

ALA Glossary of Library and Information science defines Gazetteer as a geographical dictionary.

According to Louis Shores, Gazetteers are alphabetical list of places names including such information for each place as pronunciation, location, description, statistics, etc., They are issued both separately and as part of other reference books. Notable, unabridged dictionaries, encyclopedias, and atlases.

From the above definitions, we can understand the concept of the Gazetteer as follows: A Gazetteer basically provides information on description, population, historical, statistical, socio-economic conditions of a given place. It is used to locate a place where that settlement, a physical feature are man-made feature such as the name of and administrative district. These are most useful sources of geographical information. The entries in the Gazetteer are usually arranged in alphabetical order by the place name. These provide information on places with regard to climate, temperature, rainfall, population, location, area, historical, tourist, religious and industrial importance etc., and serves as location guides in the form of latitude and longitude.

TYPES OF GAZETTEERS:

These may be divided into three categories depending on the coverage and scope and information content. They are

1. International Gazetteers
2. National Gazetteers
3. Regional or Local Gazetteers or District Gazetteers.

International Gazetteer:

These cover places of the world. The information is usually detailed one.

Examples:

1. Columbia Lippincott Gazetteer of the World
2. Webster's New Geographical Dictionary
3. The Times Index Gazetteer of the World.

National Gazetteers:

These gazetteers are limited to a particular nation. Usually these are issued by the respective governments. These provide a comprehensive view of the nation with respect to geographical information.

Examples:

1. Bartholomew Gazetteer of Britain
2. Imperial Gazetteer of India
3. Gazetteer of India

Regional of District Gazetteers:

These provide information on parts of the country such as states or districts. These provide more detailed information about the districts and states than provided in the national or international gazetteers. In India, for e.g., there are number of state and district wise gazetteers published by the respective gazetteers. These district or state gazetteers provide comprehensive information with all necessary background data, statistical particulars and ancillary details in the historical, archaeological, political, administrative, economic, commercial, industrial, agriculture, social, cultural and other aspects of the state or district and the life of the people in that area with maps charts and other information.

Examples:

1. Andhra Pradesh District Gazetteers
2. Tamilnadu State Gazetteer
3. Orissa District Gazetteers
4. Karnataka State Gazetteer.

1. *Columbia Lippincott Gazetteer of the world*: New York, Columbia University Press, 1952 (supplement 1962) Ed. By Leon Seltzer with the Geographical Research Staff of Columbia University Press and cooperation of American Geographic Society.

- It includes every possible town likely to find its way into a map. Considered as comprehensive geographical dictionary of places all over the world. Contains 1,30,000 entries with information on places and brief note on villages, long essays on rivers. Each entry provides data on pronunciation, geographical and physical description, economic and historical data. Arrangement is alphabetical with cross-references. Supplement (1962) is in 23p., but extremely useful with updated info.

2. *Webster's New geographical Dictionary*: A dictionary of names of places with geographical and historical inform and Pronunciation. Spring Field Massachusetts, G&C Merriam Co, 1972 Rev. Ed.

- First published in 1949 as Webster's Geographical Dictionary. 48,000 entries with international scope but bias to U.S. The arrangement is alphabetical with cross-references. It gives all information in general and also gives geographical features, historical movement, economic and historical features, historical monuments, and economic and historical data.

3. *Gazetteer of India: Indian Union*. It was issued on behalf of the Gazetteers Unit, Ministry of Education and Social Welfare, Govt. of India. Published by Publications Division, Ministry of Information and Broadcasting, Government of India in 4 volumes. First published in 1965 and reprint came in 1973.

Volume I – Country and People

Volume II- History & culture

Volume III- Economic structure and activities

Volume IV – Administration and Public Welfare.

Besides, there are distinct gazetteers for each district in each state of the cuntry.

7.7 MAPS AND ATLASES

Maps atlases and globes are significant sources of geographical information, for visual location and identification of a country, regions, city, town, mountains, rivers etc.

Maps: The word maps came from the Latin word 'Mappa' meaning napkin or cloth. Map as a broader term is a representation of certain boundaries of the earth on a flat surface. It may also include representation of other planets.

According to **Library of Congress:** "All forms of cartographic materials normally added to the collections of the library, including flat maps and charts, collections of maps in atlas form, terrain models, globes etc."

A.L.A. Glossary defines maps as: A representation normally to scale and on a flat medium of a selection of material or abstract features on or in relation to the surface of the earth or another celestial body."

Harrod's Glossary defines it as: "Map is a plane representation of the earth's surface or a part of same indicating physical features, political boundaries etc."

Katz stated that a map is "a representation of earth on flat surface."

The art of map making is cartography and the makers are cartographers.

Atlas is a collection of maps in a handy form. The word Atlas was first used by Gerardus Mercator in 16th century to describe a collection of maps bound up in one volume.

ALA Glossary defines Atlas as: A volume of maps, engravings, tables etc. with or without descriptive letter press. It may be an independent publication or it may have been issued to accompany one or more volumes."

Harrod's Glossary: "Atlas is a volume of maps with or without descriptive press. It may be issued to supplement or accompanying a text or be published independently. Also a volume of plates, engravings, illustrating any subject, a large size of drawing paper measuring 26 ½ x 34", a large folio volume, resembling a volume of maps, some times called 'atlas folio'.

Globe: A globe is a spherical representation of the earth. It is considered as the relatively accurate representation of the earth.

Scope of maps and atlases: The scope of maps and atlases may be of two categories – (i) general map which is either political or physical or a combination of both; (ii) thematic maps which serves some special purpose.

Special libraries will have separate collections of cartographic material. Their acquisition, cataloguing and organization are different. E.g. L.C. has a separate map section. The libraries of Geological Society of India, Geographical Society of India also have separate map sections.

Types of maps and atlases: There are a great variety of maps designed for every purpose indicating from soil content to traffic flow.

These are basically categorized into two types:

1. Historical and 2. Current

Historical: Shows world at different periods. It is an excellent source to know the changes on earth. They carry annotations which increase their instructive and informative value.

Current: These works treat the world as it is today. It is difficult to keep atlas up-to-date. It is necessary to incorporate frequent changes.

They are further categorized as:

Thematic maps: A map showing specific conditions is normally referred to as thematic map. A **physical map** traces out the various features of the land from the rivers and valleys to the mountains and hills.

Route map shows roads, rails roads, bridges and the like.

Political map normally limits itself to political boundaries e.g. towns, cities, states, countries but may include topographical and route features.

They may also be categorized as:

Geographical maps

Physiographical maps

Topographical maps

Geological maps

Economic and commercial maps

Uses of Maps and Atlases: These are useful for different persons in different ways.

1. To provide visual location and identification of places and any other geographical information.
2. To serve as representation of the environment.
3. To teach and learn geography for academic purpose.
4. To the Government administrators for planning.
5. To the commercial and industrial firms for transport, prospecting and setting of factories, offices, departments etc.
6. To the tourists for travel
7. To general public to enhance their knowledge.

Examples:

International:

1. Hammond Medallion World Atlas. Maple wood, New Jersey, Hammond Inc., 1978.

Hammond Company is one of the best known map makers. It brings out a variety of atlases and has high reputation. This atlas has 100s of maps which are large, accurate and show effective use of colour. Zip code, information on ecology, history, large number of diagrams and photographs etc have been provided in this atlas. There is an excellent index with lakhs of place names, subject indexes along with maps. It is a highly accurate but relatively an expensive atlas.

2. Rand Mc Nally Commercial Atlas and Marketing Guide. Chicago, Rand Mc Nally, 1976 – (annual). This serves as an atlas and a handy compilation of up-to-date statistics, with focus on U.S. marketing. It contains enormous amount of statistical information, giving retail sales maps, analysis of business and manufacturing, principle business centres, population, communication, agriculture etc. about each state. Each state map lays emphasis on the political, commercial aspects of the state. It also provides a small number of world and

foreign countries maps. The importance of this work also lies in its detailed index. It is being revised annually recording accurate changes.

3. Britannica Atlas. Chicago, Encyclopaedia Britannica, 1977.

4. Rand Mc Nally Cosmopolitan World Atlas. Chicago, Rand Mc Nally, 1978.

5. The Times Atlas of the World: A Comprehensive 6th Edition. London, Times News Papers Ltd., 1980.

6. World Atlas of Agriculture. Navara, Italy, Instt Of Geographies de Agostine, 1969-73. 3 volumes

National:

1. National Atlas of India by S.P.Chtterjee. Calcutta, National Atlas Organization, 1957.

2. National Atlas of USA, Washington, U.S. Geographical Survey, 1970.

Tribal map of India. Calcutta, Anthropological Survey of India, Govt. of India, 1956.

Local:

1. Hyderabad in Maps. Hyderabad, Bureau of Economics and Statistics. Govt. of Andhra Pradesh, 1953-

2. Rand Mc Nally Road Atlas: U.S., Canada, Mexico. Chicago, Rand McNally, 1970-

8.8 SELF ASSESSMENT QUESTIONS

1. Examine the need for Biographical sources and explain the types of biographical sources
2. Describe any two national biographical sources
3. Discuss the nature of geographical sources and outline the need for such sources in a public library.
4. Discuss in detail the various types of geographical sources with examples.
5. Write short notes on:
 - i. Gazetteers
 - ii. Biographical dictionaries
 - iii. Maps and Atlases

8.9 SUGGESTED READINGS

A.M.L. Robison, *Systematic bibliography*, 3rd ed., London, Bingley, 1971, pp. 27-30.

Archie G. Rugh, " *Catalog, bibliography, or index*," RQ, 13,1973, pp. 27-30.

Georg Scheider, *Theroy and history of bibliography*, Ralph Robert Shaw, trans., New York, Scarecrow Press, 1961, pp. 13-36, 271-293.

Roy B. Stokes, *Bibliography, Encyclopedia of library and information Science*, New York, Dekker, 1969, vol.2, pp. 407-419.

LESSON 9

HANDBOOKS AND MANUALS, LISTS OF SERIALS AND UNION CATALOGUES

AIMS AND OBJECTIVES

This lesson aims to explain various sources such as Hand books, Manuals, List of Serials , union catalogues and news summaries which are characterized as guides to sources. After reading this lesson you will be in a position to understand types of Hand books and manuals , News summaries, Union catalogues and Directory of serials

Structure

- 9.1 Introduction
- 9.2 Hand books and Manuals
- 9.3 New Summaries
- 9.4 Union Catalogues
- 9.5 List of Serials or Serials List or Directory of Serials
- 9.6 Self Assessment Questions
- 9.7 Suggested Readings

9.1 INTRODUCTION

The tertiary documents list the secondary documents. Their function is to help the researchers in retrieving the secondary sources. Directories, yearbooks, bibliographies of bibliographies, lists of research in progress guides to literature, guides to organizations, guides to libraries, text-books etc., are included in this category of documents. Handbook is the best 'working tool' of a technologist, Handbooks usually contain factual information, data, tables, formulae etc. They are designed to meet what is called 'every-day approach'. For providing case of consultation most of them are single-volumed handy compilations. Various types of guides are available of which the most important variety is the guide to the literature of a subject.

9.2 HANDBOOKS & MANUALS:

The literal meaning of the term handbook is the book which is handy to use since it contains allsorts of facts and miscellaneous information. Usually handbooks are single volumed sources. These sources are often described as 'One volumed reference sources' and this are also designated as 'First Port of Call'.

According to Louis Shores, the handbooks and manuals are reference books of miscellaneous facts and figures on one or more subjects assembled for ready use in response to popular interest or to a specific need for concise, handy information.

L.M. Harrod, defined handbook as a treatise on a special subject, often nowadays simple but all embarrassing treatment containing concised information; and being small

mough to be held in hand but strictly a book written primarily for practionars and serving or constant revision or reference. Also called a manual.

ALA Glossary defines as a small reference book, a manual which includes instructions how to do or make things or how to perform.

SCOPE AND PURPOSE OF HANDBOOK AND MANUALS:

These sources are much useful for answering ready reference queries, and will have limited scope with specific area covered. The information is provided in short form using such graphical presentations. This will be used for answering fact finding questions, but also used for enquiries on matters of scientific and technological interest. The information is provided on minute subjects, and they are much valuable for the depth of information in narrow subject field. They deal with already established knowledge. They serve as guides family health and first aid etc., But however these handbooks may not be providing facts popular interest.

TYPES OF HANDBOOKS AND MANUALS:

There are countless handbooks and manuals. With the growth of knowledge some handbooks become outdated and new one will appear. Louis shores has categorised the sources into five types.

1. Statistical handbooks
2. Practical handbooks
3. Legislative handbooks
4. Excerpt handbooks and
5. Miscellany handbooks.

However the following broad types are recognised.

1. General Handbooks (otherwise known as Curiosities)
2. Historical Handbooks
3. Statistical Handbooks
4. Literacy Handbooks
5. Calendar Handbooks
6. Official Handbooks
7. Subject Handbooks
8. Parliamentary laws and Debate Handbooks.
9. Documentary Handbooks
10. Tables
11. Practical Handbooks or Manuals.

The practical handbooks may be divided into the following categories:

- (a) Cook books
- (b) Home maintenance books
- (c) Health and first aid books
- (d) Etiquette and correspondence books
- (e) Recreation hand books
- (f) Hobbies handbooks.

Examples: 1. Famous first facts 2. Guinness book of world records 3. Oxford companion to English Literature. 4. Familiar quotations.

7.3 NEW SUMMARIES

These sources are very popular for answering queries on current events. These are newspaper indexes but providing significant information from leading newspapers in a repacked manner. They provide information in brief form. These are published weekly or monthly and the information is presented under broad subject headings. However no particular scheme is adopted for arrangement of information. The scope of these new summaries is either international or national and subject.

Examples:

1. Facts on File: A Weekly World News Digest with cumulative index 1940- to till date.
2. Keesing's Record of world events (formerly known as) Keesing's contemporary archives - 1931 - to till date.
3. Asian Recorder: A Weekly Digest of Asian Events with index.
4. Data India: 1976 to till date.
5. Data Andhra Pradesh 1977 to till date.

9.4 UNION CATALOGUES

Periodicals / Serials are regarded as the foundation stones of literature search in big libraries. The growth of such publications is past and enormous. The efforts at achieving comprehensiveness in acquisition of such material proved just impossible for any single library to have a total coverage of current titles or of their holdings. Under such a situation it is beyond the capacity of any library to fulfill the demands of its clientele regarding serials. Therefore, it necessitates the dependence on the resources of other libraries. A Union Catalogue of Serials or Union Catalogue of periodicals is only type of reference tool, which helps to identify and locate the given title. Thus helps to meet the reading and research needs of the clientele. A union catalogue is the back-bone for the success of Library co-operation.

ALA Glossary of Library and Information Science (1983) defines Union List as 'a List of bibliographic items of a given type, in a certain field or on a particular subject, in the collections of a given group of Libraries with indication of the libraries in which a bibliographic item may be found'.

According to Knud Larsen, it is a 'a catalogue listing in one sequence the holdings or part of the holdings of two or more libraries'.

From the above, we can infer the following

- It is a catalogue of two or more libraries holding ,
- It shows which library has what document (i.e.location)
- It may be either general or pertaining to a specific field
- It may be for one region or state or nation as a whole

A Union Catalogue of Periodicals usually shows the periodical holdings of different libraries in a region or country as a whole. The entries may be arranged in alphabetical or classified or some other logical order. Thus it brings with in the knowledge of the reference librarian and his clientele the periodicals held by other libraries. When each library in the bibliographical network or bibliographic centre knows what fellow member libraries have acquired a union list can be helpful.

These catalogues may be general in scope and include titles of periodicals in all fields or they may be limited to the periodicals in some particular subject.

What Information a Union Catalogue of Serials provides

Generally a Union Catalogue of Serials may have the following sections:

- Introduction – It explains the scope and coverage and arrangement of entries with illustrations;
- Key to library symbols to be included in the holdings sections;
- Alphabetical list of serials along with holdings (main part)
- Key to classified index
- Classified Index
- Sponsor Index
- Language Index

Uses and Functions of Union Catalogues of Periodical:

Of all the reference sources that a large library would possess the most useful and valuable tool to meet the research needs is the union list or union catalogue of periodicals / serials. To sum up, the uses of union catalogues are given below. They serve the following purposes:

- To help in locating specific serial available in various libraries.
- To help in checking the full bibliographical details of a given periodical;
- To identify a given periodical for which bibliographic information is provided;
- To serve as a checking of un-located research items;
- To serve as a tool for selection of serials;
- To serve as a potential and in avoiding unnecessary duplication of expensive and little used titles.
- To provide information regarding gaps in the collections of serials at different libraries;
- To facilitate coordination in the acquisition and selection programme of a group of libraries;
- To give a clear picture of periodical holdings of libraries in a given geographical region. Thus indicating the strength and weakness of the holdings in that area.
- To help in documentation work, especially documentary reproduction work by facilitating location and procurement of serials containing the material.

Examples:

Union list of Learned American Serials in Indian Libraries, Delhi : Indian Council for Library Development, 1966

Union List of Commonwealth Newspapers in London, Oxford and Cambridge. By Arthur Reginald Hewitt, London: University of London, 1960.

Regional Union Catalogue of Scientific Serials, Madras, 1975.

Union Catalogue of Social Science Periodicals, Tamil Nadu, 1975

9.5 LIST OF SERIALS OR SERIALS LIST OR DIRECTORY OF SERIALS

It is regarded that non-monographic literature such as periodicals present the greatest problem in the achievement of complete bibliographic control. As already mentioned, journals are the major means for research reporting. The history of journals can be traced from the 17th Century. Originally these are meant for announcing current books, but today journals cover scholarly communication.

The growth of journals rated as fast approaching. This shows the nature of the problem inherent in bibliographic control of periodical literature. Listing of periodicals is one such attempt towards bibliographic control of such literature.

Need for Serials List:

The Information regarding periodicals themselves is not so frequently required as information from periodicals. But however, there are enquiries about the title of a journal, its frequency, publishers, annual subscription, its changes of titles or authority and any other pertinent matter. All such details of the periodicals are provided in a List of Serials. In order to prepare a list of journals on a particular subject, such lists are very essential. Every library one day or other has to refer such lists for checking the details on periodicals or for selection of periodicals titles for the library or for selection of periodicals titles for the library or for completing the incomplete data concerning some periodicals, as well as, for buying and filing back sets. Under such circumstances, this type of tools are of very much helpful. Hence the need for the production of Lists of Serials or Directory of Periodicals.

What Information these Serials Lists provides?

Any Serials List will provide the following information:-

- Complete name of the periodical
- Full address of the periodical – i.e. publisher's name, place, of publication, starting date and sponsor's name, etc
- Subscription price
- Frequency
- Language of the text
- Special features
- Whether indexed or abstracted. If so, in which indexing and abstracting periodicals?
- Classification number
- Buying Information
- Change of the title, if any

In the case of Newspapers the following additional information is given.

- Number of columns
- Circulation
- Size of the page
- Political bias (if any)
- Editions, whether morning or evening editions

Uses of Lists of Periodicals / Serials:

Directories or Lists of Periodicals / Serials are useful for the following purposes:

- To prepare lists of journals on given subjects.
- To select periodicals for a library.
- To get the full bibliographical and buying information for a given periodical.
- To get the full bibliographical and buying information for a given periodical.
- To know such other information such as commencement date frequency, subscription rate, circulation, language of the texts, change in title and publishers, coverage, where indexed and abstracted etc.
- To know the historical development of a particular periodical.
- To acquire and build back volumes for a given periodical.

9.6 SELF ASSESSMENT QUESTIONS

1. Describe the types of Handbooks and manuals
2. Explain the Usefulness of Union catalogues and Directory of Serials
3. Write short notes on
 - a. News Summaries
 - b. List of Serials
 - c. Manuals

9.7 SUGGESTED READINGS

1. Grogan, D. Science and Technology: An Introduction to the Literature.
2. Higgins, G. Printed Reference Material.
3. Katz, W. Introduction to Reference Work. Vol. I.
4. Sharma & Grover. Reference Service and Sources of Information New Delhi: Ess Publications.
5. Encyclopedia of Library & Information Science. Vol. 26.

LESSON 10

DOCUMENTATION - NATURE AND TECHNIQUES

AIMS AND OBJECTIVES

This unit explains the concept of documentation. The evolution of documentation as a new discipline, its development in India, its nature and also different types of document sources are explained in this Unit. This Unit also deals with documentation techniques such as indexing and abstracting.

After going through this unit you will be able to :

- Understand how documentation has emerged as a discipline distinct from library science;
- Understand the scope of documentation through a series of definitions; Describe different types of document sources and characteristics of each type;
- Explain the purpose of abstracts; and
- Describe some of the principles / guidelines important for the preparation of a good abstract.

Structure

- 10.1 Introduction**
- 10.2 Documentation: Evolution, Definition, Need, Facets and Trends**
- 10.3 Techniques of Documentation**
- 10.4 Abstracting - Definition, Purpose and Types of Abstracts**
- 10.5 Abstracting Procedure**
- 10.6 Self Assessment Questions**
- 10.7 Suggested Readings**

10.1 INTRODUCTION

The word 'Documentation' means different things to different people. In the early times it was used to describe citation of a written source in support of a statement or an argument. Here the term documentation is used to denote the process of producing all the certificates and proofs required by various authorities like customs, bankers, insurance agents, and the government. A 'documentation' manual is written by a computer programmer for preparing a software package.

But for Library and Information professionals, the word “ documentation” is a general term which denotes the process of collecting, organizing, retrieving and disseminating recorded information. Paul Otlet used the term "Documentation" in 1905 first time.

10.2 DOCUMENTATION: EVOLUTION, DEFINITION, NEED, FACETS AND TRENDS

DOCUMENTATION

The genesis of documentation as a distinct discipline, its various definitions, need, facets and trends are discussed hereunder in detail.

Genesis

From olden days libraries are collecting all kinds of publications and keeping them ready for use. But, in modern times changes have been occurred in the Library and Information fields affecting the library activities.

There has been a phenomenal growth in literature after II World War. As a result, the scientific literature has been increasing in geometric proportions.

Further, revolutionary changes in the type of documents produced have taken place. A large number of primary and secondary periodicals have appeared. In addition to this report literature, trade catalogues and ad hoc reports were also come into existence and increased the problem of Grey literature to readers and librarians. Therefore, the emphasis shifted from mere books to journal articles and reports literature and other newer forms flooding the libraries. Industries, government laboratories, private associations and several social sciences organizations have also under took research activities apart from colleges and universities. Orientation of research has become more applied, result oriented. Amount spent on research has increased tremendously and cost effective and time framed research was given importance.

Due to changing environmental pressures, the researcher need the information as quickly as possible and need to keep themselves up to date. Therefore, the emphasis has shifted from the locating mere books to locating and providing the information

The old processes such as acquisition, classification and cataloguing followed in libraries were inadequate as periodical articles and reports were to be indexed to provide pin point information, as the emphasis shifted from document to information contained in the document. Hence, the information dissemination has received greater attention than document storage and delivery.

Information dissemination activities, such as new indexing methods, current awareness services and retrieval techniques, abstracting and indexing bulletins were developed to meet the demand made by user community. These activities are also carried out by people other than the librarians. Hence, a distinctly different discipline called 'Documentation' has been established and people who specialize in this area are styled themselves as documentalists or information scientists.

For fulfilling the changing information needs of user community, documentation centers have come up. Even some libraries also quickly adapted this and started providing documentation services. Americans used the term 'Information science' where as Russia and Eastern block countries used the term 'Informatics' to denote these activities.

Documentation work is viewed as extension of Library and Information Science. It is also thought as a growing and vital information science. Hence, in this unit the terms, Documentation, Information science, Informatics etc, are used interchangeably.

Definitions

Below are given some definitions by eminent authorities for the term ' Documentation'

FID statutes define Documentation as "collection and storage, classification and selection, dissemination of information of all kinds".

In the view of ASLIB "Recording, organization and dissemination of specialized knowledge, or in other words, documentation means collecting, organizing and providing micro thoughts to scientists and research scholars".

Ralph R. Shaw defines it as "any process connected with identification, recording, organization, storage, recall conversion into more useful forms synthesis and dissemination of intellectual content of print or any other recorded material."

Paul Otlet stated in his *Treatise De Documentation* that the word documentation is a "Process by which all documents of all areas of human activity are brought together, classified and distributed."

According to *J.H. Shera*, "the group of techniques necessary for ordered preparation and communication of recorded specialised knowledge in order to give maximum accessibility and utility to the information contains".

Bradford defines- it as "the art of collecting, classifying and making readily accessible the records of all kinds of intellectual activities".

S.R. Ranganathan defined documentation on the basis of his Five laws :as

- i) The promotion and practice of bringing into use of nascent micro thought by specialists (Law-1)
- ii) Pin-pointed (Law-2)
- iii) Exhaustive (Law-3)
- iv) Expeditious (Law-4)
- v) Continuously increasing (Law-5).

In view of the above-mentioned definitions, some common features of documentation are:

- 1.all types of documents are to be taken into consideration;
- 2.the specialist or the scientist has distinct and different information needs to be satisfied;
3. putting information to work is to be emphasised, and the emphasis will be on micro thought embodied in micro documents such as reports and journal articles
4. and timeliness is equally important.

Need and advantages

The aim of information service is to explore and exploit information or knowledge in proper way by user community. But due to complexities in different physical forms of documents the researchers and scientists have to spend much time in searching his required information. Further, due to increase in the volume of literature, it is not possible for an individual researchers to scan through the entire literature. Further, there is much chance of missing the relevant literature among mass of literature. Thus, it becomes the responsibility of information scientists to solve the complex problems of providing right information to the right user at right time.

Information needs differ individual to individual. They depend on nature of the user, level of his knowledge and, experience, and the depth of his interest in his subject field. Further, often the needs of a professional person change considerably depending on his immediate activity. Hence, a documentalists needs to be conversant with these varying needs of the user community.

Facets of Documentation

Shera describes the essential task of documentation as matching the following two patterns:

- 1) The pattern of all scholarly activities in which the primary graphic records play a part: and
- 2) The pattern of intermediary services which transmit the primary recorded materials for the scholar-as-producer to the scholar-as-user.

According to Ranganathan, documentation activity is possible only if it is backed by every facet of library activity such as document selection, acquisition, accessioning, classification, cataloguing, circulation work, reference service and maintenance work, to every detail of library management developed to a higher pitch of efficiency. He recognizes the two distinct facets of documentation activities such as:

Documentation work

Documentation service

Documentation Work;

Documentation work denotes the preparation of documentation lists, including abstracts or annotations and preparation of Abstracting and Indexing Journals. It also includes acquisition of periodicals and other forms of micro literature, selection and marking of items to be included in the documentation lists, indexing or cataloguing of the selected items, classification and arrangement, provision of author, title, subject index and compilation of the list.

Documentation Service

It includes supply of documentation lists such as Current Awareness Service, Selective Dissemination of Information; Reprographic service, Translation service, preparation of ad hoc bibliographies on demand; abstracting and indexing of articles for the user where such services are inadequate; literature search and preparation of reading lists; and reference service.

As such documentation comprises two distinct set of activities one of which is concerned with analysis of literature and its organisation while the other with search and location of information and that finally lead to the provision of information or the documents bearing the information. The first group of activities considered as active or anticipating documentation and the second group as passive documentation

This service involves the application of some new technologies or application of some old techniques. Indexing techniques and application of computers are very important in the field of active documentation. Similarly, reprography and application of computer and electronic media play important roles in the field of passive documentation.

Trends in Documentation

Basically, documentation involves the work of analysing and indexing of articles. This activity has always been conceived on a large scale and is almost universal in its scope. Different opinions are expressed regarding the relationship of documentation with librarianship and activities like bibliography, there is near unanimity as to what constitutes documentation services and activities. The term "documentation" was accepted in most of the countries by the middle of this century.

Since fifties many technological developments, have influenced many documentation activities. Developments in the field of reprography have considerably facilitated document delivery services. Further the introduction of computers in library and information fields has brought about a revolutionary change in the documentation scene.

After the Second World War, the UNESCO has established Documentation Division and there has been a further spread of the term in different countries through the various activities of the division. Due to this a number of documentation centres were established with assistance of Unesco during 1950-1960. Some of them are INSDOC (Indian National Scientific Documentation Center), PANSDOC (Pakistan National Scientific Documentation Center) and THAIDOC (Thailand Documentation Center).

In India the provision of documentation and information services were felt only after the country attained independences. Some organizations, such as Universities, Research Laboratories, Forest Research Institute, Central Board of Irrigation, National Institute of Science of India (now INSA). The Indian Standard Institution Subcommittee on Documentation, which were already functioning, took interest in the promotion of documentation activity in India before independence . It was only after the independence and with the establishment of INSDOC in 1952 documentation and information services in the modern sense began to take shape. Dr. S.R. Ranganathan was largely responsible for the development of documentation in India.

10.3 TECHNIQUES OF DOCUMENTATION

It is not possible to any researcher or user to keep abreast of all the literature published in his/her specific subject field due to proliferation of documents and due to explosion of knowledge. To keep track of these documents and to keep the reader informed, various tools and techniques have been evolved. Indexing and Abstracting are the two major important document analysis tools/techniques.

The aim of Indexing technique to represent document by their subject content. The purpose of indexing is to provide a key to the user to gaining access to the vast store of knowledge contained in documents.. Besides specifying subject content of the documents, they also work as a retrieval tool. **Chain Indexing, PRECIS, POI'SI, Uniterm and KWIC** are some of the main Indexing tools.Hence, in view of the importance of these indexing techniques it has been discussed in detail in BLISc Course - 4 : Library Cataloguing Theory.

10.4 ABSTRACTING - DEFINITION, PURPOSE AND TYPES OF ABSTRACTS

The most popular way of representing information contained in a document is abstracting technique. Abstracting is nothing but a gist of original document. It helps the user to understand the subject of document very quickly and the user can able to decide whether to read the original article or not.

Definitions

Ranganathan defined an abstract as "the summary of the essential contents of a work, usually an article in a periodical, together with the specification of its locus, that is its place of occurrence."

According to Ashworth, abstract is "a précis of information coupled with references for tracing; It is now usually refers to the information contained in an article of a periodical".

Therefore, an abstract is an abbreviated representation or gist of a publication or article accompanied by adequate bibliographical description to help users to trace the publication or the document.

Words which give similar meaning are: Extract, Summary, Abridgement etc., An extract is one or more portions of a document selected to represent the whole document. A summary is a restatement of the salient findings and conclusions of the document. Abridgement, Précis, Paraphrase, Digest and Synopsis are the other terms used closely with the term Abstract.

Purpose of Abstracts

The main purpose of an abstract is to aid the reader in assessing the contents of a document and their potential relevance. The document may be a report, journal article, thesis, patent, paper contributed in a conference, standard, letter, etc.

Abstracts help in document selection and information gathering, Abstract help in avoiding duplication of research and delay in research progress. Prior to reading the original document, abstract help to understand the subject matter of the document.

Abstracts are the cornerstone of secondary publications. Today the large computer based bibliographic databases associated with abstracting and indexing services also use abstracts as their chief means of document representation. They are more valuable in retrospective searching than the current awareness tools. Abstracts help in assessing the relevance of the document to the problem on hand.

By digesting information on behalf of the user and making his information gathering more efficient the abstractor aims at making significant impact upon research and decision making.

Abstracts provide subject content of a document in other/ foreign languages. So they help the reader to cross language barriers.

With the help of abstracts, indexes, bibliographies and reviews are compiled.

Some of the factors affecting the effectiveness of abstracts are :

Length of abstract;

Orientation of abstracting;

Quality of abstracting;

Nature of the original document.

For example all the ideas of a foreign language document may not be represented in the abstract translated to English language.

The Abstract writer or Abstractor

Abstracts are prepared for different purposes, in different styles by different people. Selection of abstractor depends upon the nature of the organization and the purpose for which abstract is prepared and their information resources. Abstracts could be prepared in the following ways:

- i) **Author Abstract:** Synopses are prepared by the author, usually at the time of the publication of the original document. Author abstracts can vary in quality. Also an author abstract is unlikely to be tailored specially to the interest of an organization's clientele.
- ii) **Specialist Abstract:** These are prepared by subject specialists who are peers in their own field of specialization.
- iii) **Professional :** Professional abstracts are prepared by professionals or freelance abstractors, who have general subject background and considerable expertise in abstracting.
- iv) **Librarian/Information officer :** In addition to performing their routine duties, a librarian or information officer may some times to prepare an abstract on demand

TYPES OF ABSTRACTS

1. Informative abstracts : These abstracts present maximum quantitative or qualitative information contained in a document and acts as a substitute for the original document. They provide clear condensation of the essential arguments and findings of the original. These abstracts tend to be lengthier than other abstracts varying from 250 to 500 words. In these abstracts the nature and scope of the problem, the objectives of the investigation, methodology, the major conclusions, results or findings and recommendation are presented.

2. Indicative abstracts In indicative abstract, the content of an article, and general statements about the document are included. These can be written quickly and economically and requires less perception and subject expertise on the part of the abstractor. Total content of the article is not found in these abstracts. Its use and value are more limited than those of an informative abstract.

3. Critical abstracts : These are not common, but are useful to the readers in some aspect. A well prepared critical abstract describes the document content, as well as evaluates the work and its presentation. A critical abstract normally indicates the depth and extent of the work commenting on the adequacy of experimentation and survey methodology, etc. Critical abstracts are especially effective in pinpointing documents of exceptional interest.

4. Annotations : They can be called very brief abstracts. They only amplify the title and basically an expansion of the information given in the bibliographic citation. They present only a little analysis, and are quick to produce. As such, they are particularly important where current information is sought.

5. Telegraphic abstracts: The telegraphic abstract is written in a telegraphic style, and was originally meant for computer processing. They present information in an exceptionally concise form.

6. Slanted abstracts These are oriented towards the interest of particular users. Such abstracts are particularly useful in an in-house abstracting bulletin for a particular group of audience, concerning a specific branch of knowledge.

7. Statistical, tabular and numerical abstracts : These are useful for providing economical, social and marketing data. In these abstracts, data collected from original statistical tables, or graphical presentations are summarized and presented in an abstract form

8) Data type abstracts: In these abstracts, usually scientific information is provided in a semi-tabular form. For example, in the abstracts developed by the Nuclear Data Group of the National Research Council, Washington, the name of the nucleus, its category, and the new data, information about how the experiment is done, list of references are given.

9. Graphic abstracts: These abstracts make use of the molecular and structural formulae in the field of Chemistry. Instead of naming the substances and compounds and their treatments. *Current Abstracts of Chemistry* and the *Index Chemicus* make extensive use of this type of abstracts.

10. Auto abstract : It is prepared with the help of a computer. The process is based on the frequency of the use of significant words in a document. The computer produced auto abstract is a collection of typical sentences from the original document.

10.5 ABSTRACTING PROCEDURE

To prepare a good abstract, a trained abstractor needs proper planning and follow the under mentioned steps.

Steps in Abstracting

Step 1 : Understand the Document: To understand the subject and scope of the document it should be read quickly, not thoroughly.

Step 2 : Make Notes: Note down main points discussed in the document. Step 1 and 2 may be completed simultaneously or step 2 may be conducted during a re-reading of the document.

Step 3 : Prepare a rough draft: A rough draft should be prepared from notes recorded in step 2. It is important not to transfer verbose words or phrases from the original.

Step 4 : Check it for accuracy: The draft abstract should be checked for punctuation, spelling, accuracy, omissions and conciseness. When all necessary amendments have been made, edit the draft abstract to improve the style.

Step 5 : Preparing the final abstract: Write the final abstract.

Style and Content of Abstracts

One cannot fix appropriate standards for preparing abstracts, as to their style, content, length etc. These components must be tailored to the nature of the original document, the anticipated use of the abstract, and the resources of the abstracting agency. The first set of components, which need to be considered relate to the nature of the original document. Some of the more prominent of these are

- i) Original documents' length and scope.
- ii) Original documents' Subject;
- iii) Original documents' language;
- iv) Availability of the original document;
- v) Author's style and emphasis.

Anticipated use of the abstract and the requirements of its users are also two factors that influence the decision of length, style etc. Two points which are important are the following ;

1. The needs of users and their preferences regarding their choice of brief or longer abstract.
2. Abstracts user as alerting devices may be shorter in length (typically 80 to 100 words) than the longer abstracts (400 to 500 words), which are used for reference purpose.

Lastly, the style, length and contents of an abstract, depend up on the resources of the abstracting agency. The following factors may be taken into consideration:

- i) **Efficiency of the abstracting staff:** The staff should possess some qualities, such as proficiency in preparation of abstracts, subject knowledge etc.
- ii) for the production of abstracts, budgetary considerations are likely to be a factor in determining the amount of abstracting time and the number of abstractors to be employed.
- iii) Internal or external agencies may set guidelines restricting the length and content of abstracts, or prescribe stylistic features.

Each abstracting organisation must consider many factors before setting upon a specific abstracting format and style. Organization employing a large team of abstractors will normally abide by a set of abstracting guidelines which impose some standardization with respect to style and content. Smaller organizations may also recognize certain standards, but may not necessarily have any formal written guidelines. However, there are some features of abstracting style and approach which are good to observe irrespective of circumstances.

GUIDELINES FOR ABSTRACTING

Brevity, clarity and relevant subject expressiveness in the abstract is very important. Brevity is more important. The abstract should convey the maximum quantity of information using the minimum number of words. In pursuing brevity, however, care must be exercised to avoid ambiguity.

- i) The abstractor must resist the temptation to use long sentences in striving to avoid repetition. Flow and readability should not be sacrificed to brevity.
- ii) An abstract often starts with a topic or lead sentence. The first sentence attempts to summarize any essential information that is not conveyed by the title.

- iii) All abstracts, barring those of exceptional length, should consist of one paragraph only. This should be a coherent paragraph, not a series of disjointed sentences. All sentences should be complete and verbs, prepositions and articles should not be omitted. Separate paragraphs may be introduced for long documents like theses, reports, etc., where different topics are introduced..
- iv) Terms with unclear meaning, or ambiguous words should be avoided.
- v) Redundant phrases should be avoided.
- vi) Style and order of ideas should reflect that of the author, unless there are sound grounds for modification.

A good abstract it must convey the subject content of the original document. Author's emphasis, priorities order and language should be reflected in the abstract. The abstractor should not put his own, or biased ideas.

Tips for Abstractors :

The following points should be kept in mind while writing an abstract:

The abstract should be written in fluent, easy-to-read prose. Simplicity and general understandability is important.

1. Be exact, concise and unambiguous. Avoid general statements where you can be specific.
2. Condense, but as a general rule, do not personally interpret the author's remarks.
3. Be consistent in tone and emphasis as in the document being abstracted.
4. Use short sentences, but with some variety in length and structure to avoid monotony.
5. Use generally complete sentences, except when supplying the last, bits of descriptive information.
Place general statements, where needed toward the end of the abstract.
6. Use active –voice instead of passive voice.
7. Avoid over using and awkward omission of articles.
8. Use past tense to describe the specific activities.
9. Use short, simple, familiar words.
10. Avoid trade jargon and colloquialisms to the extent possible.
11. Abbreviations commonly understood or easily Intelligible in the context may be used.
12. Use standard nomenclature. Unfamiliar terms, abbreviations, and symbols should
13. be defined when for the first time they occur in the abstract.
14. When using abbreviations for units in combination with a number, omit periods and write the number as a numeral e.g. 3ft 1 50 yd.
15. Since brevity is the essence of abstracting, both verbosity and redundancy should be avoided. Some verbose expressions,, which are commonly used, and the corresponding concise expressions are given below:

Verbose

A great deal of
A large number of
By means of
Despite the fact that
Due to the fact that

Concise

Much
Many :
By, with
Although
Because

For the purpose of	For, to
In a similar manner	Similarly
In order to	To
In the event of	If
In view of the fact that	Since
It appears that	Apparently
Led to the production of	Gave
On account of	Because

10.6 SELF ASSESSMENT QUESTIONS

- 1 Define Documentation-and explain its facets and techniques,
- 2 Explain the various abstracting techniques
- 3 Explain the types of abstracts
4. Write short notes on
 - a. Guidelines for abstracting
 - b. Documentation service

10.7 SUGGESTED READINGS

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LESSON 11

INDEXING AND ABSTRACTING SERVICES

AIMS AND OBJECTIVES

This Lesson introduces you to two most widely used services, viz., Indexing and Abstracting

Services. The indexing service helps the user in locating a document in a particular subject of interest and the abstracting service, in addition to locating the document, aids in selecting the relevant document for further study through its abstracts.

After studying this Lesson you will be able to--

- discuss the need and purpose of the abstracting and indexing services; highlight the historical development of these services; organise these services whenever the situation warrants; and
- describe the scope, coverage and functions of some existing abstracting and indexing services.

Structure

- 11.1 Introduction**
- 11.2 Need and Purpose of Indexing and Abstracting Services**
- 11.3 Development of Indexing and Abstracting Services**
- 11.4 Planning and Organising the Services**
- 11.5 Major Indexing and Abstracting Services**
- 11.6 Self Assessment questions**
- 11.7 Suggested Readings**

11.1 INTRODUCTION

The two important tools of dissemination of information are Indexing and Abstracting services of literature being published have the demand for such services for locating information is due to continuous increase in user population and volume of literature produced. Through out world there are about 2500 of such services in operation in different subject fields. These services provide complete bibliographical details of original document. They also facilitate retrospective search, the preparation of subject bibliographies and the identifying of the documents to be translated.

11.2 NEED AND PURPOSE OF ABSTRACTING AND INDEXING SERVICES

Due to the increasing time gap between the author/ producer of information and its consumer/user, an urgent need of abstracting and indexing services was felt.

The contributing factors to need for abstracting/indexing services are:

- i) Enormous increase in the output of research
- ii) Number of primary literature publications have increased
- iii) Scattering and seepage of information
- iv) Geographical barrier
- v) Language barrier
- vi) Different types of documents published

- vii) Obsolescence of information, and
- viii) Increasing number of user population.

Let us examine in detail these factors which influence, to a great extent, the publication of secondary services.

i) Enormous increase in the output of research

Number of research institutes have increased after Second World War. As a result many new subjects like electronics, biotechnology, biomedical engineering, etc., have developed. Due to increase of research activities, publications and use of new information have increased, which in turn has facilitated new developments. In this cycle of research and development, information is required by the user on a continuous basis. The indexing and abstracting services fulfill this need.

ii Number of primary literature publications have increased

Phenomenal proliferation of primary literature was the result of increase in the research activity. According to one estimate the number of primary periodicals has gone up to 26,000 in science and technology alone. A research scientist was not able to find information on a very narrow research topic. Therefore at least an announcement service about the availability of updated and latest information was urgent need of the hour to the researcher and thus the indexing and abstracting services have come to be organised.

iii) Information Seepage and Scattering

The nature of information is, dynamic, ever growing and scattered. A research scientist has to search different sources to gather his/her information. Some times the information sought by the researcher might have been published in an unknown source, ex. Grey literature. Such a phenomenon is called 'seepage of information'. The function of a good indexing and abstracting service is to sort out these problems.

iv) Political boundaries, and Geographical distance as Barrier

Documents are being published world wide. Because of geographical distance and political boundaries, some times information about the status of document may not be available to the research scholars. With the help of Indexing and Abstracting services the availability of publications world over is possible.

v) Language barrier

According to some estimates only about 50 per cent of the literature is produced in English language. The other 50 per cent of literature will be missed by the users who do not know any language other than English. These abstracting and indexing services could bring to the notice of the users the production of such literature.

vi) Variety in Publications

Variety of documents like periodicals, reports, standards, specifications, patents, pamphlets, and microforms, etc. publish different types of information. A single individual or a library can not collect all these types of documents. The indexing and abstracting periodicals can help the user to identify the various types of published documents containing the required information.

vii) Obsolescence of Information

By the time information contained in the documents reaches the user through normal channels such as publishers, book sellers, it becomes outdated. To make the process quick, the abstracting and indexing services will help to a great extent by providing the original or at least a photocopy of the document. Through them the right information will reach the user in right time before the information gets obsolete.

viii) Growth of user population

The need and demand for information, particularly in science and technology fields has increased tremendously. To cater to the needs of such a large population there must be some efficient dissemination mechanism. Indexing and abstracting services try to keep the users in touch with current information.

11.3 DEVELOPMENT OF INDEXING AND ABSTRACTING SERVICES.

Abstracting and Indexing services are not new. In ancient period, abstracts of plays and historical works contained in papyrus rolls have been found in Alexandria Library. The concept of modern abstracting service was recognized from 19th century. Some important services started in this period, such as Engineering Index (1864), Science Abstracts (1898) are still being continued, and many new journals have been added, such as *Chemical Abstracts* (1907), *Biological Abstracts* (1926), *Mathematical Reviews* (1940), *Referativnyi Zhurnal* (1954), etc.,

The first alphabetical subject index was *Apothegmate*, a list of sayings of various Greek fathers on certain theological topics. The first scientific approach to publishing the catalogue of scientific papers was made by the Royal Society of London. During the 19th century *Zoological Record* (1864) and *Index Medicus* (1879) the notable indexing services were started. There are a number of such services now in print such as *Current Technology Index* (1962), *Current Index to Scientific and Technical Literature* (1967).

11.4 PLANNING AND ORGANISING THE ABSTRACTING AND INDEXING SERVICES

Abstracting and Indexing (A & I) Services are being organised at global, national and regional levels. Each Abstracting and Indexing service differ in its nature and scope at different level. Due to difference in their scope and coverage a national journal may not be helpful to local users. This gap has to be filled in at the local level. To fill the gap at local level, the documentation center / documentalists is expected to offer such services.

Certain obligations have to be fulfilled by the documentalists, before planning an indexing or abstracting service as shown below:

- Information resources should be fully exploited based on the scope and coverage of service.
- Type, of information to be covered in the service is to be decided - by type, by subject and by level of the users;
- In order to cope with the new service in terms of documents, personnel and financial resources, an overall information system has to be developed.
- On the basis of feed back, which is built in feature, the information system should be monitored and up dated.

The documentalists should start offering the need based services at local level, after

after ascertaining about all the aspects of the above mentioned requirements

Usually the abstracting or indexing service will have two parts: 1. Classified 2. Alphabetical.

1. **The classified part:** It gives bibliographic description of the original document subject heading, class number and serial number and an indicative abstract (in the case of an abstracting journal).

2. **The alphabetical part:** It provides key word index and an author index.

Preparation of Abstracting & Indexing Services

The actual preparation of these two parts of the indexing or abstracting periodical involves the following steps:

- i. **Selection of Documents:** For the purpose of coverage by language, by type, by subject, etc
- ii. **Selection of Documents:** For relevancy in regard to the publication by scanning the source document;
- iii. **Preparation of Entry slips:** Noting down the bibliographic details of the document to be included in the publication on a separate standard slip called 'entry';
- iv. **Preparation of an abstract:** An abstract of the text of the document has to be prepared in the case of an abstracting service;
- v. **Assigning subject headings:** Identifying subject headings and standardising them with the help of vocabulary controls such as subject heading lists and thesauri;
- vi. **Classifying entries:** Classifying the entries by following a standard classification scheme;
- vii. **Arrangement of entries:** Arranging the entries in the classified order and in each class, alphabetically by author;
- viii. **Assigning Serial number:** Serial number has to be assigned to each entry after preparing the *see* and *see also* entries;
- ix. **Index Preparation:** Alphabetical subject and author indexes should be prepared; and
- x. **Publishing the periodical:** Publishing the indexing or abstracting periodical for the benefit of users.

The preparation and publication of an Abstracting and Indexing periodical involves considerable effort, time and skill on the part of the abstractor/ information ceter. It is highly technical and requires the services of subject specialists trained in the documentation field.

The above services function as:

- carriers of published current information;
- tools for retrospective searches through their periodical cumulations;
- sources for the preparation of subject bibliographies;
- facilitators for the selection of documents for photocopying and translation.

11.5 MAJOR INDEXING AND ABSTRACTING SERVICES

The user is benefited by various types of abstracting and indexing journals. There are more than 2500 such journals regularly published in different fields ranging from Psychology to Technology.

The following important journals are examined in respect of their coverage, scope etc.,

(i) Current Technology Index (1962)

This is a monthly index which provides subject and author access to periodical literature published in English language. The subject covered are, general technology, engineering and related topics. It was started in 1962 and published by the Library Association Publishing Limited, London. It covers 350 periodical titles published in the United Kingdom. It is also available on microfilm and magnetic tape.

In the main part Entries are arranged in the classified order. Each issue provides an author index and a source list. A typical entry includes article title, sub-title, author's name, journal title, and volume, issue and page numbers.

(ii) Education Index (1929)

Education Index was started in 1929 by H.W. Wilson Company, New York. It is a monthly subject and author index to English language educational publications. It covers education, including preschool, elementary, secondary, higher and adult education, vocational education, audiovisual education, comparative and internal education, etc. Periodicals indexed are selected from a master list of suggested titles by the users. A list of periodicals scanned with full details concerning them is included in each issue. The main section consists alphabetical entries, and these are arranged according to article title under different subject headings and author names appear in a single alphabetic sequence. A typical entry includes article title, author's name, indication of bibliography and illustrations, journal's title abbreviation, series, volume and page numbers and date.

(iii) Humanities Index (1974)

Humanities Index was started in 1974, and published by H.W. Wilson Company, New York. This is a quarterly subject and author index to current English language periodical literature covering, various topics in the field of Humanities. The subscribers have liberty to select periodicals covered by this Index. The subject coverage includes Humanities, Archeology, and Classical Studies, Area studies, Folklore, History, Language and literature, Literary and political criticism. Performing Arts, Philosophy, Religion and Theology and related subjects. More than 250 periodical titles are scanned for the index and each issue of index gives the details of the periodicals scanned.

The main section consists alphabetical entries, and these are arranged alphabetically by article title under author's names, and subject headings appearing in a single alphabetical sequence. Each entry includes article's title, author's name, indication of bibliography and illustrations, journal's title abbreviation, volume number, page number and date.

(i v) Index Medicus (1879)

Index Medicus is very important and oldest indexes in the medical and allied field. It was started in 1879, and it is a monthly publication, published by the US National Library of Medicine. The index covers periodical literature published all over the world in all languages.

The subjects covered are medicine, life sciences and other health related topics. An abridged *Index Medicus* and an annual cumulation - *Cumulated Index Medicus* - are also published. The *Index Medicus* is also available as on-line database. It uses the US National Library of Medicine's *Medical Subject*

MeSH: Medical Subject Headings for indexes.

The Medical Subject Heading entries in the main section are arranged alphabetically by journal's titles under specific alphabetical subject headings and sub-divisions. The titles of English language journal appear at the beginning of the Heading. Each issue has 2000 entries and is cumulated annually. The index is produced from a computerized MEDLARS system. MEDLINE, the online version of the index, is searchable through the National Library of Medicine, DIALOG Information Services Inc. and Bibliographic Retrieval Services Inc.

(v) Biological Abstracts (1925)

Biological Abstracts are published by Bio-Sciences Information Service, Philadelphia since 1925. It is being published every fortnight and reports summaries and indexes of research reports, reviews, papers and books on biology and biomedicine. Periodical and other literatures published all over the world is covered. In the main section entries are arranged by entry number under 84 alphabetical subject headings. Each issue includes author index, bio-systematic index, generic index, concept index and subject index.

Each entry includes entry number, author's name and his institutional affiliation and address, as also article's title, journal's title abbreviation, and volume, issue and page numbers, year of publication, original language, if it is other than English. It gives more than 7300 abstracts in each issue and is cumulated semi-annually. These abstracts are also available on-line as part of BIOSIS PREVIEWS covering Life Science literature since 1969.

(vi) Chemical Abstracts (1907)

Chemical Abstracts is a weekly publication, available in print or microform, containing abstracts, bibliographic headings and indexes of the world's chemical literature. This is published by Chemical Abstracts Service (CAS), a division of American Chemical Society. It covers approximately 10,000 periodicals published in about 150 countries in more than 50 languages. It's also includes patent documents issued by 29 patent offices all over the world, technical reports, dissertations, conference proceedings and new books on chemistry. Approximately 5,00,000 documents are selected for abstracting each year from leading chemical, physics, medical, biological and other technical journals. In Chemical Abstracts, we find references of more than 1,47,00,000 documents. The abstracts provide concise summaries of the information contained in original documents, substances, procedures, equipment, author's names to help to determine whether or not one needs to consult the original document. These abstracts give complete bibliographic data, patent references, chemical structure, chemical substance names, etc. Each issue gives keyword, author and subject indexes. In addition to these CA also produces general subject index, chemical substance index, formula index and ring index.

Abstracts in the main section are "arranged by entry under 80 section headings within five broad subject categories. The indexes are cumulated every six months and the volume indexes are cumulated every five years. Photocopies or loans of original documents cited in CA are available on payment of the fees from CA's document delivery service. Chemical Abstracts information is accessible through various world-wide on-line services.

(vii) Devindex Africa: Index to Literature on Economic and Social Development in Africa (1980)

This publication is published by Pan-African Documentation and Information System under United Nations Economic Commission for Africa from Addis Ababa, Ethiopia. It is a quarterly publication Abstracts and indexes of selected English and French language documents published by the UN Economic Commission for Africa (ECA) on topics of economic and social development in Africa are provided in this abstracts. It is available as a printed publication, in microform and also as a machine readable data base. It scans 400 periodicals, 600 reports per year and proceedings and other ECA publications. The main section of the abstract, entries are arranged by geographic region under sub-topics within seven subject categories. Each issue also includes English language subject indexes, French language subject indexes, French and English-language geographical index, Bilingual French and English Institution index. Photocopies of all the documents referred are available.

(viii) Engineering Index (1884)

This abstracting and indexing journal is being published by Engineering Information Inc., of New York. This is a monthly publication All Engineering disciplines are covered by this index. About 2000 periodicals, 1000 proceedings, books, reports and standards published from 50 countries in 15 languages are covered. In the main section entries are arranged by entry number under specific alphabetical Subject Headings for Engineering (SHE) with sub-topics. Each issue also includes author index, a list of conference publications covered, a list of acronyms and abbreviations of organisation names.

A typical entry presents complete bibliographical data and is cumulated annually. The information from EI Annual is included in the COMPENDEX database and is widely available on-line.

(ix) Environment Abstracts (1971)

It is published by E I C/ Intelligence, New York. It is a monthly abstracting and indexing journal which provides coverage of international English language literature relating to environment It scans periodicals, reports, proceedings and other literature published the world over, and is available as printed publication, magnetic tape and on-line.

The journal covers air pollution, chemical and biological contamination, energy, environmental education, environment design and urban ecology, food and drugs, noise pollution, renewable resources, water pollution, etc.

Entries in the main section are arranged by entry number within 21 subject categories. Each issue also includes subject index, author index, source index and industry index. Each entry gives full bibliographic description of the source document along with an abstract. The information of EA is available on-line through DIALOG Information Service, Inc., and System Development Corporation (SDC).

(x) Excerpta Medica (1947)

Excerpta Medica is published ten times a year from Amsterdam, Netherlands. An abstracting and indexing journal in 46 parts published separately under different main subject headings of medicine and related topics, Excerpta Medica scans 3500 biomedical, pharmaceutical and chemical periodical titles. Abstracts in the main section are arranged by major topics. Each issue also includes a subject index and author index.

A typical entry includes entry number, article title in English, abbreviation for original language, article title in original language, author's name and address, journal title abbreviation, year of publication, and volume, issue and page numbers, language of article, summary and abstract in English. Subject classification is based on EMCLAB and the Excerpta Medica uses the *Master List of Medical Indexing Terms* (MALIMET)

Information from the journal is searchable on-line as part of the Excerpta Medica database (EM BASE) which is accessible through DIALOG Information Service, inc., Data Star and others.

(xi) Indian Science Abstracts (1965)

It is published by the Indian National Scientific Documentation Centre, New Delhi. It is published monthly and it reports original scientific research work published in Indian journals including short communications, research work by Indian scientists published in foreign journals, reviews, conference proceedings, seminars, symposia held in India, Indian patents, standards, monographs and ad hoc scientific reports from Indian scientific research institutions.

Entries are grouped according to the UDC and are arranged under appropriate headings alphabetically by the author's name. Entries are serially numbered. Each entry includes author's name, title, followed by language symbol, if the article is in a language other than English and locus followed by abstract and initials of abstractors. Each issue provides author and keyword index.

(xii) Sociological Abstracts (1953)

Sociological Abstracts is an abstracting and indexing journal, and published by Sociological Abstracts Inc., from San Diego, CA. World literature in Sociology and related disciplines is covered in this abstract. *International Review of Publications in Sociology*, a supplement, is also included in each issue comprising a bibliography of book reviews appearing in the journals abstracted. The journal covers periodical titles, books and also conference proceedings.

In the main part the entries are arranged alphabetically by author under sub-topics within 31 subject categories. Each issue includes subject and source indexes. Each entry includes entry number, author's name, author's affiliation and address, article title in original language and English journal title, year of publication, and volume, issue and page numbers, issue date, language code, if other than English, the number of illustrations and an abstract

This is issued five times a year. Indexes are cumulated annually and issued separately. Sociological Abstracts database is available on-line through DIALOG and Bibliographical Retrieval Services, Inc.

11.6 SELF ASSESSMENT QUESTIONS

1. Explain the need and purpose of indexing and abstracting services in libraries and information centers.
2. Write an essay in indexing and abstracting services.
3. Write short notes on :
 - a. Chemical Abstracts
 - b. Index India
 - c. Indian Science Abstracts

11.7 SUGGESTED READINGS

- i) GUHA, B. (ed.) */// the Library and information Science Horizon*. New Delhi: Allied, 1986.
- ii) ROWLY, J.H. and TURNER, E.M.D. *77?^ Dissemination of Information*. Delhi: Clarion Books. 1979.
- iii) SCHMITTROTH, .1. (ed.). *Abstracting and Indexing Services Directory*. Detroit: Gale Research Company 1983.

LESSON 12

CURRENT AWARENESS SERVICE (CAS) AND SELECTIVE DISSEMINATION OF SERVICE (SDI)

AIMS AND OBJECTIVES

This Lesson describes in detail two very important documentation services - Current Awareness Service (CAS) and Selective Dissemination of Information (SDI). On perusal of this unit you should be able to:

- explain why modern libraries and information centres need to generate current awareness service and selective dissemination of information service; and
- discuss the various features of these services to enable future library professionals get an idea how the services could be generated.

Structure

- 12.1 Introduction**
- 12.2 User's approaches to Information**
- 12.3 Current Awareness service**
- 12.4 Selective Dissemination of Information**
- 12.5 Self Assessment Questions**
- 12.6 Suggested Readings**

12.1 INTRODUCTION

For success and development of a nation or an individual, information is considered to be one of the most vital resources. Knowledge of new developments and latest information in a specific subject field of a user has become one of the prerequisites for one's success. People working in various capacities, and involved in various activities and professions need to update their knowledge, to take right decision at the right time. Due to personal interest, and to keep himself abreast of the new developments in his interested areas of subject, users constantly seek information. Literature published or unpublished in various forms is one of the primary sources of information. The primary responsibility of libraries and information is to identify, collect, and organise a wide variety of information resources. Besides maintaining and enriching these vast resources the libraries and information centers also ensure that these resources are optimally utilized by their users. To ensure this, there is a need to design and develop appropriate information systems and services. By introducing current awareness service in libraries / information centres, users can get their required information in their areas of activity regularly.

12.2 USER'S APPROACHES TO INFORMATION

It is essential to examine the types of information needs and the user's approaches to information before going through the aspects like the need, characteristics, and planning of current awareness services.

A user's information need often depends on the purpose for which he is seeking information. A user may seek information on any aspects, such as “melting point of a chemical”, “population of China”, “or the address of an organisation”. Such approach for information is called as “every day approach”. Some times a user may require a comprehensive data, for example, before initiating a project the user may like to do a comprehensive survey of literature on the topic of the project. Yet another time, having confronted a problem, the user may like to examine all the literature discussing the problem. Such an approach is termed “Exhaustive approach”. Besides these two approaches, a user may be interested in keeping himself abreast of new developments, new methods, new technologies, new theories, in his area of activity. This will help the user to update his knowledge as well as come across items of information which may give him useful insights, or help him modify his strategies. Such an approach is termed 'Current Approach'. Current awareness services attempt to satisfy the 'Current approach' of the users.

Due to explosion of information, the out put of documents increase enormously, and appearance of variety forms of documents such as books, periodicals, reports, patents, theses and information sources available on magnetic media make it extremely difficult for the user to keep track of the new developments reported in the literature. First, the libraries / information centres should ensure that information contained in the vast information sources could be put to effective and timely use and secondly to disseminate quickly the information on new developments instead of waiting for the user to personally discover it. Several channels are being used by any professional for getting informed about new developments, which include meetings with the peers at conferences and professional gathering, and personal scanning of literature. He may scan few core journals in his area and may miss several useful items published in journals belonging to other areas. This happens due to the adoption of interdisciplinary approaches to the study of subjects on an increasing scale. The majority of the users do not have adequate time to personally scan the literature and find useful material Therefore, libraries and information centres should help minimize the time spent by the user for finding his information on his own. They should study and understand their user's needs, identify the relevant sources, and inform the user latest developments in his field of study periodically, so that his time is optimally utilized.

12.3 CURRENT AWARENESS SERVICES

The important characteristics of current awareness service:

Alerting the user: Current Awareness Service try to alert the users as regards the recent developments in their areas of interest as quickly as possible;

Browsing Tool: Though this service is not expected to provide answers to specific queries; it serve as a browsing tool to help the user to get an idea of what is new in his fields of interest

As Abstract & Digest: The service could also include an abstract describing the contents of each time. Sometimes a digest of new developments written by professionals may be published as a newsletter.

Planning Current Awareness Service

While designing a current awareness the following factors need to be considered:

Target Users:

The service providers should take into consideration the needs of the target users or the user groups;

Type of documents

To decide the type of documents covered, such as periodicals, patents and reports, and the degree of details that could be included in respect of each item;

Periodicity of service

The periodicity of service, the layout and the presentation of the degree of detail to be included in respect of each item has to be decided after assessing the priorities, the volume of input to be processed, the number of professionals available for generating the service. Though one of the aims of the Current Awareness Services is to inform quickly another aspect is that he should have adequate information to be able to assess the usefulness of the item of him.

NEED FOR CURRENT AWARENESS SERVICE

The basic need for current awareness service has been the amount of new information available and the clients need/urge for recent and nascent information. The clients, themselves undertake efforts to keep them currently aware. However, a current awareness services can offer additional advantages to their clients, as it assures a better coverage of sources of information and regular and current scanning. By providing current awareness service the information centre may reduce the total effort of the members of the instruction in keeping currently aware. This is well summed up in S.R. Ranganathan's law 'Save the time of the reader'.

The effect of current awareness services on clients also offers benefits to the information centre and its staff. The clients are at least keep aware of the existence of the centre; even more, however, these services have the effect of creating an image of the information centre as an 'active service'. Thus, 'The whole area of reader-library relations, and the image of the centre as a positive and responsive information source, is enhanced by the current awareness services'.

Indeed, the motivation of the staff to provide a current awareness service may be to achieve publicity, because an effective current awareness service is the best publicity for a centre.

The need for current awareness is not a new development; attempts to provide services (however informal or unconscious) probably go back to the earliest libraries. The foundation of the early scientific periodicals is due to the realisation of the need for recent

developments; the increasing number of primary sources, scientists, technologists, scientific and other societies; secondary services; use of computers all may be marked as the developments towards the organisation of current awareness services.

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James Miller, in a paper, has mentioned few factors to be considered which would be worthwhile to discuss here. They are:-

- the rate of technical advance in the fields involved;
- the degree of competition at the research level;
- the level of technical talent required in the service as compared to the level required to execute the research;
- the size of the research team of the organization;
- the homogeneity of its research projects with regard to scientific disciplines; and
- the average size of the project team.

Most of the above factors, though cannot be quantitatively measured, must be estimated and the best balance struck between them. The urgency of such a current awareness service will be determined chiefly by two factors, viz; rate of advance in the field resulting in a voluminous amount of literature and the degree of competition at the research level. The last three factors (d) and (f) – actually determine the economics of such a service. Even if the total size of the team is large, it may so happen that a number of small groups are working in different field and there is hardly any homogeneity in the various research projects. In such a situation, separate efforts by separate groups of information workers, would be essential to provide an efficient current awareness service even be it a costly service.

The one another factor (c) – the level of technical talent-determines the technical feasibility of such a list. To meet the exact requirements of the client (s) the monitoring, selecting, and presenting requires technical talent and service. This again calls upon the provision of current awareness services. Such a service may reduce the total effort and time of the members of the organisation in keeping currently aware.

If all the factors above mentioned are taken into consideration and reviewed from time to time there is no reason why such a service should not be received well by the users of information.

TYPES OF CURRENT AWARENESS SERVICES

The following types of CAS are recognized depending on the contents and layout, :

Contents by Journal Service

Latest information and new developments are communicated through journals. One can browse the latest topics in the content page of a journal issue. It is assumed that the users generally scan a few core journals published in their fields to keep abreast of the new developments. Hence, if the content page of each latest journal is photo copied and distributed among the researchers, it will be useful for them to know the latest information. The advantage of the service is that it can be generated easily and quickly, as it does not involve any intellectual effort.

Current Awareness Bulletin/ List

To prepare Current Awareness Lists, new journals, books etc., are regularly scanned and potentially useful items of information are identified. The essential bibliographic details of the item are recorded. The items dealing with the same area or topic are grouped together. The items are listed in the form of a bulletin. The articles are listed and arranged by broad or narrow subjects. The articles, if classified by subject, can be arranged in a classified order. The arrangement of entries should be searchable easily. An abstract may be included to help the user to assess its utility.

The advantage of this form of service is that it can be tailored to the user's needs through proper selection of relevant items and the slanting of the abstract with the required information.

Research-in-Progress

Knowledge of the research activities being undertaken by others in one's area of interest provides the researcher with valuable information. The information could be useful to the researcher while initiating a new project. Sometimes the project information may also result in changing the course of his research activity.

This service attempts to bring out information on new research projects, and progress made in ongoing projects. The details generally include in such a service are the name and address of the laboratory where the research project is being undertaken : names of the principal and associate researchers, funds and sources of funds, duration of the project, and special equipment in use, if any and a narrative description of the project and its progress. Besides the topic, the information such as the names of researchers and institutions, the names of funding sources would be interest and usefulness to the researcher.

Newspaper Clipping Service

Newspapers themselves function as current awareness tools in the areas of public interest especially politics, business, social information, culture etc. The coverage varies from local, regional, national to international news. Some of the newspapers devoted to specialised topics like business, commerce, economics, finance are of immense value as they carry the latest information and data. These are highly sought after in government departments, financial and business organisations, information contained in newspapers is mostly factual and sometimes transient and hence needs to be disseminated quickly taking minimum time for production.

One of the most popular methods is the organizing of the clippings. Various dailies are scanned and news items of interest to the users are cut out and pasted on to a sheet. The clippings can be arranged broad subject-wise or topic-wise. Though these are some of the types of Current Awareness Services which are popular, new products and services performing the current awareness function could be imaginatively designed and generated based on the choices of the users and the information needs of an organisation.

CAS may be produced in-house i.e. by the library providing them- such as using the reprographic services which are part of the parent organisation. The traditional library bulletin with information about the items received in library in an example. Alternatively, few libraries provide service with external services and publications; as, for example, they are bulk purchase and distribution of copies of Current Contents List; by circulating another library's bulletin; or increasingly by the use of external data bases to provide SDI Services.

Some forms of CAS are manual, while some are mechanized /computerised, and few are of a combination. However, the general present trend is towards the use of external computerized services.

12.4 SELECTIVE DISSEMINATION OF INFORMATION (SDI)

Selective dissemination of information is advanced kind of service directed towards individuals. This is a highly personalized service. The basic concept of SDI consists in matching of the information with the interests of the clientele. SDI is a current awareness service geared towards the individual, unlike CAS which is meant for groups. It is hence, also known as, 'personalized service'. The literature provides consistently a clear definition of SDI, one that resembles the service concept originally conceived by Hans Peters Luhn of the IBM Corporation. The selective dissemination system developed and tested by Hanspeter Luhn at the IBM for personalised information service to serve the IBM for personalized information serve to serve the IBM scientists and engineers fascinated many as a new channel of communication and several information scientists and system analyst began to develop the SDI service as a sub-system of the total information services provided by the information centre. He advanced a detailed description of a means for improving scientific communication through the machine-assisted dissemination of information. The hypothetical system would, ideally, inform users of the existence of new information through the regular provision of bibliographic date. He regarded it as, "that service within an organisation which concern itself with the 'machine-assisted channeling of new items of information, from whatever source, to those points within the organization where the probability of usefulness, in connection with the current work of interests is high". The potential market for such a

service was quickly recognized by IBM corporation and numerous other organisations. In subsequent years there followed a continuous evolution and improvement of Luhn's Business Intelligence system by the industrial and governmental information centers eager to improve their CAS. Later, the provision of such a service has gone well beyond the confines of a single company, though the intent of the concept itself has not appreciably altered. Honsman and Kaskala state that 'the purpose by keeping him continuously informed of new documents published in his areas of specialization so that he can keep abreast of the latest developments. Most applications do adhere closely to the original philosophy. The literature reveals the following: 1) mechanized SDI systems have been able to provide a satisfactory level of current awareness to subscribers, even if, only in a supplementary way; 2) they have not replaced existing information-acquiring habits altogether, although this rare occurrence has been reported; 3) they have not promised to shift all the literature peripheral to a user's central interest; 4) however, they have updated the reviewer regularly and currently from a range of article and documents otherwise beyond his normal search capability and willingness to scan.

CONCEPT OF SDI

Selective Dissemination of Information (SDI) is similar to that of the system for pinpointed, exhaustive and expeditious dissemination (SPEEDS) – the document retrieval system designed and developed by the Indian School of Thought. SPEEDS has a built in capacity of helping the reader in formulating his query with precision and correlating it with the specific subjects of documents.

SDI have by now probably become the most advanced machine-based information service. Progress has been rapid because SDI systems handle relatively small volumes of citations, and have also been able to rely on a continuous stream of new input data for some years now.

However, a single, but significant question arises to be answered-Why did SDI evolve outside the library? Several factors contributed to the extraordinary progress of SDI outside of the library. Firstly, Huhn himself not being a librarian, did not solicit and engage the assistance of librarians to any significant degree. Secondly, Huhn's own desire for distinction led him to publish extensively in professional journals, thereby gaining a wide non-library readership. Moreover, Huhn's personal circle included many influential readers in government and institutions, who promoted the acceptance of his idea into their own organisations. Further, SDI could only be realistically marketed to those commercial and industrial firms financially able to support the essential computer facilities. Finally, the specter of the computer in the library had yet to be recognised, as Luhn's invention was merely the introduction of mechanized improvements to remedy deficiencies inherent in those manual systems. This question has not been fully addressed but surely merits close attention, for the SDI service was not a substantially new concept, but more an extension of conventional library reference service. No matter how ever proposed, its prime objective is not lost sight- 'to minimise the user's efforts in becoming aware of new relevant information'.

Need for SDI Service

The literature output is at present doubling every decade or so. While the volume of recorded information is growing exponentially, the reading time available to an individual

remains more or less the same. This is the major information transfer problem. To tackle this problem a variety of tools in the form of bibliographic aid began to be devised and designed as communication media. Scientists and technologies began to depend more and more on these bibliographic aids for searching what they need to read or refer in pursuit of their scientific investigation and research. SDI service is one of the recent developments in information retrieval (IR) activity for delivering right information to the right people at the right time.

The need for SDI arises out of three fundamental factors, viz., the information sources, information provider/distributors and information users.

Information Sources:

The growing size of the information store adversely affects the information transfer. With the proliferation of information (much greater in science than in non-science subject areas) are the side-effects such as literature scatter, obsolescence, barriers to dissemination, vendors variation in presentation and production standards etc. All these complexities result in the ignorance, non-availability, non-accessibility and thereby non-utility. Hence, lack of channeling of a right piece of information to the right user at the right time. Such a plight calls upon SDI.

Information Providers/Distributors:

There is a corresponding growth in the services. A large number of secondary services, sprung mostly by commercial organizations. This had resulted in a new additional difficulty of time lag experienced in the preparation and assimilation of such vast amounts of bibliographic data and condensed data/abstracts bibliographic data bases supplied in machine-readable form are multiplying faster than they can be metabolized by the information community. The restriction of search methodologies and techniques adds to the user's dismay. The tools and services offered lack a well established service grid, the composition of which is still under-minded. Most of the services do not assure or guarantee the user community to put possibly in touch with all they want to. This again demands for a service like SDI.

Information Users:

The ever-increasing avalanche of information keeps affecting the individual researcher's ability to cope with the total volume of scientific papers. He is overloaded with the information, whose search for a piece of information is similar to that of a search for a needle in the haystack. The information user is further restricted by financial factor and time factor. Neither can he afford to opt for a personal subscription of journals (primary or secondary) nor does he find sufficient time to spend in searching, and locating what he wants. Above all, one impediment to any thing new is fear of the unknown.

In conclusion, it is only too apparent that as long as there are information seeking users anxious to keep up to date in their own special fields, then there will be a long standing and continuous demand for SDI services to meet those clearly identified information needs.

Objectives of SDI Service

The objectives of SDI service are:

- a. All relevant information on subjects of interest to the user which have been received in the information centre must be brought to the notice of the users.
- b. All relevant information published elsewhere in the world (in English and if necessary in other languages) should be located and procured (if possible) through good various information sources and agencies.
- c. No irrelevant document should be notified to the user.
- d. Expeditious service/time saving.

Principles of SDI

The emphasis in SDI is that the interest of each user will have to be studied first and represented in a way which could be easily compared with the contents of the incoming recent documents, for each user a description of his interests called a 'profile' is prepared and recorded in machine readable form. For each new document entering the system a 'document record' is prepared and converted into machine readable form. At regular intervals the new documents entered during the period are compared with profiles. When a record matches a profile, it is recorded as a hit for that profile; details of the hits corresponding to each profile are then printed on the computer and sent to the client whose profile it is.

FLOW OF WORK IN SDI

The flow of work in SDI system is based on two aspects:

- a) Who is interested in what?; and
- b) What the documents in the system are about?

Prior to the discussion of the interaction between the information and the user in the SDI system, it is worthwhile to recall the basic design of the internal interaction of the components of that system. The common feature are as follows:

1. Selection;
2. Preparation of Profiles;
 - 2.1 User Profile (UP) and
 - 2.2 Document Profile (DP);
3. Matching;
4. Notification; and
5. Evaluation.

SELECTION:

Selection here is two-folded. Firstly, selection of those documents on the said specific field of interest by the SDI system and then, selection of specific information need of the clientele of the SDI system. Coupled with this basic selection pattern will be the profile construction.

PREPARATION OF PROFILES:

USER PROFILE (UP): The functional aspect of the SDI system is based upon a profile of interest that truly characterizes the users' interests in the language of the data base, together with the statement of logical conditions required for a match. The quality of the profile and its ability to accurately reflect the users' interests, determines the value of the output of an SDI system. Thus, the formulation of UP involves finding out and collecting through questionnaire to individual all the required background information and the presently involved current activity description.

DOCUMENT PROFILE (DP): DP is that bibliographic data base of that have entered into the SDI system. The incoming documents are analysed and indexed in the same language used in the formulation of UP. It could be a controlled vocabulary (thesaurus) or free-text language, wherein, terms for the DP are collected from titles, abstracts, references, dictionaries, glossaries, indexes and world lists until all synonyms and related terms have been taken care of.

Profile formulation requires two skills; an understanding of the subject coverage; and a familiarity with the system with which the profile will be used. With the natural language indexing and searching system, constraints will be minimised and presumably the user will be in a better position than an expert to describe his interests. Controlled language SDI systems demand that the profiler be more conversant with the system and its peculiarities. However, profiling is indisputably time consuming and the maintenance may well occupy a further time staff member.

MATCHING:

These indexing terms must then be linked by search logic, to match the UP and DP. Two basic types of search logic are available:

- a. Boolean logic; and
- b. Weighted term search.

- (a) A technique of using the most basic conceivable forms of expression to represent any logic possibility the a thing either exists or doesnot exist, is either present or not present etc. It was first developed and codified by the English mathematician G.F.Boole, Hence, known as Boolean logic.

Most operational systems employ the following Boolean logic operators:

AND, placed between two indexing terms, which are required to co-occur for a match;

OR, placed between two terms when the occurrence of one or both will be satisfactory for a match, e.g. Synonyms; and

NOT, placed between two terms where one term is required to occur only in the absence of the other for a match.

- (b) Weighted logic searching can be enlisted when a Boolean logic profile would be overly complex. Weighted searching relies on term weights assigned so

each term as an estimate of the relative probability of each term appearing in a relevant document. After a weighted search, documents are ranked according to their total scores. Those with high scores will contain the highest concentration of significant indexing terms. Items are designed for print-out by either specifying a threshold weight and printing all documents with weights above the threshold or by nominating an output size.

Truncation is another device by which computer will search under any term, with, for example, the stem 'comput' irrespective of word ending. So here the computer will pick out all of those documents containing any of the following words:

Compute
Computed
Computer
Computers
Computes
Computing

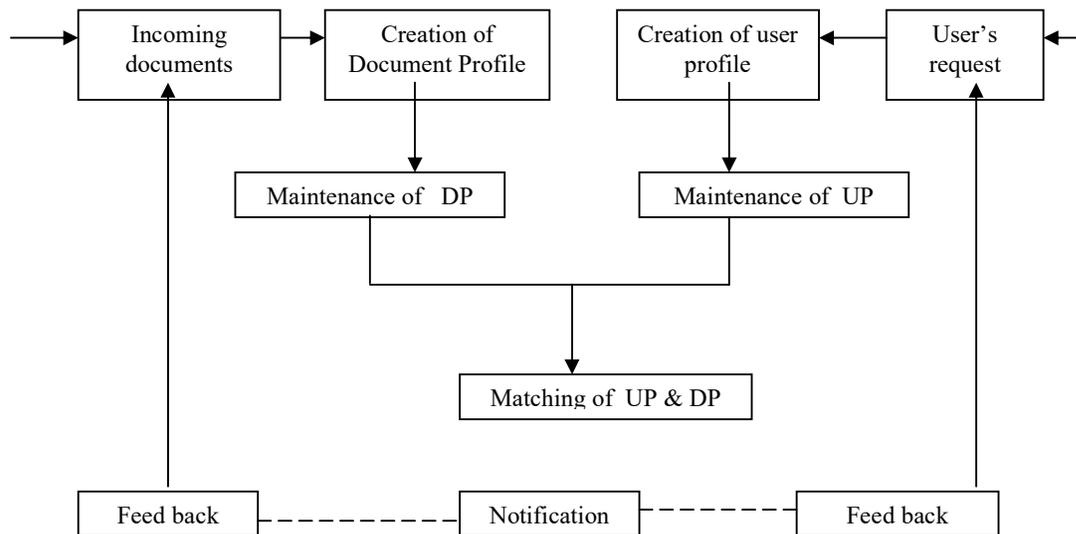
Truncation could be either right-hand (as in the above example) or left hand which has a more specialised application than right hand transation, but is important in chemistry, biology or medicine. Both these may be combined to reduce search times to a minimum. The product of such a search is either 'HIT' or 'MISS'. HIT documents are chosen for notification and if it is a 'MISS', search is continued with modifications.

NOTIFICATION:

Participation in an SDI system results in the subscriber's receiving announcements consisting of the citations matching the requirements of the interest pattern or profile. Usually taking the form of a paper printout and card output, the notification have been known to include reproduced documents, abstracts etc. This notification includes a detachable feedback sheet which describes the level of user's satisfaction of the informed message and even express his demand/request either for the original or a copy of the relevant document.

EVALUATION:

Feedback loop/mechanism is the significant feature of an SDI system, in order to evaluate the performance of the system. Such reactions and responses from users enable the system to raise the precision rate by introducing necessary modifications in the system then and there. The feedback of the recipient should not be restricted merely to the status of the documents brought to his attention, but to the impact of the citation on the subscriber's work. This will help to follow-up, check, and change either the profile or the indexing or searching techniques; wherever applicable.

Figure-1 - Illustrates the typical communications model in an SDI Service Operation

SDI services could be offered in two major patterns, viz, Individual SDI and Group SDI. Individual SDI should provide the user with a regular relevant announcement of documents specifically of interest to him. Pricing policies vary. Costs of SDI for an individual user often seem possibly high. Group SDI may be diverted to the interests of a group of individuals (e.g.) a research department. Multiple copies may be possibly purchased and distributed to the members of the group. Group SDI cuts the cost of CAS to an individual, while broadening the subject area of which he is kept aware. Depending upon the size of the group, this broader scope may be regarded as a help or hindrance.

12.5 SELF ASSESSMENT QUESTIONS

1. What is current awareness service? Explain various methods of providing CAS in libraries and information centres.
2. What do you understand by Selective Dissamination of Information ? Describe the method of SDI with an illustration.

12.6 SUGGESTED READINGS

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LESSON - 13

LITERATURE SEARCH AND REFERRAL SERVICE

AIMS AND OBJECTIVES

This lesson discusses about the literature search and the referral services. After studying this unit you should be able to:

- Explain why literature searching is necessary and explain the steps involved in literature searching;
- Discuss the meaning, need, prerequisites, and the types of referral services/systems

Structure

- 13.1 Introduction**
- 13.2 Literature Search**
- 13.3 Referral Service**
- 13.4 Self Assessment Questions**
- 13.5 Suggested Readings**

13.1 INTRODUCTION

Since the time literature was considered the primary medium for conveying new thoughts, experiences, observations and analyses, those keen on enriching their knowledge looked forward to accessing literature relevant to them. Scientists and philosophers in the earlier times could even maintain personal collections of relevant literature, and could easily keep in touch with the few institutions and specialists working in the same area. After the Second World War, the increased investments in science and technology resulted in an unprecedented growth of scientific manpower, scientific and technological institutions and advanced research institutions. The increased scientific and research activity and the scientific community's desire to make known their efforts resulted in the exponential growth of literature. The phenomenon is continuing and is no more restricted to science and technology alone. In recent times great emphasis has come to be laid on application of the benefits of scientific advances to the betterment of society as a whole. Much importance is being given to research in social sciences also.

13.2 LITERATURE SEARCH

With the increased interdisciplinary research the information is getting dispersed. The exponential growth of primary literature resulted in a situation in which it has become impossible to keep track of these resources. The secondary sources specialising in a discipline have been considered to be one of the ways of keeping track of what is new in one's field of scholarly interest. There has been a tremendous increase in the types and number of secondary sources also. Several new information sources (Review publications) which analyse and consolidate information in a field of activity have also become

popular. At the same time, several bibliographies, and guides to literature have been published which also serve as useful tools for knowing and selecting new information resources. This brief introduction highlights the dilemma of a librarian/information officer, and gives an idea of the effort he has to put into keep track of the various kinds of information sources, their diversity, the depth and extent of each which enables him to choose the right source to meet a specific information need.

Types of Information Sources

The types of literature can be broadly categorised as primary, secondary and tertiary literatures. Primary literature includes periodical articles, research reports, conference papers, standards, patents, theses and trade literature, Secondary literature includes indexing and abstracting services, reviews of progress, reference books, treatises and textbooks. Tertiary literature includes a bibliography of biographies Union list of periodicals, Guides to literature. Guides to individuals and organizations.

Most of the secondary and tertiary literatures are increasingly becoming available on computer readable media. The emergence of new information products is adding new dimensions to the provision of literature search services to users.

User Needs and Approaches

To satisfy user needs it may be necessary to refer to appropriate primary, secondary or tertiary literature also. First, let us look at the types of user approaches. A user may be interested in knowing what is new in a field -'Current Approach', Knowing an Item of data like the melting point of a chemical 'Everyday Approach'; Knowing the present state of a field - "Catching up Approach"; having a comprehensive list of references on a topic -"Exhaustive Approach'. The "Current Approach' is satisfied by generating appropriate current awareness services. The 'Everyday Approach' is satisfied by providing appropriate reference service. The 'Catching up Approach' is satisfied by providing the information concerning the state of the art publications and review publications in the field concerned.

The 'Exhaustive Approach' is the approach which can be satisfied by methodical literature searching. The purpose for which a user requires a literature search depends on the background in which he is actively involved. An academician may require all the material pertaining to a topic for preparing a reading material, lecture or presentation etc. A researcher may request for a literature search while initiating a project or when confronted with a problem which has arisen while being engaged in his research. An industrial scientist or worker may request for a patent literature search while thinking of patenting an invention, method, etc. Similarly, a manager may be interested in knowing from the literature the ways and means of solving a managerial problem or enhancing productivity, or implementing new methods of organisation. Depending on the type of information needed the appropriate literature has to be identified.

Steps in Literature Search

The following five steps are involved in a literature search: (i) Identification of scope

and purpose of search: (ii) Deciding the search methods and search strategy, (iii) Method of recording references or information and (iv) Presentation of research results.

i) Identification of scope and purpose of search

Before undertaking the search, the purpose for which the search is required needs to be understood. This can be ascertained only after interacting with the user adequately. The next factor which needs to be ascertained from the user is the scope of the literature search. Sometimes the user may say that he is interested in only literature pertaining to Indian conditions. In such cases the scope is geographic in nature. The other options could be selectivity of the type of document, language of primary source, years of publication, type of treatment such as preliminary, detailed theoretical work, practical experiences, case studies, etc. It is always useful to conduct a brief literature search before conducting a full scale search. The references selected after brief searching could be shown to the user concerned to ascertain whether he is satisfied with the selection. A positive response would help carry on the search and a negative response would help in choosing the right search strategy.

ii) Identification of appropriate information sources

This is by far the most crucial part of literature searching. Identify an appropriate source, the librarian/information officer has to be aware of the range of information products/services relevant to the topic, He has to consult the relevant information sources and tools such as guides to literature, encyclopedias .etc. to get a better understanding of the topic. The search is generally initiated at the level of secondary publications because they give a comprehensive coverage as well as give clues to primary publications for examination, initially, the secondary source which deal with the topic as a core area need to be identified. Further any other secondary service which covers the topic as a peripheral area has also to be consulted. Sometimes it would be helpful to examine whether a review article is available on the topic as such an article not only provides extensive references but also presents a consolidation of views and efforts on the topic.

iii) Deciding the search methods and search strategy

All the secondary sources do not follow any common pattern and are marked by striking diversity. The introductory chapter in each secondary source or tertiary source provides information as to how the source could be used. Some secondary sources have been probably more frequently used than the others, which makes them familiar and easy to use. Some of the secondary sources follow systems of classification for grouping the topics. It is advisable to check whether in these classificatory groups the topic identified for literature search is listed as one of the selection. If it has been listed, references listed under those sections will be highly relevant. It can be supplemented by consulting the subject or concept index for identifying other relevant items which have been included under other sections. Some of the popular names, synonyms, and trade names for the concepts identified for the search could also be included in the terms used for literature searching. Some of the secondary services follow their own thesauri and subject heading terms which need to be consulted before using them. The secondary services are increasingly becoming available as computer readable databases. These databases can be searched by means of several parameters. The librarian/information officer has to become familiar with search capabilities to make the best use of these information products. After referring to the subject section of secondary sources the names of authors/corporate authors are noted down. These names are looked up under author and

corporate author indices mainly for identifying additional references. Some of the other important sources of information include conference proceedings, technical reports, theses, patents, trade literature, etc., which could be useful information source on the topic. Sometimes institutions and individual experts could be additional sources of information.

iv) Methods of recording references or information

The recording of references could be done in several ways. In case the search results have to be provided very quickly, page mark could be kept in the primary sources identified as relevant for examination by the user. In most cases, the searcher has adequate time to make a comprehensive, consolidated presentation of search results. While actually searching the searcher could spend a little more time on recording the information adequately and methodically instead of making vague notes. Such initial patient efforts help avoid the repeating of the exercise involved in searching. Generally the tendency is to note down references on a sheet of paper, one recorded under another. Initially, it may be convenient, but later, it does not provide any flexibility for arranging the references in a desired manner. The references could be recorded on a card or a slip which would facilitate, first, handling; secondly, the providing extra information like an abstract and thirdly, flexibility in choosing any desired order for arranging the references (e.g., by author, or by date of publication, etc.).

v) Presentation of search results

Informative, useful, and impressive presentation of search results is as essential as painstaking searching and identifying of appropriate sources. While presenting the search results, decisions need to be taken regarding the following aspects: a) the type of logical arrangement of search results; b) the amount of detail to be included in each of the references; and lastly c) the type of layout. The arrangement could be by subject, by author or by type of material or it could be chronological. The arrangement could be a mixed arrangement combining some of these arrangements. The appropriate arrangement will be the one chosen based on the user's preferences, the type of arrangement the user finds the most useful and helpful. Regarding the details to be included besides the necessary bibliographic details, a brief annotation may be added to each reference and a slanted abstract may be provided highlighting the appropriateness and relevance of the selected references. The layout of details has to be such that the presented product is easily browsable. The standard arrangement of details with which the user is already familiar may be followed to avoid creating confusion to the user.

13.3 REFERRAL SERVICE

The present day information needs of the users of library and information centres warrant exhaustive or comprehensive coverage of literature/information. However, no library can able to acquire all the documents or information required by every user. The solution to this problem is the 'referral service" which aims at directing enquiries to appropriate sources of information other than the sources available within the L& I Centres.

Definition of Referral Service

According to Gray "Referral services link users to appropriate sources of information on the basis of specially prepared guides."

According to Murdoch "A referral centre is an organisation for directing searches for information and data to suitable sources such as libraries, document dissemination centres, information analysis centres, data exchange centres, and individuals."

The above two definitions indicate that referral service is a service which directs or links the users to appropriate source(s) of information, which may be a library, document dissemination centre, etc. on the basis of specially prepared guides. Besides directing the users to an appropriate source(s) of information., the other virtue of referral service is to ensure optimum utilisation of existing resources, may be, in a region, nation or in the world.

Need for Referral Service

The following factors determine the need for Referral Service :

A single library and information centre cannot cater to the increasing and varied information needs of its users. As it cannot procure, process, store and retrieve every document/unit of information produced in the world due to space, finance, etc. limitations The large amounts of money which are spent by a nation in developing the collections of its L & I centres should be put to maximum use. Thus, for optimum utilisation of the existing collections in a nation, referral service is essential. The comprehensive and exhaustive coverage of literature facilitates quality research and avoidance of duplication of research effort. Referral services ensure comprehensive and exhaustive coverage of literature / information. Because of referral service we can save considerable amount of time of the users. The time which is wasted in procuring a document to meet the users need can be mitigated by referring him to a nearby L & I center where the document/information is readily available.

Pre-requisites for Referral Service

In order to render referral service the most important prerequisites are:

- Cooperation among Libraries and Information centres/systems
- Specially prepared guides, such as the union catalogues, directories of Library/information centres and subject experts.
- Proper and efficient communication system,
- Finances, staff, infrastructural facilities, formats, codes etc.
- Establishment of Referral Centres which render referral services and also compile union catalogues/referral databases and necessary directories.

Of the above, the first two prerequisites are quite essential without which even a moderate referral service cannot be initiated. Thus, a referral service presupposes library cooperation or networks. If there is no cooperation, the directing of users will be in vain as the directed to, source of information might not oblige the users with information. Secondly, we cannot direct the information needy blindly, we should know which information centre or library or individual has the required information, for this we need the union catalogues and directories.

Types of Referral Centres

The Referral centers may be located at international or national level.

a) *International Referral Centres*

International Referral System (UNEP). Its formation was first recommended by UN conference on the Human Environment held in Stockholm in June 1972, with the general aim of providing world wide access to information about local, national and international research, application, and legislative and management experiences in environmental matters. This service is based on a network of national focal points.

IRCIHE, the UNISIST / Unesco International Referral Centre for Information Handling Equipment, at the University of Zagreb, in formerly Yugoslavia.

There are other systems being planned or developed within the Unesco PGI frame work. Some of them are INIS, AGRIS, SPINES, and DEVSIS, WIS1 (World Information System in Information), ASFIS (Aquatic Sciences and Fisheries Information System) MEDI (Marine Environment Data Information), and WDRC (World Data Referral Centre).

b) *National Referral System*

Centre National de Documentation Scientific et Technique (CNDST) in Belgium for medicine, physics, chemistry, engineering, agriculture, and information science.

As a part of the Scientific and Technical Information system in Canada, a referral service is proposed and it is based at CISTI, the Canadian Institute for Scientific and Technical Information. In France a national referral service called SOSDOC has been established by Bureau National de l' Information et Technique (BNIST) at the end of 1977.

In UK there are various services, some of them are Aslib Referral Service, Small Firms Information Services, etc.

In USA there are several centres and services. Some of them are:

National Referral Centre at the Eibrary of Congress established in 1962, it acts as the National Referral Centre for Science and Technology.

ERIC (Educational Resources Information Centre).

NAWDEX (National Water Data Exchange)

TRISNET (National Network of Transportation Research Information Services).

In India under NISSAT there are several Documentation centres such as INSDOC, DESIDOC, NASSDOC, SEN DOC, etc. which render referral service in their subject areas in a limited way.

C) *Referral Databases*

DARE: This is the first and largest UNESCO referral database. It contains world-wide reference to research and training institutions, specialists, course projects; etc.

CODATA Referral Database (CRD). Set up with UNESCO support. It covers international records describing numerical data sources in science and technology.

13.4 SELF ASSESSMENT QUESTIONS

- 1 What is Literature Search ? Explain various methods of Literature Searching.
- 2 What do you understand by Referral Service ? Explain the need pre-requisites and method of referral service.

13.5 SUGGESTED READINGS

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LESSON - 14

DOCUMENT DELIVERY SERVICES AND TRANSLATION SERVICES

AIMS AND OBJECTIVES

This Unit introduces you some of the important services called Document Delivery and Translation Services. After studying this unit you will be able to:

- highlight the need and usefulness of the document delivery, translation services; explain how to organise the services;
- describe the activities of some of the important document delivery, translation centre

Structure

- 14.1 Introduction
- 14.2 Document Back-Up Services
- 14.3 An Overview of the Existing Document Back-Up Services
- 14.4 Document Delivery Services; UAP
- 14.5 Translation Service
- 14.6 Planning and Organisation of Translation Service
- 14.7 Types Functions and Methods of Translation Services
- 14.8 Role of Documentalists in Translation Service
- 14.9 Translation services at international and national Scenes
- 14.10 Self assessment questions
- 14.11 Suggested Readings

14.1 INTRODUCTION

Document delivery begins where the literature search ends. A researcher or information user is not satisfied with a list of references per se. He needs the documents containing (according to his judgment) the vital information he is after. Thus, the ultimate aim of any library/documentation centre is to provide hard copy of the document which the user wishes to consult. The realisation of this objective alone transformed the libraries from "stoic houses" to "service systems". In the beginning the "closed access" systems of these service system restricted the use of documents by the user and the service was entirely dependent on the staff of the system. Later, the advent of "open access" system has thrown open the collection of the library to the user for making his choice of the document. This supply of the document to the user for in-house or for borrowing for permanent keeping is called as Document Delivery Service, (DDS).

The primary objective of any library is to provide its users with the document(s) they need to satisfy their educational, information, intellectual and research need(s). The Second Law of Library Science propounded by Dr.S.R. Ranganathan proclaims that 'Every reader his/her book'. But, this is very difficult or almost impossible to realize as no library can acquire each and every document required by its readers, because of its financial and other limitations. Therefore, in order to help its readers satisfy their needs there are referral services, inter-library loan services, etc. Even these services suffer from their own limitations. Therefore, the libraries of a region/nation may have to depend on "Document Back-up Services". The document back-up service is a service which aims at supporting individual library(ies) with required documents to meet the needs of their users. A library or a documentation center which renders document back-up services is a document back-up center.

Document Back-up Services are helpful, because, every nation is expected to have a national repository of documents in various disciplines, such as. National Science Library and National Medical Library. Naturally, such libraries are expected to develop collections to represent the total intellectual output of the nation and also considerable amount of literature produced elsewhere in the world in the concerned subject field. Such libraries should act as the document back-up sources/centers by rendering Document Back-up Services.

14.2 DOCUMENT BACK-UP SERVICES

Having learnt what a document back-up services is, you should understand its need, process of preparing a document back-up service and also have an overview of the existing services.

Need for Document Back-up Services

As mentioned earlier, Document Back-up services are essential in order to go to the rescue of an individual library in satisfying its users needs where it does not actually have a document of its users interest. Besides this, the need for Document Back-up services is to:

- 1) Ensure comprehensive coverage of literature by every researcher, scientist, scholar in the field of his/her study or investigation. This is quite essential for avoiding duplication of research effort and promote quality of research.
- 2) There will be no meaning in every library procuring every document published in the world. This would create space problems and document organisation problems in individual libraries. Above all, the finances of every individual library pose severe constraints on document acquisition. Therefore, it will be meaningful if every individual library develops a moderate collection and depends on a national repository or back-up source for comprehensive coverage.
- 3) A library needs to develop a core collection. There is no need to acquire a document which is rarely consulted. For such peripheral collection Document Back-up services are essential.

Thus, the document back-up services ensure comprehensive literature coverage by the researchers, scientist, and readers, saves money of individual libraries on acquisition of peripheral collection, solves space and organisation problems in individual libraries.

Process of Document Back-up

The process of Document Back-up has to be discussed from the point of view of the system of Document Back-up and also from the method of Document Back-up.

i) System Document Back-up

The system of Documents Back-up in a nation region could be (1) Centralized System, (2) Partially Centralized System, and (3) Decentralized System.

1) Centralised System:

In this system there will be only one central Document Back-up library. All document back-up services will be rendered by this library in the field(s) which it covers. Therefore, usually it will be a highly comprehensive collection at national level. There will be advantages and disadvantages of this system.

The advantages are

- i) It will be fairly comprehensive in coverage.
- ii) As it is the only source people need not waste their time and money for finding the documents at various centers, as in a case of decentralised system.
- iii) Since it is a dedicated center the services will be efficient fast.
- iv) It mitigates the problems of bibliographic organisation and control in general and compilation of union lists in particular as there will be almost minimal interlending among libraries.
- v) The demand and supply of documents provide better for effective collection building in individual libraries in particular and in the center in general.

The disadvantages are

- i) Being the only source, the number of copies available may not be adequate to meet the nationwide needs. Hence, there may be long waiting sometimes.
- ii) The management and organisation of such a huge system would be difficult and this might affect its efficiency.
- iii) This system may not be effective for back-up of all types of documents.

2) Partially Centralised Systems:

In this system a single library builds up and maintains extensive collection which will have heavy demand, on a subject or subjects. Further, it taps the resources of other libraries, which back-up the system, to meet the residual demands. Thus, all demands or requests for information or documents will be monitored and met by the center.

The advantages are:

The system has more advantages than centralized system because, the coverage could be comparatively more comprehensive and extensive, because of the back-up libraries. However, there will be a burden of interlending on back-up libraries. Thus, in this system an

extensive collection building and document or literature coverage is possible at comparatively less cost.

The disadvantages would be

- i) Time consuming process, in case the items are not available with the center. The interlending takes its own time.
- ii) It requires building up of location tools and the process of updating them would be laborious and needs use of modern technologies for instantaneous, effective and efficient updating.

3) Decentralised System

For this system a meticulous planning is essential in order to avoid duplication of efforts and communication gaps. In this system a group of libraries build up collections in a planned way, depending on their areas of specialisations. Each library will have core collection so as to avoid total dependence, besides the core collection they also acquire additional material which will form a unique collection in the group. Resources of the libraries are made known to each other by a union catalogue. Thus, the libraries in the system back-up one another.

The advantages of this system are

- i) Individual library will not have much of a burden in developing comprehensive and extensive collection.
- ii) Since each library specializes in one area, collection development and organisation can achieve perfection.
- iii) Requests for documents can be sent directly to the individual libraries. This saves time of the users and lessens burden on every center/library. Further it reduces interlending burden also when document delivery services are offered.

The disadvantages of this system are

- i) All the libraries in the group will have to render back-up service/document supply service besides their routine functions.
- ii) It will be imperative on the part of every library in the group to acquire additional sources which they may not normally require.

Forms of Document Back-up Services

By and large, the aim of document back-up process is to support an individual library with its required peripheral collection. Therefore, the form of services in document back-up process assumes the form of interlibrary lending services or document delivery services.

i) Inter-Library Lending

This service, as part of document back-up process, takes place in the following fashion. On request by individual library the document back-up system(s) lend the required document to the needy library, directly in case of decentralised system, though the central system in case of a centralized system. If, the documents back-up system is a single mammoth library then lending of books to the needy library will be executed by such central library.

But, interlibrary loan process is outdated and also it suffers from many limitations, such as insufficient number of copies of a document at the document back-up system. Delays in the process of return of books lent on interlibrary loan facility. Damage caused to the books by various types of users and fixing up of responsibility for the same will be difficult. Above all Wessling notes that, "numbers of requests have escalated beyond a manageable quantity for even the argest operations (or especially for the largest operations) and that requests are being turned away". Therefore, document delivery is a primary service for the nineties.

ii) Document Delivery Services:

To a great extent document delivery service means that a reproduced copy of the required document or a portion of a document will be delivered or supplied or provided to the needy library. Due to the advent and availability of advanced reprographic technologies and relaxed copyright implications. There is considerable increase in document delivery services. Almost all document back-up systems render document delivery services. Therefore, document back-up services can almost be identified with document delivery services and the Interlibrary loan had evolved into library document delivery.

Besides the above mentioned systems of document back-up process, at the level of execution there are various process or methods of making request and document supply. The requests may be sent by post, telephone, fax, electronic-mail or on-line through the connected terminal(s). Documents may also be supplied by any one of the above methods. However, supply by telephone is not really meaningful, but the fax delivery makes use of telecommunication/satellite communication lines or links for digitized transmission of the images/matter contain in the documents.

14.3 AN OVERVIEW OF THE EXISTING DOCUMENT BACK-UP SERVICES

When the issue of an overview of the existing Document Back-up services comes up, one has to have clear distinction between document back-up services and document supply services. Every library may render a document supply service, but it can not be a document back-up library. A document back-up library/institution is one which backs-up various library(ies) in a region, nation or the globe itself with documents to meet the needs of individual users of an individual library or a member library in a cooperative or other-wise system. Thus, every document back-up library renders document supply services/document lending services. But, every library which renders document supply services cannot be called as a document back-up system.

There are several document back-up services/systems at regional, national and international level. A brief account on some of the important systems is presented below:

1) British Library Document supply Center (BLDSC), Boston Spa

This center is an example for partially centralized system, because it renders service along with some back-up libraries. But, to a large extent it meets the requirements of its clientele from its own resources. The center was formed in 1973 as British Library Lending Division (BLLD). This center provides most comprehensive document supply service. The center also receives requests from various other countries in the world.

2) Indian Scientific Documentation Center (INSDOC)

INSDOC can be identified as a document back-up center in India in the field of Science and Technology. INSDOC renders Document Supply Services, based on a decentralized collection of resources held in major libraries in the countries, since its inception in 1952. For the location of the documents, especially periodical literature, it has compiled/National Union Catalogue of Scientific Serials in India (NUCSSI).

Recently, (in 1992) INSDOC has introduced "Contents Abstracts and Photocopies Services (CAPS). This is a form of document delivery services, extended to individuals and institutional subscribers. Under this service, the subscribers get monthly dispatches of contents of 40 journals selected from about 50,000 core Indian and foreign journals in the field of science and technology. Subscribers can avail themselves of two types of services viz., 1) Contents only, and 2) Contents and abstracts/photocopies. On receipt of an order from the subscriber for photocopies of complete article(s) of their interest and for abstracts of the articles, INSDOC provides the same to the subscribers in the form of a paper, diskette or e-mail or fax according to the choice of the subscriber at an extra cost.

3) On-line Computer Library Center (OCLC)

OCLC is a decentralized system. It is a non-profit making computerised library network of about 11,000 libraries in about 41 countries/territories. There is a central bibliographic database which is accessible to the participating libraries on-line through OCLC dedicated international telecommunication network and also via dial access. Borrowing libraries send on-line requests directly to the libraries which possess the required documents. Because, the Interlibrary Loan (ILL) system of OCLC is being an on-line communication mechanism, the requests will be automatically forwarded to the selected potential lending libraries. The system handles millions of requests every year.

OCLC (formerly known as Ohio College Library Center founded in 1967) is a well-known cooperative library system/network. OCLC and Research Library and Information Network (RLIN) have cooperation to increase the number of document suppliers accessibility. In 1992 OCLC planned access through the OCLC EPIC online reference system and its end-user service, First search, to a table of contents database covering journals in science, engineering, business, and medicine. First search, a user friendly menu-driven programme, will allow users to search by subject for books and other material included in OCLC's bibliographic database as well as a variety of Indexing and abstracting tools. The table of contents service, Faxon finder will include delivery of needed articles by Fax or Faxon X Press.

4) Other Systems

As pointed out earlier document back-up services cannot be separated with Inter Library Lending (ILL). And the expanded ILL service, which can be called as Library document delivery, presently acts as an electronic guide to the user and provided a library with the means to offer easy and definite access to needed document. It broadens the current library-to-library lending system and provides a single electronic access point for users to obtain direct delivery of required items of documents.

There are several document delivery systems/services offered by various libraries at almost all levels, namely, local, regional, national and international levels. But the major known systems are the national level library and information systems.

The current document delivery service provided by National Agricultural Library, U.S. is described as one including full-text retrieval, networking, outreach, the use of document delivery vendors and wide range of technological innovation.

MELDOC programme at the University of California at Irvine, permits dial-in users of MELVYL (the University of California nine campus online union catalogue) to make requests for electronic campus delivery of specified documents. There can also be requests for ILL when the item is not available locally. The latest module adds another option for users by offering direct link with commercial document delivery suppliers for a fee for a rapid and direct delivery of selected titles.

The MELVYL document delivery request system comprises of special files such as the MEDLINE database, etc. A user can transfer a citation identified in MELVYL MEDLINE by an electronic message, which will be routed to his or her home campus library collection, where it will either be filled from that collection or referred to another campus to be filled by ILL. Contact with an outside vendor will be planned to support delivery of items which are not available within the University of California system.

The Maggie's Place, an extensive computer system, of the Pikes Peak Library District in Colorado Springs, Colorado, has component called LINK which permits its users to connect through any terminal on Maggie to remote computers and telecommunication networks such as DIALOG, RLIN, etc. This enables user access to the full range of document delivery sources linked with online search services.

The Grateful Med System of the National Library of Medicine (NLM, US), allows an individual user to search and identify articles in any of the NLM databases including MEDLINE, for document delivery. Actual delivery of the required article is facilitated with the link to Grateful Med, called Loansome Doc, which allows the user to generate an electronic request to his or her library for document delivery of specific articles. If the request cannot be fulfilled by the host library, it will be referred to another participating library. Loansome Doc supports library document delivery service to health care professionals, regardless of geographical location.

UnCover2 is a joint project of CARL systems, Inc. (CSI) and the Colorado Alliance of Research Libraries (CARL). It demonstrates a specialized document delivery service which is tailored to provide delivery from local or coordinated holdings in libraries. The UnCover database includes the table of contents of the combined serial holdings of CARL Member Libraries. The document delivery component of Uncover promises articles delivery by fax within 24 hours. The service include optical scanning and storage of the articles when first delivered so as to enable immediate fax delivery of subsequent requests.

There is another trend, set by the commercial online search services. In response to increased user demand, online search services, such as DIALOG, BRS, etc. are increasing the number of document delivery options available, and they are facilitating users' ability to retrieve

documents. For instance, DIALOG Information Retrieval Services link the users to about 70 document delivery services.

ADONIS, the European Article Delivery Over Network Information System project receives journals directly from publishers. These journals will be indexed by Excerpta Medica, assigning a specific ADONIS number, and scanned on a weekly basis. Copies of articles are stored and supplied on CD-ROM to the major document delivery centers. These centers in turn use these discs to satisfy request from individual users.

In India almost all documentation centers and to certain extent the libraries attached to National Research Laboratories do provide document back-up services/document delivery services, perhaps in a restricted way. In principle the National Medical Library, Libraries attached to CSIR Laboratories, the NASSDOC, SENDOC, etc. also render document delivery services in their own limited way. There is a need for provision of state-of-art electronic and telecommunications technologies or facilities to enable them to render efficient document back-up/delivery services. The INFLIBNET aims at developing network of universities and college libraries primarily in order to facilitate better resource sharing among the participating libraries, though bibliographic information and document delivery services.

14.4 DOCUMENT DELIVERY SERVICES; UAP

UAP stands for Universal Availability of Publications. This is one of the programme of the International Federation of Library Associations and Institutions (IFLA). The origins of the UAP programme can be traced back to the 39th IFLA conference in Grenoble in 1973. The theme of which was “Universal Bibliographic Control”. The UBC programme emphasizes the need for the promotion of a worldwide system for the exchange of bibliographic information.

The credit for creation of the concept of UAP goes to Donald Urquhart the then chairman of IFLA’s Committee on International Lending and Union Catalogue as well as Director of the National Lending Library for Science and Technology, Boston Spa (the present BLDSC). He urged and strongly argued that, “it was no use, that it was indeed frustrating to extend bibliographic control and provide a faster, more complete supply of references if the documents to which they referred could not be obtained.” Thus, the specific concept of UAP originated with Urquhart. This opinion of Urquhart was also shared by Maurice Line, the then Director of National Central Library, U.K. He also suggested that improved access to bibliographic information on publications must be matched by improved access to publications.

The views of Urgent and Line found favour at Western European Seminar on Librry Interlending, which was held in Banbury in 1973. The recommendations of this seminar, especially recommendation 7.3 stated: “As an essential element in any programme of national and international planning and as a natural concomitant of Universal Bibliographic Control efforts should be made with in each country and between countries to improve access to publications by increasing the availability and speed of interlending services and by developing simple and efficient procedures. The ultimate aim should be to ensure that all individuals throughout the world should be able to obtain for personal use any publication wherever or whenever published, either in original or in copy” (IFLA Annual 1974. Proceedings of the 40th General Council Meeting).

The above recommendation is significant and important, because it proclaims the indispensability and improvement of Universal Availability of publications of all kinds, all times and of all nations. It also signifies the role of information in the modern information age. But then, it has its own implications of copyright laws and document/publications delivery systems/services.

As long as provision of the publication in original is concerned there will be no problem. Whereas, when it is the provision of the copy of the document, it implies that to the extent possible there should be liberalized copyright laws and improvised and more efficient document delivery services by document back-up centers, library and information centers.

A brief account on the development of the programme is presented below:

The above recommendation was officially adopted at the 40th IFLA conference in 1974 in Washington DC., and the theme of the conference was “National and International Library Planning”. The concept of UAP was clearly enunciated as transcending the improvement of interlibrary loan, implying total service to users. At the same time and place the creation of an office for International Lending was approved. The office was set up in the British Library at Boston Spa, with Maurice Line as Director. The aim of the office was to promote international lending by offering practical support and collecting and publicizing information of interest.

At IFLA’s world-wide seminar in Seoul in 1976, it was stressed that UBC and UAP are complementary and that any improvement in availability is a step towards universability. The formulation of an interlending code was recommended as it was felt that UAP programme would mean increased interlibrary loan at the national and international levels.

In 1977 Unesco contracted to IFLA a comparative study of national interlending systems. From then on, UAP enjoyed full support of Unesco. Unesco also proposed an International congress on UAP to provide wide publicity for the programme. The approved programme and Budget of Unesco for 1981-1983 has stated that “An international congress on the UAP was a stepping stone for the advancement of the programme. There were several seminars, conference organised national meetings specially devoted to UAP. Unesco initiated a project on feasibility study of a document delivery system to support the Asian Scientific and Technical Information Network (ASTINFO) in 1986.

Thus, there are several projects, efforts and studies to promote the UAP. Many countries are presently participating in UAP programme in its true spirit. However, interlending is not a feasible activity. Therefore, presently there is a growing need for document delivery services, which imply provision of a copy of the required document to the needy. For the provision of copies of documents, in other words, document delivery services, necessary reprographic facilities must be available to the document delivery centers/libraries.

14.5 TRANSLATION SERVICE

Information - scientific, technical, managerial or cultural can be effectively and efficiently communicated only through the language best known to the receiver user in the absence of a universal language known to all, the scientific communication is being done through different languages known to the information generator, resulting in

communication. Consequently, it does not reach the scientific community the world over which in turn retards the growth of knowledge and which sometimes inhibits the efforts of the learned community. A way out is to provide information in the language known to the user by translating the document into the user's language.

Need and Purpose

Research and development are dependent on the availability of knowledge generated and packaged elsewhere. But the scattering of knowledge in different languages prevents the use of it. When research was the sole effort the researchers used to know two or three languages and so there was not much need for translation. With the advent of team and relay research the language barrier assumed greater importance due to the 50 % of the literature is produced in English which is known by many all over the world The other 50 percent or more is being published in languages other than English, i.e., in Russian, German.,Japanese, Chinese, etc.

A survey at the University of Sheffield by the research workers and research students showed that well over half of them feared that they might be missing important work done outside the English speaking countries. In this situation to keep abreast of the new developments, a researcher has to have a competency in four or five languages which is virtually impossible. Hence these users cannot make use of the information published in other languages. Thus the language barrier creates hurdles in the free flow of information. Consequently, there are problems in exploiting the information for education, research and in technology transfer.

Development

Since the last century literary works of higher order of significance have been translated from one language to another as part of the effort to promote cultural understanding. The need for knowing different languages was increasingly felt, since the beginning of the twentieth century. With the information explosion people started preferring micro-documents (journals, reports, standards, patents, etc.) to books for current information. Scientists and researchers with limited time at their disposal have realised that getting translations is better than learning different languages. Hence measures have been taken at different levels to overcome this problem and to see that documents in a particular language can reach wider audiences in other language groups. These efforts have taken shape in "Repertoire International des Traductions" published by the International Institute of Intellectual Co-operation in 1932. Since then many organisations at international and national levels have tried to tackle the problem from different angles: e.g.,

- i) Teaching foreign languages to users
- ii) Development of linguistic tools - multi-lingual dictionaries
- iii) Cover-to-cover translations
- iv) Translation on demand
- v) Formation of translation banks/pools
- \ i) Machine translation

As has been already mentioned, researchers have very little time to spend on learning foreign languages and most of them do not have the linguistic skill. Moreover, cover-to-cover translation is costly, machine translation with the aid of computers is yet to take shape. So translation on customer demand and formation of translation pools/banks have become popular.

14.6 PLANNING AND ORGANISATION OF TRANSLATION SERVICE

National Documentation Centres/large special libraries and their associations utilise the services of linguists, familiar with the subject as well as with the source and target languages. (The languages of the document to be translated is called 'source language' and the language into which the document is to be translated is called 'target language'). These experts need not necessarily be on the staff of the organisation and the organisation can maintain a panel of translators whose services can be utilised, whenever there is demand. It is suggested that attempts be made to have an objective assessment of the need of such a set vice at the institutional level from the point of view of organisation. Important factors to be considered while organising an in-house translation service are:

- i) Identification of the principle subject fields in which translations are required, and likely changes and shifts of priorities in the subject fields;
- ii) Identification of languages from which the documents are to be translated and likely shifts;
- iii) Examination of the existing services for the coverage of such subject fields and languages;
- iv) Assessment of work load in terms of the volume of documents to be translated, money required for translation, if it is to be done by outside agencies;
- v) Relative lead time taken, if the translation is to be done by an external agency and by an in-house translator;
- vi) Personnel requirement in terms of language, subject specialisation and salary to be paid.

14.7 TYPES FUNCTIONS AND METHODS OF TRANSLATION SERVICES

The functions of a translation service are:

To provide the document in the user's language which is hitherto not available;

To save the time of the researchers;

3. • To promote the use of the documents;

4. To promote cultural understanding.

Types of Translation Service

The translation service can be provided in anticipation and on demand.

Anticipator) Translation Service is done through cover-to-cover translation of documents after a preliminary survey for such need. The advantage of such service is that it would eliminate the hit- or-miss selection of articles, and ensure the availability (not necessarily use) of important foreign scientific literature. It is estimated that there are about 300 cover-to-cover translated periodicals in English, mostly from Russian, and other east European and Far-Eastern languages. Provision of such a service is very costly and involves more lead time than that of any other.

On Demand Translation Service is done when a request for translation is made by the user. This type of service is relatively cheap and the lead time is comparatively less than others. Most of the Translation Pools/Banks do provide this type of service.

Methods of Translation

Depending on the type of document to be translated, four methods of translation are in vogue. The translator should be directed to adopt a suitable style, keeping in view the type of document to be translated.

a) Literal translation should be utilised for factual type of translation. Commercial correspondence, legal materials, technical information and scholarly material in Pure and Applied Social Sciences are examples where this type of translation is required. Free translation involves the exercise of a type of freedom or leeway in the choice of an equivalent for the original word. It is found to be more appropriate, and understandable to the target language group than even literal translation.

Transposition is used where an entirely new work has been created based on the ideas, emotions, view points, attitudes and literary style of the original by the translator in the target language. Poetry and such a literary works are examples of this type.

Adaptation is used more in children's books than in others so as to make the work concerned, more intelligible, interesting, educative and entertaining to the foreign readers.

Principles of Translation

The following are the criteria formulated for translations:

- i) Translation should give a complete transcript of the ideas of the original work;
- ii) The style and manner of writing should be of the same character as that of the original work;
- iii) The translation should have all the ease of the original composition.

14.8 ROLE OF DOCUMENTALISTS IN TRANSLATION SERVICE

The providing of a translation service is a responsible job. It involves some essential decisions. In the translation of books the documentalists have no role to play, since the translation of a book is out of the purview of the normal library functions. As has already been stated, the translation service generally is related to microdocuments. These documents are being processed regularly by the documental ist. He will be aware of the availability of foreign language documents and the requirements of his user. Whenever an in-house translation service is to be offered the documentalist should accept the responsibility for it. He should have information on translation pools, centres, professional associations, commercial publishers, government agencies and their products and services. He should try to acquire tools like translation indexes, translation directories, multilingual dictionaries, etc. He should be able to assist the users on translations and get them whenever required if available, or else arrange for translation. The documentalist can bring to the notice of the translating institutes, the documents on demand for translation. It will be an added advantage if the documentalist possesses a working knowledge of one or two foreign languages.

When the translations are carried out on a responsive basis, the bibliographical control of such translations becomes very difficult. If there is a proper control, repeated translations can be avoided thereby saving a lot of money, effort and time. Translations can be put to repetitive use by some kind of announcing mechanism. Keeping these aspects in view translation pools/banks have taken shape with the objective of collecting translated versions of documents and maintaining them with proper bibliographical control, and also with that of announcing the availability of these documents with appropriate indexes. There are a number of such translation pools at international and national levels.

14.8 TRANSLATION SERVICES AT INTERNATIONAL AND NATIONAL SCENES

(a) The UNESCO

As a part of its role in promotion of cultural understanding among the nations of different social and cultural background the UNESCO has undertaken the translation of books of high literary value of each country into the languages of other countries. It is mainly concentrating its efforts in the fields of Humanities and Social Sciences. The UNESCO is publishing an annual *Index Translationum*, containing a list of books translated in all subjects from different countries of the world. The entries are arranged countrywise and within the country by the UDC.

(b) National Translation Centre (NTC), Chicago

A co-operative, non-profit enterprise, National Translation Centre (NTC), formerly Special Libraries Association Translation Centre (SLATC), is vested with the responsibility of collecting all non-governmental translations generated within and outside the country. The government translations are taken care of by the Clearing house for Federal Scientific and Technical Information (CFSTI), formerly National and Technical Information Service (NTIS). Many scientific and professional societies and universities and other institutes in the USA and broad send their translations to the NTC, making it a depository of translations. It answers enquires about the availability of translations from the centre and elsewhere. The NTC publishes a semimonthly, *Translation Register - Index (TR-1)*. This Index announces newly accessioned translations. The services of the NTC are available at the BLLD and vice versa for the users. The CFSTI announces the government translations through *Government Reports Announcements (GRA)* and *Governments Report Index (GRI)*.

(c) International Translation Centre (ITC), Delft, Netherlands

The ITC was established in 1960 at the Technological University of Delft in Netherlands, under the guidance of the OECD, and is supported by 17 governments with the cooperation of many governments and agencies throughout the world. The ITC, formerly known as European Translation Centre (ETC), acts as referral centre in relation to national centres. It functions as a clearinghouse for scientific and technical translations prepared throughout the world from East European and Far-Eastern languages into English, German and French. The translations available at various sources are announced through the publication, *World Transindex*. This covers almost the entire gamut of translation activities in the fields of Science, Technology and Social Sciences.

(d) The British Library, the National Bibliographic Service

Formerly known as British Library Lending Division (BLLD), it is an important depository of translations and promotes translation activity with special emphasis on Russian literature. It publishes *BLLD Announcement Bulletin* and *The BLLD Review*. The first one is a complete guide to British research and development reports, translations and theses produced by the British government organisations, industries; universities and other learned institutions. The second publication covers the cover-to-cover translations, NLL Book translations and a list of BLLD translations. Of late the titles of these publications have been changed to *British Reports, Translations, Theses* and *Inter/ending and document supply*.

(e) Association of Special Libraries and Information Bureau (ASLIB), UK

The ASLIB is responsible for the maintenance of *Common-Wealth Index* of unpublished translations, which is created by the Commonwealth countries. This is only a location tool. The ASLIB also maintains a record of translators with linguistic and subject proficiencies.

(f) Transatom

A specialised information pool located at Brussels, is the joint effort of European Atomic Energy Community (EURATOM) and the US Atomic Energy Authority (USAEA). It has the objective of collecting and disseminating information on translations in the field of Nuclear Science, with an emphasis on East European, Oriental and other unfamiliar languages. It announces information on translations through *Transatom Bulletin* which is amalgamated with the *World Transindex*.

National Scene

India has the third largest scientific and technical manpower in the world. Hence the requirements of these people are of a high order. To cater to their translation needs as many as 25 scientific, industrial and defence organisations have taken up in-house translation activity in their areas of specialisation. Most of these organisations collaborate with the INSDOC at the national level. The services of some of the organisations are given below

a) Defence Science Information and Documentation Centre (DESIDOC), Delhi

The DESIDOC is the central information agency for Defence Research and Development Organisation (DRDO) in India. A translation bank was set up in 1960 at the DESIDOC.

This translation bank is to :

- act as a repository centre of translations done at DRDO establishments; act as a referral and clearing centre for translations;
- announce translations at regular intervals through the *DESIDOC Trans Index*: and
- the *DESIDOC Bulletin*, containing abstracts from foreign language periodicals.

The DESIDOC collaborates with the INSDOC and other scientific and industrial research organisations in bringing out the NTI. The DESIDOC offers its services through information search on specific topics, verification of new requisitions for translation, procurement of translations and supply of photocopies of translations.

b) Indian Association of Special Libraries and Information Centres (IASLIC), Calcutta

The IASLIC keeps a panel of translators and arranges translations into English of the papers in foreign languages as well as in Indian languages. The service is offered on request to Individuals and organisations.

c) The National Library, Calcutta

The National Library of India has published an Index, *Translationwn Indicanim*, a collection of 2800 translations published in India.

d) Indian Scientific Translators Association (ISTA)

The ISTA was founded in 1962 with the aim of promoting facilities for translation and of maintaining high standards of scientific translations. The Association publishes *Journal of Indian Scientific Translators Association*. It holds seminars on various professional aspects, and conducts short term training programmes in technical translation.

14.10 SELF ASSESSMENT QUESTIONS

1) What do you understand by Document Delivery Service ? Explain the services of any two national document delivery centers.

- 2) Explain the planning and organization of translation centers.
- 3.) Write short notes on
 - a. Translation pools
 - b. BLDSC

14.11 SUGGESTED READINGS

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LESSON 15

INFORMATION SYSTEM: TYPES AND FUNCTIONS

Aims and Objectives

The aim of this Lesson is to explain the concept of Information System and its types and functions. After reading this Lesson you will learn about Information system, documentation centers and information centers and their functions.

Structure

- 15.1 Introduction**
- 15.2 Information System**
- 15.3 Documentation Centres**
- 15.4 Information centre**
- 15.5 Self Assessment questions**

15.1 INTRODUCTION

Information is a human product, and, therefore, subjective at least to the extent it is constructed by human representational techniques and artifacts. Information derived from experience, observation, interaction, and reading. It can be unorganized or tightly structured. Williams has noted six parameters of information as follows:

1. Quantity of information which can be measured by the number of documents, page, words, characters, bits, drawings, pictures etc.
2. Content, the meaning of the information
3. Structure, the format or organization of the information and its logical relationship between statements or elements.
4. Language, the symbols, alphabets, codes, and syntax with which the ideas are expressed.
5. Quality, that which characterizes, the completeness, accuracy, relevance, and timeliness of information
6. Life, the total span of time in which value can be derived from the information.

Ching-Chih Chen (1982) defines information as all knowledge, facts, data and imaginative works of mind which are communicated formally and/or informally in any format. But information is not equivalent to knowledge

Information is the raw material and the precursor of knowledge. Knowledge emerges from the distilling, shaping and integrating of the raw material into concepts and rules.

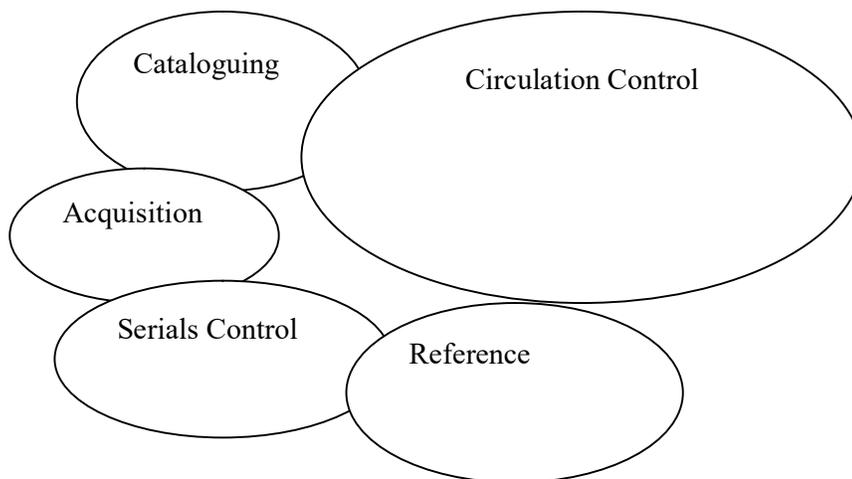
15.2 INFORMATION SYSTEM

Definition

A system is an arrangement of parts or elements working together to perform a set of operations in the accomplishment of the purpose of the whole. The term Information System refers to the methods, materials, media, producers and recipients involved in an organized way to effect information transfer within a specific field, activity, or organization. An Information System consists of complex collection of information “message”, persons who produce and use them. Institutions which process them, and a set of behavior patterns, customs, and traditions by which these persons and institutions interrelate.

Library and Information System

A typical library and information (LI) system is a set of objects, namely, acquisition, serial control, information storage and retrieval, user services, administration and planning which are interdependent because of the common purpose they intend to serve. The service is the common purpose that unites or integrates all the objects into a set or a system. All these objects that perform the major functions of the library and information system are considered as the sub-sets of the LI system. Thus Hays and Becker identifies, acquisition, serial control, circulation control, cataloguing, inter-library loan, reference and administration and planning as seven basic subsystems that make up the library system. Chapman and others have presented a model library system in the following diagram which presents a well-defined functional interrelationship among the component parts/subsystems of LI system.



Administration and Planning

Objectives of Information System

1. Building up a good valuable document collection, relevant to the organization Or systems needs in order to support the service activities
2. Acting as a control point for filing of the organization

3. Exploiting the literature
4. Providing an efficient and effective information retrieval and dissemination system
5. Acting as a clearing house, referral and switching centre for information on all aspects
6. Acting as a partner in the integrated development of information and documentation systems.

Constraints of an Information system

Peter Lazar has categorized all the system constraints broadly into three

1. Environmental Constraints
2. Organisational Constraints and
3. Operational Constraints.

15.3 DOCUMENTATION CENTRES

Definition

Documentation is a well-established term in Europe where it has been used for decades to refer to the literature of science and its handling, in whatever form. Documentation, then, is concerned with the theory and practice of producing storable items of information in a form of convenience to the user and so organizing them as to facilitate their retrieval and dissemination.

A Document centre, sometimes called a documentation depot is a depository or store house for documents. Its purpose is not archival but distributive. It acts as a central agency for collection, classification, and distribution information.

Documentation centres are found at various levels like, local, national, and international. At local level they are attached to large individual industrial, R&D, business and government departments (for example, the documentation and information unit of IICT/CCMB Library, Hyderabad.)

At national Level they are mostly subject based or the discipline based (for ex. NISCAIR, INSDOC, NASSDOC, SENDOC, CORD, DESIDOC, etc.) At the international level, most of the networks/ information systems like INIS, AGRIS, and ICSSID which are also subject/discipline based. They function to serve the international communities with a cooperative spirit.

Functions and Objectives

1. Provides quick access to information
2. Nascent micro-literature in a specialized subject or discipline
1. To bring to the notice of specialists users, the current literature and latest advancements in their subject fields
3. Providing indexing, abstracting, CAS, SDI Compilation of Bibliographies, Document delivery and translation services.

15.4 INFORMATION CENTRE

Definition

Information services units in organizations are frequently titled information centres or information departments. A precise definition of information centre is difficult because the concept has been changing. The tremendous increase in scientific research and development activities, as Cohan and Craven Observed has “stepped up the demands of laboratory and administrative personnel for expanded, more efficient, and better-integrated information services. The result has been a trend to unify library, patent, translation, report writing, archival, abstracting, literature research, editorial, communication, and publications activities within a single facility”. The centralization of all, some, or only two or three of these activities as at times received the appellation of information centre.

Functions and Objectives

Objectives

1. Objective of an Information Centre/Specialised Information Centre is to satisfy the information needs of members of the parent organization.
2. It produces indexes, abstracts, extracts and so on
3. Provides collateral functions, such as technical writing, abstracting, SDI
4. The services generally offered by Information Centres are Reference, Referral, Literature search, Translation, Bibliographic, Information Scouting, Abstracting and indexing

15.5 SELF ASSESSMENT QUESTIONS

1. Explain the concept of Information system in relation to a library
2. What are the functions of an Information Centre and Documentation Centre

LESSON 16

NATIONAL DOCUMENTATION CENTERS- NISCAIR AND NASSDOC

AIMS AND OBJECTIVES

- The aim of this lesson is to explain the current status of national documentation centres of India in the field of Sciences and Social Sciences. After reading this lesson you will be in a position to understand the role of NISCAIR and NASSDOC

Structure

16.1 National Institute of Science communication and Information Resources

16.2 National Social Science Documentation Centre

16.3 Self assessment questions

16.1 NATIONAL INSTITUTE OF SCIENCE COMMUNICATION AND INFORMATI

NISCAIR

SCOPE

To become the prime custodian of all information resources on current and traditional knowledge systems in science and technology in the country, and to promote communication in science to diverse constituents at all levels, using the most appropriate technologies

Functions and Objectives

- To provide formal linkages of communication among the scientific community in the form of research journals in different areas of S&T
- To disseminate S&T information to general public, particularly school students, to inculcate interest in science among them
- To collect, collate and disseminate information on plant and mineral wealth and industrial infrastructure of the country
- To harness information technology applications in information management with particular reference to science communication and modernizing libraries
- To act as a facilitator in furthering the economic, social, industrial, scientific and commercial development by providing timely access to relevant and accurate information
- To develop human resources in science communication, library, documentation and information science and S&T information management systems and services
- To collaborate with international institutions and organizations having objectives and goals similar to those of NISCAIR

ON RESOURCES

inclusion of IJTK and MAPA in PCT minimum list

The two journals published by the institute namely Indian Journal of Traditional Knowledge(IJTK) and Medicinal and Aromatic Plants Abstracts(MAPA) have been included in the PCT minimum list.

International Collaboration

NISCAIR attaches great importance to mutual co-operation amongst various institutions in different countries and continuously works for its development. NISCAIR(former INSDOC) is the National Member of the International Federation for Information and Documentation (FID) from India and has been actively involved in the FID activities since 1952. The headquarters for the FID Commission for Asia and Oceania is located at NISCAIR since January 1996. NISCAIR hosted the 19th FID Conference and Congress held in New Delhi during 11-17 October 1998.

NISCAIR is also associated with the International Federation of Library Association and Institutions (IFLA). IFLA has been regularly sponsoring candidates for undergoing training at NISCAIR. The

SAARC Documentation Centre (SDC), set up at NISCAIR for exchanging S&T information among SAARC nations, has been functioning since January 1994.

NISCAIR is the National Centre of the ISSN International Centre for assigning ISSN numbers for serials published in India. NISCAIR exchanges publications with over 150 institutions in 44 countries in the world. Distinguished experts from other countries visit the institute every year. NISCAIR's scientists also attend international conferences, seminars, workshops and training programmes.

National Science Library***Introduction***

NISCAIR serves as a single window in the country for providing all kinds of S & T information. Its role as the national information resource is fulfilled through the National Science Library (NSL) that has a comprehensive collection of S&T publications in the country and is offering services on a national scale. NSL also acts as a referral centre and clearing house for the best utilisation of the existing collection in the country. Thus, it extends its base of operation to the national scale.

Resources

Set up in 1964, NSL aims at acquiring all important S&T publications published in the country and strengthening its resource base for foreign periodicals by acquiring the journals on CD-ROM or other electronic form as far as possible. NSL has a rich collection of over 2,00,000 volumes including monographs and bound volumes of journals in the following fields:

- Reference material/secondary sources in most of the fields of science and technology
- Computer science, specially the software aspects
- Proceedings of conference/seminar/symposia held in the field of science and technology in and outside the country

- Foreign language dictionaries
- Indian scientific and technical periodicals
- Important foreign serials in the field of science and technology
- Specialized collection in the field of information science and library studies
- PCT (Patent Co-operation Treaty) minimum journals
- Reports of R&D organizations
- CD-ROM databases of primary and secondary sources

Electronic Resources

Automated libraries are slowly shifting to Electronic Libraries that will eventually lead to the establishment of Digital Libraries. With decreasing shelf space and ever growing collections in the libraries, NISCAIR has been advocating the conversion of automated libraries into electronic libraries.

On-line Databases

NISCAIR has access to international databases. Information is obtained through online searching from over 1500 international databases. Skilled personnel at NISCAIR perform searches for research scientists and the corporate sector who use these databases for the latest R&D, commercial and market information.

CD-ROM Databases

National Science Library has an Electronic Library Division with a rich collection of more than 5000 foreign journals, conference proceedings, etc. and a large number of databases on CD-ROMs. The databases subscribed on CD-ROM includes ADONIS, BPO, CA, CAB Abstracts, FACCTS, Global Books in Print, GPO, IEL, SCI, Current Contents, Indian Standards, LISA Plus, PASCAL, Ulrich Plus and US Patents, etc.

Databases are designed using the state-of-the-art information technology tools. Some of the indigenous databases are available on CD-ROM as well as online.

National Union Catalogue of Scientific Serials in India (NUCSSI)

Indian Patents (INPAT) Database

Medicinal and Aromatic Plants Abstracts (MAPA)

Indian Science Abstract (ISA)

Electronic Publishing

With the advancement in Information Technology, NISCAIR using newer tools is producing many products on CD-ROM including Wealth of India, Indian Science Abstracts, National Union Catalogue of Scientific Serials in India.

Future Programmes In near future, other NISCAIR journals , popular science books and monographs will also be published in CD-ROM format. Gradually the back issues of the journals will also be made available on the CD-ROM format.

Editing

NISCAIR, with well-qualified and highly experienced editorial staff on its roll, provides editorial services for Conference Proceedings, Scholarly Books, Popular Science Books, etc. for other organizations on man-hour basis. Editing jobs cover content editing as well as copy editing and stylization. The charges for editing services are decided on case to case basis.

Print & Production

ISSN

NISCAIR is the National Centre for ISSN international centre for assigning ISSN numbers to serials published in India. Serials include journals, newspapers, newsletters, directories, yearbooks, annual reports & monograph series, etc.

ISSN is a worldwide identification code used by publishers, suppliers, libraries, information services, bar coding systems, union catalogues, etc. for citation and retrieval purposes. ISSN network system is run by an International organisation with its Headquarters at Paris. The benefits include international publicity and recognition of the serial by automatic inclusion in the International Serials Directories.

How to obtain ISSN: One can obtain ISSN for a serial publication which does not have ISSN, or changed serial title(s) whose old titles had already an ISSN or any new serial whose first issue is yet to be brought out. One has to submit a specimen copy of the serial and filled up Datasheet (downloadable)

Services

Bibliometric Services

Bibliometric services are carried out for studying growth, development and spread of any area of research, and also for identifying centres of excellence, influential authors etc. The services are useful for heads of departments / institutions, research planners, policy makers and individual scientist.

1. **Citation Analysis:** Checks how many times and where a given paper has been cited in world literature.
2. **Impact Factor of Journals:** Impact factor of a journal implies the frequency with which the average article of the journal has been cited in a particular year.
3. **Multifaceted Bibliometric Analysis:** This covers calculating author's productivity, journal preferences, impact factor analysis, subject growth trend analysis etc.
4. **Bibliometric Analysis:** Analysis of research papers published by institutions, groups of scientists, individual scientists etc. in comparison with other similar research.

Literature Search Service

NISCAIR offers literature search service and compile bibliographies on demand from indigenous as well as from international databases in the areas of S&T, engineering, industry etc.

Foreign language Translation Service

NISCAIR provides translation of S&T documents from 20 foreign languages into English. The languages include Chinese, Czech, Danish, Dutch, French, German, Hungarian, Italian, Japanese, Norwegian, Polish, Portuguese, Rumanian, Russian, Serbo-Croatian, Spanish, Swedish, etc. The clients include National Laboratories, S&T institutes, R&D organisations, Corporate and Public Sector Undertakings, Universities, Research Scholars etc.

NISCAIR provides reverse translation (English into foreign language) also. Translation of English text of maximum of one page into French, German, Russian and Spanish is undertaken. Translation of full English documents into Japanese is undertaken. NISCAIR also undertakes interpretation and consultancy assignments in Japanese language.

Consultancy Services

In the areas of automation, modernization and reorganizations of libraries and information centres.

In the design and development of specialized databases for organizations on turnkey basis.

In the areas of editing, designing, production and printing.

In CD-ROM publication jobs. Contents, Abstract And Photocopy Service(CAPS)

Contents abstracts and photocopying service(CAPS) is an innovative personalised information service provided by NISCAIR. A list of over 7,000 core journals in various disciplines have been identified. Select from this list (available free, on request) the journal of your choice. Send it to us and you will receive at your doorstep every month, the table of contents from each of your chosen journals. **After going through the table of contents, you can obtain the abstract or full text of desired articles through NISCAIR's Document copy supply service .**

Document Copy Supply Service(DCSS) NISCAIR provides a yoeman's service to the Indian scientific community by supplying copies of articles from Indian and foreign journals at nominal charges Copies of Indian and foreign patents and standards can also be obtained from NISCAIR

Book Exhibition

To reach the buyer directly, NISCAIR participates in most of the Book Fairs organised in the country at state, national and international levels. It also has an Exhibition-cum-Sale Van through which display-cum-sale of NISCAIR publications is done on regular basis in schools, colleges, IIT, Delhi University, CSIR labs, IARI, major office complexes and other important locations in and around Delhi.

Through this campaign, NISCAIR takes the books to the buyer's doorstep and offers a Special Discount of 10% too.

Reader's Service

The library is open to public for reading and consultation during working hours from 9.00 AM to 8.00 PM (Monday to Friday) and from 9.30 AM to 5.30 PM (on Saturdays)

Copying Service

The library provides on the spot Xerox copies of articles from its own collection, at a nominal rate of Rs. 1.00 per page. The first 30 pages of Xerox copies are provided free to students/research scholars. It also provides printout from journals on CDs available in-house. The charges for this service are Rs. 5.00 per page (25% discount for students).

Inter Library Loan Service

The library issues out its publications to the users of other libraries in Delhi through inter library loan service. Similarly, NSL gets the publications on inter library loan from other libraries in Delhi for its members

e - Journals Access

The library has started providing free access to electronic journals from 11 leading international publishers viz. Elsevier, Springer, American Institute of Physics, Blackwell, John Wiley, Cambridge University Press, etc.

Technical Query Service

NSL responds to any query related to journals and books

Major Projects

TKDL

E-journals Consortia

Directory of S&T Awards in India - Updation

Database of Intramural R&D Projects - Updation

Traditional Knowledge Digital Library (TKDL)

India is endowed with immense traditional knowledge, which is either undocumented or available in ancient classical and other literature, often inaccessible to the Information Managers and Patent Examiners. Documentation of this existing knowledge, available in the public domain, on various traditional systems of medicine has become imperative to safeguard its sovereignty and protect it from being misused in patenting of non-original inventions. To address this problem of grave national concern, NISCAIR and the Department of Indian Systems of Medicine and Homoeopathy (ISM&H) have entered into an agreement for establishing a Traditional Knowledge Digital Library (TKDL) on Ayurveda. NISCAIR is the implementing agency for this project. Its responsibilities include providing user-friendly software, setting up TKDL hardware and software platform for data entry, digitizing images of *Slokas*, making Directory on Traditional Knowledge Resource Classification (TKRC), populating the database and hosting the database

on web/portal. TKDL will be available in English, German, French,

Spanish and Japanese since these languages account for more than 98% of the international patent applications. This will give legitimacy to the existing traditional knowledge and enable protection of such information from getting patented by the fly-by-night inventors acquiring patents on our traditional knowledge systems. The project is progressing very well.

TKDL in the first phase targets Ayurveda. But as a whole it would encompass, in addition to Ayurveda, Siddha, Unani, Yoga, Naturopathy and Folklore medicine.

E-journals Consortia

NISCAIR is the nodal agency for developing a "Consortium for CSIR Laboratories for Accessing e-journals". The activity shall range from creation to monitoring of the access facility of scientific periodicals published by leading international institutions.

The objectives of E-journals Consortia are:

- to strengthen the pooling, sharing and electronically accessing the CSIR library resources.
- to provide access to world S&T literature to CSIR labs.
- to nucleate the culture of electronic access resulting into evolution of digital libraries.

To start with, an agreement has been signed with, e-journal publisher, M/s Elsevier Science for a period of four years for 1200 journals. Under this scheme, CSIR scientists shall be able to access these journals and download material for their use. Such access to world wide journal resources will play a very vital role and strengthen research and development in CSIR laboratories, thus leading to knowledge generation useful for socio-economic development of the country.

Computerised databases help in organization of data and its efficient retrieval. NISCAIR has developed expertise in the design and development of databases. In addition to development of in-house databases, NISCAIR has designed and developed

databases for other organisations. The contents of these databases vary from bibliographic to multimedia

16.2 NATIONAL SOCIAL SCIENCE DOCUMENTATION CENTRE - NASSDOC

National Social Science Documentation Centre (NASSDOC), was established in 1969 as a Division of ICSSR with the objective to provide library and information support services to researchers in social sciences; those working in academic institutions, autonomous research organisations, policy making, planning and research units of government departments, business and industry etc. NASSDOC provides guidance to libraries of ICSSR Regional Centres and ICSSR maintained Research Institutes.

1. The collection of the centre periodical literature, the full details about this literature is in two documents. a. "ILRC Holdings list" and "Periodicals in SSDC: a current List".
2. Reference sources, Covers all reference sources. The three NASSDOC compilations, brought out under its research Information series, namely Bibliography in SSDC, Reference sources in SSDC and Social Science Research Methodology.
3. ICSSR Publications, 'Guide to Books and journals Aided/published by ICSSR compiled in SSDC provides an overall picture of ICSSR activities in the publication field.
4. Theses and Research Reports, Unpublished Doctoral thesis in social sciences accepted by Indian Universities and also foreign unpublished theses on India. For information about this literature "Theses in SSDC" and "Research Project Reports in SSDC" kept updated from time to time has been compiled.
5. Documents in Microform 6. Inter Library Resources Centre, inviting local libraries to deposit their noncurrent, infrequently used but important for research .
6. CD-ROM databases, Online databases ICSSR Programmes

NASSDOC Research Information Series

1. Union list of Social Science Periodicals: Union lists will continually compile and kept updated.
2. Union Catalogue of Social Science Serials: This project first undertaken in 1970. It helps to locate a recognized volume of social science periodicals/serial. Regular Updating undertaken by SSDC.
3. Union Catalogue of Newspapers In Delhi Libraries: It is started in 1978It covers data from newspapers in Delhi libraries.

4. Directory of Social Science Research Institutions and Directory of Professional Organizations In India:
5. Mahatma Gandhi Bibliography: The 1st volume released on Oct 27th 1974. Named 'Mohandas Karamchand Gandhi'.
6. Retrospective Cumulative Index of Indian Social Science Periodicals: It is started in 1976 by SSDC. It covers bibliographical control of periodical literature published over past hundred years or so of the potential utility to social scientists.
7. Language Bibliographies: It covers research materials in all disciplines in social sciences in Indian regional languages.

Facilities Available at NASSDOC

- a. Library and Reference Service;
- b. Collection of unpublished doctoral dissertations, research projects, current and old volumes of selected social science journals of Indian and foreign origin
- c. Literature search service from printed and digital databases, i.e. cd-roms, floppies, online database etc.,
- d. Compilation of short bibliographies on request;
- e. Study grants are made available to doctoral students for collection of research materials from various libraries located in different parts of India;
- f. Financial assistance is provided for taking up bibliographical and documentation projects;
- g. Published bibliographies, directories, reference sources in social sciences are acquired in bulk for distribution among institutions and libraries;
- h. Document delivery service is provided by procuring books and journals on Inter-library loan or by photocopying the documents;
- i. Short-term training courses are organized for the research scholars, social scientists, librarians and IT professionals to acquaint them with the latest information and communication technology; and To cater to the information needs of social scientists, NASSDOC offers many services. These include:

Library and Reference Services

I) Reference and Reading Room is the Central Unit of the ICSSR library. Library is kept open from 9 A.M. to 6 P.M. on all working days (i.e. Monday through Saturday).

II) It has a rich collection of reference sources, bibliographies, 5,000 doctoral theses, 3,000 research project reports (funded by ICSSR) and 26,000 books and documents. This includes books on social science research methodology, status of women, computer and information technology, working papers, seminar papers etc. The

library also keeps priced and non-priced publications of ICSSR including those, for which, the Council has provided publication grants.

III) Documents are available for consultation in the library premises only. Printed publications are available on Inter-Library Loan. The collection is further augmented by about 1500 current Indian/ foreign periodicals, including ICSSR journals and other abstracting and indexing journals in social sciences. The library has over 50,000 bound volumes of periodicals, census reports and other government publications. The library also has a rich collection of doctoral theses and research project reports. Some of these are also available on microfilm and microfiche. Following services are provided by the library:

Consultation Facility: Is provided to research scholars visiting NASSDOC for their research work and for writing papers.

Reference Service: Reference queries in the field of social sciences are entertained via e-mail, telephone, fax, in person, and through correspondence.

Referral Service: In case of non-availability of material in the library, research scholars are referred to other institutions/ libraries.

Literature Search

NASSDOC has a good collection of secondary source data, both in printed as well as in digital format, including 35 CD-ROM databases. The Centre has also created its own databases, both in printed and in electronic format. These databases are useful for scholars for conducting literature search on various topics in social sciences.

Document Delivery Services

NASSDOC, apart from photocopies of documents available in its library also supplies copies of research materials available in other libraries and institutions in India and abroad. Orders can be placed by post, telephone, fax or e-mail.

16.3 SELF ASSESSMENT QUESTIONS

1. Describe the products and services of NISCAIR
2. What are the activities of NASSDOC?

LESSON- 17

**NATIONAL INFORMATION SYSTEMS -
NATIONAL INFORMATION SYSTEM FOR
SCIENCE AND TECHNOLOGY (NISSAT)**

AIMS AND OBJECTIVES

The aim of this Lesson is to explain the objectives and role of NISSAT of India. After reading this Lesson you will understand ---

The objectives; Information services and Future Thrust Areas of NISSAT

Structure

- 17.1 Introduction**
- 17.2 Objectives of NISSAT**
- 17.3 Subject coverage**
- 17.4 Information services of NISSAT**
- 17.5 International Activities**
- 17.6 Future Thrust Areas**
- 17.7 Self Assessment Questions**

17.1 INTRODUCTION

The National Information System for Science & Technology (NISSAT) programme implemented by Department of Scientific & Industrial Research (DSIR), Government of India. NISSAT commenced its operations in 1977 with the objectives of organizing information support facilities for people engaged in research and academics.

17.2 OBJECTIVES OF NISSAT

- Development of national information services
- Promotion of existing information systems & services
- Introduction of modern information handling tools & techniques
- Promotion of international co-operation in information
- Development of indigenous products & services
- Organization of skill development Programmes
- Promotion of R & D in Information Science & Technology

17.3 SUBJECT COVERAGE

The NISSAT programme has the mandate to cover the entire spectrum of Science and Technology. As a proactive and progressive step, NISSAT has taken the onus

on itself to strengthen the library movement in the country through the introduction of modern information technology, tools and techniques. As the boundaries between science and technology social sciences, arts and humanities are fast disappearing, emphasis on activities on one area can not subsist without the support for the other. Therefore, in due course, NISSAT would need to adopt the non - S&T subjects as well.

Underlying Concepts

In tune with the changing global scenario and in pursuance of the national efforts in liberalization and globalization of the economy, NISSAT reoriented its programme activities continually in order to be useful to a wider base of clientele in diverse subjects. Besides establishing the internal linkages between the information industry, its promoters and users, NISSAT has been making efforts to establish a bridge between information resource developers and users in Indian and other countries.

Building on existing facilities

It is the strategy of NISSAT to make the maximum utilization of the available infrastructure and resource base. In pursuance of this strategy, NISSAT uses public telecom facility for networking and service generation; organizes training workshops through professional bodies and institutions; adopts database development projects in institutions with significant information resources and expertise on the specific subjects.

In setting up the various national information centers, NISSAT has always chosen to build around existing nuclei instead of creating denovo. Even today, most of the institutional facilities are meant for in-house clientele only. When NISSAT decides to set up a centre on a subject, an effort is first made to locate a suitable institution having significant information base, considerable professional expertise and a large enough user population. The Host Institution is then enabled to build up, with NISSAT's support, facilities which help them to serve the national community of users better.

17.4 INFORMATION SERVICES OF NISSAT

Information services, cost a lot to acquire, create and distribute. Further, revenue is a direct reflection of the user's real needs and also the efficiency of providers of the information services. Recognizing this since the mid-80's, NISSAT has made it mandatory that all the products created and services rendered by its information centres are fee-based. It is expected that revenue earned would help the centres sustain on their own in due course.

NISSAT had to struggle a great deal to overcome the cultural inertia of information scientists in the country who were hitherto accustomed to provide free-library services. In this context it may be mentioned that a priced service, in contrast to a free service, has to meet users specifications of time and quality. Once this is observed, users do not hesitate to pay for information.

*National Activities*National Information CentresNational Access Centres to International Dataservices(NACIDS)Value-Added Patent Information Systems (VAPIS)National Collection Center for publications on CD-ROM (NCCC)internet based activitiesInformation Resource SharingLIS-Discussion forumCD-ROM Based Services/FacilitiesInformation Technology ApplicationsManpower Development in Information Science And TechnologyResearch & Development And Survey StudiesDatabase DevelopmentNewsletter/Publication□ □ □ Information Today & Tomorrow*Internet based activities*

Web Servers

NISSAT has moved a step ahead by establishing web sites/servers so far on:

Indian Ocean Server, at NIO, Goa.

The Web server on Indian Ocean is a response to the recommendations made by the International Oceanographic Commission. It is also expected to help NIO to integrate its existing information activities for the provision of a one window information service.

- **MYLIBNET at CFTRI, Mysore.**
The NICFOS is initially meant to facilitate the exchange of information among the libraries in Mysore under the MYLIBNET Programme and in due course organize information on Indian food Industries.
- **Indian Consultancy at CDC, New Delhi.**
the Indian Consultancy site hosts home-pages of consultancy organizations, their area of activities and also a market for consultancy offers and those required.
- **Indian S&T at the IISc, Bangalore.**
The S&T server project would be operational in 1999. It would include home-pages of R&D and academic institutions, information on materials and supplies, forthcoming events, employment opportunities, extra-mural support schemes of various agencies and so on.
- **Indian Tea Website by Tea Board, Calcutta.**
- **Intellectual property law learning website at National Law School of India, University, Bangalore**
The IPR learning Website would help Indian Teachers, Academicians and Researchers in getting composite information and materials on intellectual property. The content of the website include Indian Laws including revision on patents, copyright, trademarks and design etc; implications of new developments on database treaty, patent bill, Paris convention etc; Regime of legal cases in Indian Courts, Indian

patent Database, FAQ, News items, Indian Publications etc. This website is ready for launch.

LISFORUM

Lisforum is a facility for the exchange of notes, views and expression on Library and Information Science: Technologies, Product and Services, Tools and Techniques etc. In collaboration with the NCSI at IISc, Bangalore NISSAT has set up an Electronic Mail Discussion Forum called **LISFORUM** for providers and users of information services in India.

Information Resource Sharing

NISSAT has taken initiatives for promoting resource sharing activities, aimed at ensuring better utilization of information resources. Besides the development of library networks, the programme included preparation of union catalogues, consultative mechanism for rationalization of periodicals, and development of a concept of universal library access. The last two activities have been dropped for want of users interests.

Library Network

The NISSAT agenda for library networks is limited to the development of metropolitan systems, the logic being that libraries and library users in close geographical proximity can effectively utilize a library network. Given this, the goal of information/library networks is to interlink information resources in a metropolitan area such that users could access information irrespective of its location, format, medium, language, etc. Further, the development of such networks requires actions in several areas such as training, rationalization of acquisition of information resources, diffusion of standards, preparation of union lists, generation of database services apart from setting up hardware, software and communication facilities.

NISSAT strives further to develop self-sustaining information systems. With this end in view, NISSAT goes to the extent of setting up general infrastructural facilities like network service centres including hardware, software, manpower, organizational requirements and communication facilities. The participating institutions in a network have to arrange for their own terminal hardware, software, manpower and to take the responsibility of database development. Of course, NISSAT extends support for training, and common facilities like development of standards, preparation of union catalogues, data conversion and so on.

The following Table provides a list of Network Hosts and network services management bodies and the sponsor - in this case, it is NISSAT.

Table 3.NISSAT Sponsored Metropolitan Information/Library Networks*

Network	Host Site	Management
<u>ADINET</u>	INFLIBNET, Gujarat Univ. Campus, Ahmedabad	Society drawing support from INFLIBNET
BONET	National Centre for Software Technology, Bombay	Institutional Project
<u>CALIBNET</u>	Regional Computer Centre, Jadavpur Univ. Campus, Calcutta	Society
DELNET	India International Centre, New Delhi	Society drawing support from IIC
<u>MYLIBNET</u>	CFTRI, Mysore	Institutional Project
<u>PUNENET</u>	Bio-Informatics Centre, Pune Univ. , C-DAC and NCL, Pune	Institutional Project

Network activities like creation of OPAC bases, document delivery service facilities, inter library loanlocal couriers (ILL), current awareness services (CAS), rationalization of periodicals acquisition, creation of union lists of current subscriptions are taken up. Withchanged IT options, E-Mail, Remote login/ftp, Internetaccess services are offered to the participants. Networkservices centres also provide Online and CD-ROM based search services .

Union Catalogues

NISSAT intends to promote & support development of Union List of Current Scientific Serials (ULCSS) in major cities. These union lists serve as valuable tools forresearchers, academicians and library professionals toaccess information, to identify the gaps in serials resources and to help in the rationalization of acquisition **of serials. For this** purpose, a software onCDS/ISIS platform has been developed for database development and information retrieval.

CD-ROM Based Services/facilities

The NISSAT centres provide selective dissemination of information and custom search services to their clientele. CD-ROM titles such as: ADONIS (NCSI), BIOSIS (CLRI),Chemical Abstracts, ChemBank, CA/SCI (NCL), Compendex Plus(CMTI), Inside Information (ADINET, BONET, CALIBNET, PUNENET), INSPEC (NPL), NTIS (NAL), LISA (DRTC),SCI(INSDOC), Drugs & Pharmaceuticals Abstracts (CDRI), BNB and LCMARC (at library network service centres) are some of the CD-ROMs available. A Union list of CD-ROM databases acquired in various library/information centres in India is being prepared by the CD-ROM National Collection Centre, IIT, New Delhi(link to their website or link to our on page for detAILS). You are requested to send the information regarding

CD-ROM Databases available in your or any other library so that national collection can be strengthened.

Information Today & Tomorrow (ITT)

A national meet of information industry, promoters and users, is held every year. It started off as the Indian CD-ROM & Online Meet in 1993. After two events in Delhi and one in Chennai, the coverage was broadened to cover a variety of related subjects. The Information Today & Tomorrow meet, as it is popularly called, was held in Delhi during 1994, Calcutta 95 and Pune 97, Chennai 98 and Hyderabad 99.

Database Development

In pursuance of its thrust on contents development, NISSAT encourages indigenous database development activities. Besides library catalogues, union catalogues and lists, the activity could be on subjects in which a global database does not exist, or on subjects in which Indian elements are not properly represented.

NISSAT encourages the preparation of directories, factual databases value-added products besides bibliographic ones. While its information centres are already on the job, NISSAT has initiated dialogue with other professional institutions and registered societies to get them interested in the activity.

Given the wide base of professionals proficient in English language, huge population of the educated and Under employed, and wide ranging computer skills, India could find a niche in the global database market in future, as in the case of its computer software industry. Further, its strong cine, and TV software industries, could help in low cost multi-media productions.

17.5 INTERNATIONAL ACTIVITIES

A national system can not function effectively without appropriate international linkage. This linkage ought to be both for the flow of information resources as well as for the concepts, methodologies, techniques and tools. Realising this, India had close interaction with the Division of communication, Information and Informatics (CII) of the UNESCO and the ASTINFO (The Regional Programme for the Exchange of Information experiences in Asia and the Pacific).

UNESCO's principal contribution to Science and Technology Information System in India has been the germination of the NISSAT concept itself. Thereafter UNESCO had supported activities that strengthened the foundation and various building blocks of the system.

17.6 FUTURE THRUST AREAS

In keeping with the global information scenario, NISSAT's thrust areas have also been changing from one five year plan to another. During the Seventh Five Year Plan, the objective was to create a foundation on which the modern information activities could be built -- therefore, introduction of computer technologies in LIS environment and development of endogenous capabilities were emphasised. The Eighth Five Year Plan was the period of consolidation, establishment of facilities

for accessing the global knowledge base, and interlinking of Indian Information Centres were accorded priority. The Ninth Five Year Plan will see developments towards globalisation of the Indian Information market. Some of the existing activities will require reorientation:-

- The present library networks should evolve into information networks, with emphasis on non-bibliographic information for better market acceptance.
- Database development activities would also be in areas like business, financial, industrial, technological and public information.
- Apart from running short-term continuing education programmes, regular formal courses on modern IT applications may be set up.

During the current plan, the activities will be woven around utilization of information highways and the Internet. The programme will inter alia include :

- Establishment of a chain of sites on different subjects
- Establishment of Internet training schools to run courses on web site management, home-page development and especially subject specific information searches
- Provision of Internet connectivity to library & information centers
- Development of web-based course materials of selected subjects
- To encourage the growth of the nascent information industry in the country, abroad-based scheme to promote and support public institutions and private enterprises, in information resource development and service generation will be launched. At the users end, a systematic approach to sensitize and educate users enhancing their search capabilities will be evolved.
- The reach of modern information systems hardly ever extends beyond the urban areas, and literate clientele. It is necessary that people living in rural areas, illiterate and backward communities also benefit from the fruits of information technology revolution. Further, certain items of information for the public that people ought to know for their day-today living and for coping up with the emergencies, would be packaged and appropriate dissemination mechanism set up.
- NISSAT has already taken steps for dissemination of information on patents through its information centres. Going further, NISSAT intends to run a series of workshops on patents information for industrial R & D and seminars on copyright for library, information and software personnel. It also intends to build up a compendium of case studies on patents information and copyright, besides a database of frequently asked questions.
- It is also felt necessary to evolve a mechanism for capturing information on folk wisdom, biodiversity, ethnic practices etc. This will serve two fold

purpose, one to take benefit of the existing knowledge and material base, and second, to help registering these against uncalled for exploitation through patents by other countries.

- Given today's high cost of travel and the opportunity cost of time spent to attend training courses, NISSAT will experiment with skill-upgradation through distance education courses using modern telecommunication systems like web-based teaching/learning and teleconferencing. However, for these, NISSAT would piggy-back on existing networks.
- Since information sources and services in the country are disparate, an information referral system will be established together with an intelligent gateway to facilitate our users accessing domestic and foreign information and foreign users accessing Indian information services.
- In view of the rapid changes in the global and domestic information and information technology scenarios, a regular mechanism to continually monitor trends, assess their relevance to our conditions and to forecast the shape of things to come will be established. NISSAT also proposes to prepare the Indian Information Report in the lines of the World Information Report brought out by the UNESCO.
- The potential employers like industries, national laboratories often observe that candidates knowledgeable in modern information tools and techniques are difficult to find. Since only a limited purpose could be achieved through continuing education of practicing library and information scientists, it might be worthwhile to catch them young. This warrants intervention at the library Schools. For this purpose, NISSAT would propose to provide support to a few selected library and information schools for introducing subjects on modern information handling techniques under the NISSAT scheme.
- The CD-ROM has emerged as a powerful technology for application in decentralised information system development. However, in India we are yet to make a beginning. It is therefore proposed to bring out CD-ROMs on Indian bibliographic, numeric and directory type databases and also a CD-ROM version of selected Indian periodicals.

Since it is difficult for intending users to access libraries outside their own institutions, a scheme is being designed to facilitate utilization of large libraries by outside users especially those from industries. A pilot project on the concept is being set up in the IIT, Delhi.

17.7 SELF ASSESSMENT QUESTIONS

1. Explain the objectives and programmes of NISSAT

LESSON - 18

INTERNATIONAL INFORMATION SYSTEMS – INIS

AIMS AND OBJECTIVES

This Lesson aims to explain the INIS as a global information system. After reading this lesson you will understand concept of INIS, its coverage, objectives, input and output activities.

Structure

- 18.1 Introduction**
- 18.2 Coverage of INIS**
- 18.3 INIS input and Membership details**
- 18.4 INIS OUTPUT Products and Services**
- 18.5 INIS in India**
- 18.6 Self assessment questions**

18.1 INTRODUCTION

INIS is the world's information system on the peaceful uses of nuclear energy operated by the International Atomic Energy Agency (IAEA) in cooperation with its member states and international organizations. Located in Vienna (Austria), it provides a comprehensive information announcement service for literature in nuclear science and technology. INIS processes most of the world's scientific and technical literature falling within its subject scope, namely, peaceful uses of nuclear science and technology.

18.2 COVERAGE OF INIS

The following fields are covered by INIS:

Physics, including physics of elementary particles and fields, nuclear physics, atomic and molecular physics, plasma physics and fusion, physics of condensed matter, general physics:

Life and environmental sciences, including the effects and other aspects of radiation and radioisotopes in biology, applied life sciences, radiation protection and environment, radiology and nuclear medicine:

Chemistry and materials studies of relevance to nuclear activities:

- Earth sciences studies of relevance to nuclear activities:

- Isotope production and radiation sources, isotope and radiation applications:
- Other aspects of nuclear energy, including economics and sociology, legal aspects, nuclear documentations, safeguards, mathematical methods, and computer codes, other aspects relevant to nuclear activities.

18.3 INIS INPUT

- Set up in 1969, the basis of INIS is international cooperation. It is the first international information system in which both the collection of input and the dissemination of output to users are decentralized. The data processing and output production are the only operations that are centralized at the INIS Secretariat located in Vienna. The decentralized method for input and output was chosen as it offers the following advantages:
 - Most comprehensive coverage of the nuclear literature.
 - Enables effective handling of information in various languages.
 - Facilitates provision of most satisfactory services to users.
 - INIS has been highly successful information system and some of its distinguishing features are:
 - INIS file containing over 1,500,00 items.
 - Addition of around 90,000 items per year.
 - A microfiche collection of over 250,000 documents comprising of scientific reports brochures, dissertations, patents, etc.
 - Worldwide use of INIS Atomindex—the printed abstract journal for literature of nuclear science and technology.

Membership

The membership of INIS is open to the following categories.

States who are members of the IAEA:

UN organizations; and

Other subject-oriented international or intergovernmental organisations.

About 80 members states and 16 international organizations are participating in INIS.

Operation

As already stated, INIS has adopted a decentralization method for data input and output. INIS members share the following responsibilities:

- Collecting descriptions of the nuclear literature produced within their national/organizational confines, both available through commercial and non-commercial channels.
- Preparing the associated input in accordance with INIS guidelines and submitting it to the IAEA.

- Providing INIS information services and products to users within their national/organizational confines.
- INIS Secretariat collects the input submitted by INSI members, checks quality control and produces the output products. To ensure consistency in its input and output operations, INSI has prepared a series of manuals under the INIS Reference Series. INIS mostly follows international standards and implements new standards developed by the International Standards Organisation (ISO). INIS organizes a number of training programmes, seminars and workshops for its members.

Creation of the INIS Record

Subject specialists in the INSI members' inputting centres select documents for input into the system and classify them according to the INIS subject categorization schemes. Generally, an INIS record contains three parts:

- A bibliographic description identifying author, publisher and such other details.
- A set of descriptors identifying the subject content of the document.
- An abstract summarizing the information contained in the document
- The bibliographic description is prepared according to IAEA-INIS-1, INIS: Descriptive Cataloguing Rules. The descriptors to identify the subject are assigned using the INIS Thesaurus. INIS Thesaurus is edited continuously and new terms are added parallel with the processing of INIS input. Revised editions of INIS Thesaurus are published once in a year.
- The input is submitted by the inputting centers of INIS members either in machine-readable form or on worksheets.

18.4 INIS OUTPUT PRODUCTS AND SERVICES

INIS Atomindex and Cumulative Indexes

This is a semi-monthly announcement and abstract journal. It consists of a main entry section (bibliographic description and abstract) and a number of indexes. The main entries are arranged by subject categories and within each subject category, report literature is listed first, followed by journals and books. The semi-annual Cumulative Index is available only on COM microfiche since 1988.

INIS Non-Conventional Literature Microfiche

This service covers non-conventional literatures such as scientific and technical reports, patent documents, pre-conference papers and non-commercially published theses. The INIS Clearing-house, a unit within the INIS Secretariat of the IAEA, provides microfiche copies of non and patent number indexes of INIS output products. With the help of the report, standard and patent number index of INIS atomindex, one can order microfiche copies of non-conventional documents from the INIS clearinghouse.

INIS Computer Output Management (COM) Microfiche

The INIS Clearing house installed a Com system to produce microfiche from machine –readable data. The following products are available on COM microfiche:

- Cumulative Indexes to INIS Atomindex
- Semi-annual Cumulative Index
- Annual Cumulative Index
- Current and back issues of INIS Atomindex

INIS Magnetic Media Service

In this service, current or back numbers of magnetic tapes or cartridges containing the checked and processed input submitted to the INIS by its members are provided.

EDIN

This is an INIS education file containing 6000 records selected from the INIS database and is made available on-line for user training without any charge.

INIS on CD-ROM

This contains records from 1976 to the present and is updated at quarterly intervals.

INIS Reference Series

This consists of rules, instructions, guides, formats and codes, etc. on which INIS is based. Some of the manuals produced by INIS are:

- a) INIS: Descriptive Cataloguing Rules
- b) INIS: Thesaurus
- c) INIS: Manual for Indexing

18.5 INIS IN INDIA

The Library and Information Services Division of the Bhabha Atomic Research Centre (Mumbai) is responsible for all activities related to INIS in India. These activities can be mainly divided into:

- Input preparation for INIS;
- Use of INIS output products (e.g., INIS output magnetic tape for information retrieval; INIS CD-ROM for retrospective searches.) India has been participating in INIS activities since 1970.

Sources

- About 7,600 journals and serials (58%)
- Reports (23%)
- 30% of all citations are conference contributions
- Books (8%)
- Patents

- Other non-conventional literature

File Data

- 1970 to present
- More than 2,332,630 records (10/02)
- Updated weekly
- Automatic current-awareness searches (SDIs) are run weekly

User Aids

- INIS Thesaurus
- Authority List for Journal Titles
- Subject Categories and Scope Descriptions
- Authority List for Corporate Entries and Report Number Prefixes
- Terminology and Codes for Countries and International Organizations
- Online Helps (HELP DIRECTORY lists all help messages available)
- STNGUIDE

18.6 SELF ASSESSMENT QUESTIONS

1. Examine INIS as a global mission oriented Information system

LESSON - 19

**INTERNATIONAL INFORMATION SYSTEM
FOR AGRICULTURAL SCIENCES AND
TECHNOLOGY (AGRIS)**

AIMS AND OBJECTIVES

This lesson aims to explain AGRIS as a mission oriented international information system. After reading this lesson you will understand the activities and functions , services and products of AGRIS.

Structure

- 19.1 Introduction**
- 19.2 Functions of AGRIS**
- 19.3 Activities**
- 19.4 Users of AGRIS**
- 19.5 Products and Services**
- 19.6 Current Agricultural Research Information System (CARIS)**
- 19.7 Self assessment questions**

19.1 INTRODUCTION

AGRIS was launched in 1975 by the Food and Agricultural Organisation of the United Nations to facilitate exchange of information and to identify world literature pertaining to all aspects of agriculture:

- Plant and animal production and protection
- Post harvest processing of primary agricultural products;
- Forestry;
- Fisheries;
- Agricultural engineering;
- Natural resources and the environment as related to agriculture;
- Food;
- Human nutrition;
- Agricultural economics;
- Rural development; and
- Agricultural administration, legislation, information, education and extension.

19.2 FUNCTION S OF AGRIS

1. Create a single comprehensive, current inventory of world wide agricultural literature which reflects research results, food production and rural development and also help users to identify problems involved in all aspects of world food supply;
2. Meet information needs by means of selective dissemination of information services and specialized subject retrieval services, and to provide means of fulfilling requests for documents, and
3. Interact with new and or/existing secondary specialized information services so as to increase efficiency and eliminate unnecessary duplication of research.

Regional Centres

The Agricultural Information Bank for Asia (AIBA) in the Philippines, covering the ASEAN countries, Bangladesh and the Republic of Korea
The Commission of the European Communities (CEC), in Brussels, Belgium, covering the EEC countries and Portugal;

The Cebtro Interamericano de Documentacion e Informacion y Commicacion Agricola (CIDIA)in Costa Rica, covering the Latin America (except Brazil and Cuba) and the Caribbean.

The emphasis is more on the subject content than the bibliographic form. Two products are from AGRIS 1. AGRINDEX 2. AGRIS magnetic tape. These two documents contain full bibliographic descriptions for all documents and the facility to retrieve information from the AGRIS database. The System is managed by the AGRIS co-ordinating centre (ACC) in the FAO Headquarters in Rome which has the overall responsibility for its development.

19.3 ACTIVITIES

AGRIS collects bibliographical information from all over the world on Scientific, technical and socio-economic publications issued on a wide variety of food and agricultural matters. AGRIS compiles the information in a rational, systematic form, and publishes it in a monthly bibliography.

Agrindex and AGRIS tapes contain detailed information allowing all these papers to traced; their titles (with English translation for papers originally issued in another language), their authors, the journal of volume in which they appeared, with the date, page numbers and allied bibliographical data, together with the indication of how they can obtained or where they can be consulted. All this material is arranged by subject and indexed completely.

AGRINET system a cooperative network of agricultural libraries throughout the world.

19.4 USERS OF AGRIS

1. Research, comprising basic and applied researchers and scientists in general
2. Agricultural production and development techniques, comprising agricultural technicians who do not carry on research but apply it (eg. Agricultural animal husbandry officer), extension workers, those connected with production and product preservation, with producer cooperatives, and officers of development departments.
3. Education, including university professors, agricultural teachers and students
4. Economics- macro and micro economics, statistics, studies and preparation of agricultural projects.
5. Technology and Industry and all specialists in activities for processing of agricultural produce, cold storage etc.
6. Trade Marketing, including people connected with market Studies etc,
7. Credit and financing agencies, rural banks
8. Politics, Legislation, grouping governments, officers and planners involved in political decisions in administration, price control, taxation and agricultural legislation, members of parliament, etc.
9. Documentation Information, in the complete sense of the term

Training Programmes

- a. Training materials, self-training materials and education tools
- b. Training seminars, organized and formalized courses mainly held at the regional level, and
- c. In-service training, less formal training either at FAO headquarters in Rome and /or the APU in Vienna, or locally at input centres during visits by ACC staff.

AGRIS aims to collect bibliographic references pertaining to both conventional material like journal articles, books, and non-conventional materials (commonly referred to as 'grey literature') such as theses, reports, etc. which are not available through commercial channels. The AGRIS data base has over 2.3 million references.

Like INIS, AGRIS also operates as cooperative system with decentralization of its operations. The members countries contribute references of documents published in their countries to the AGRIS and in return gain access to the information provided by other participating countries.

The data contributed by participating countries is processed in Vienna at the AGRIS Processing Unit hosted by the Division of Technical Information of the IAEA.

AGRIS membership comprises of 146 national and 25 regional and international centres and they together contribute about 11,000 reference every month. There are two regional centres which take care of inputting of bibliographic references pertaining nine countries in their respective regions.

AGRIS/CAROS Coordinating Group, which is a part of Library and Documentation Systems Division of FAO (Rome) manages the AGRIS. It is also responsible for the maintenance of the AGRIS methodology and working tools and for providing training/self-teaching material.

AGROVOC is a multilingual agricultural vocabulary developed by FAO and the European Community (EC) in the early 80s. Since 1986, AGRIS has been using AGROVOC for indexing and information retrieval to enable even non-English speaking users to utilize its services. AGROVOC IS available in a number of language versions such as English, French, Spanish, German, Arabic and Italian.

AGRIN is a new working tool prepared for the use of the AGRIS participating centres. It is a microcomputer package based on Unesco's CDS/ISIS and it helps these centres not only to exchange AGRIS has also developed HEURISKO—an interface also based non Unesco's CDS/ISIS and utilized for CD-ROMs produced in-house.

19.5 PRODUCTS AND SERVICES

AGRIS disseminates the information to users in the following ways:

Agrindex: This is the monthly AGRIS bibliography published in three languages: English, French and Spanish. About 21% of entries in Agrindex contain abstracts;

Magnetic Tapes: The information contained in Agrindex is sent to AGRIS centres on demand in the form of magnetic tapes.

On-line access to the global AGRIS databases is offered through a number of hosts such as DIALOG and DIMDI (Cologne). The most recent portion of the AGRIS database which does not appear in the current AGRIS CD-ROM is offered on-line at IAEA (Vienna)

Internet Access to AGRIS is provided by Silver Platter.

Cd_Rom (Compact Disk Read –Only-Memory): The AGRIS databases are available on CD-ROM too covering the years 1975 to the present. The AGRIS FHN (Food and Human Nutrition) database covering the period 1975 to the present is also available on CD-ROM.

AGRIS-Fisheries and Aquaculture 1975-1993, produced at FAO, is available at the AGRIS/CARIS Coordinating Group.

AGRIS CD-ROM on Forestry with the HEURISKO interface has also been produced.

In addition to the above, AGRIS provides the following services through its national/regional/international participating centers:

- Retrospective searches of the complete database.
- SDI service to keep users informed of new references in their subject of interest.

- National bibliographies consisting of all references either produced in a particular country or pertaining to that country but published outside .
- Subject bibliographies compiled by specialized cooperating centres such as FAO divisions and IARCs.

AGLINET is a cooperative network cultural libraries throughout the world being developed under the umbrella of AGRIS.

The Indian Council of Agricultural Research (ICAR), Pusa New Delhi, acts as the national focal point (NFP) for AGRIS services in India.

19.6 CURRENT AGRICULTURAL RESEARCH INFORMATION SYSTEM (CARIS)

CARIS was developed by FAO to identify and to facilitate the exchange of information regarding current agricultural research projects being carried out in, or on behalf of, developing countries. It covers projects dealing with all aspects of agriculture: plant and animal production and protection: post harvest processing of primary agricultural products: forest fisheries: agricultural engineering: natural resources and the environment and related to agriculture: food: human nutrition: agricultural economics: rural development: and agricultural administration, legislation, information, education and extension.

CARIS is an international cooperative system with member countries/institutions submitting information on research conducted within their countries/boundaries and accessing similar information provided by the other participating countries/institutions. CARIS has 121 national and 16 regional and international centres as its members. These members have submitted information on about 30,000 current active research projects. there are two regional centres collecting information on behalf of 6 countries falling within their respective region.

The data provided for each research project includes.

- 01 Title and objective for the project, beginning and ending dates and duration;
- 02 Name and address of the institution where carried out; and
- 03 Names of researchers and their specialization.

CARIS store the data in three language,namely,English,French or Spanish and indexing is done using AGROVOC.this feature enables a user to retrieve information using any of these three languages.

CARIN is a microcomputer package based on unesco's CDS/ISIS and develop by FAO to, serve as a working tool for the CARIS participating centres. It helps them to exchange data with the coordinating group (Rome)and to develop local data bases compatible with CARIS.

Products and services

CARIS maintain an active database; it regularly adds new research projects and deletes those projects which are completed. the data sent by participating countries is processes at FAQ(ROME)and stored on a mainframe computer using CDS/ISIS. CARIS database can be accesses in a number of ways:

01 .CARIS CD-ROM 1994 lists 26,694 research projects .

02 Magnetic tapes or diskettes containing information on research projects(globally/country-wise/resign-wise)in ISD-2709 format are sent to CARIS centres on request.

03 National inventories of research projects are provided to participating centres on demand. a national inventory is a master copy in ready to print form with projects descriptions and full indexes

04 On-line access to the CARIS global database is provided at FAQ and the user can search by subject ,country, institute and research.

19.7 SELF ASSESSMENT QUESTIONS

1. Examine AGRIS as a mission oriented international information system.

LESSON - 20

DATABANKS AND DATABASES AND ONLINE SERVICES

AIMS AND OBJECTIVES

The aim of this lesson is to explain the concepts of Data banks, Data Bases and some of the online databases and services.

Structure

- 20.1 Introduction**
- 20.2 Types of databases**
- 20.3 Data banks**
- 20.4 CD ROM and Online databases**
- 20.5 Online searching**
- 20.6 Self Assessment Questions**
- 20.7 Suggested Readings**

20.1 INTRODUCTION

A Database concept has evolved out of traditional file processing or management system. It was in the early 1970's that the database systems were introduced. A database, as defined earlier, is a collection of related and cross-referred files, designed and created to minimise the repetition of data. These integrated files are part of over all database system including the specialized software called Data

Management System (DBMS)

A database can be defined as computerized collection of logically related data or data records about something (say about an enterprise, objects, or certain problem areas) that are stored organized structured in the computer in such a flexible manner that it enables people to get information out of it very quickly.

20.2 TYPES OF DATABASES

Integrated : The new database techniques have made it possible to integrate several otherwise separate or partitioned data files (or databases) so that different programs can use the same data files (or database). An integrated database support two or more library functions. Besides in an integrated database redundancy among the files is partially or wholly eliminated.

Shared : By shared database we mean the individual pieces of data or data records in the database which may be shared among several different users, in the sense that each of database users may have access to same piece of data or records and may use them for different purpose.

Distributed : is one that resides on two or more computers simultaneously. The database can be partitioned and physically distributed among several locations/computers (sometimes referred to as nodes), usually quite far removed from one another or replicated at more than one node.

Bibliographic : are the components of bibliographic information systems which maintain data about collections of documents or publications.

20.3 DATA BANKS

Data is general term of information. It is used by scientists, engineers, researchers and other groups of people frequently in their day to day activities/pursuits. Data centres and Data Banks are used synonymously. But databanks are used many a time to indicate the storage of numerical data.

Databank is a kind of data centre, where the raw data is stored for future consumption/use like banks, where money is preserved. It is distinct from general banks as data on consumption/use do not replenish or exhaust unlike the money when it is used from banks. However, bigger compilations of data, tables etc may get outdated and obsolete sooner, and become a handicap for advancement of science, technology, industry etc

UNESCO defines a Data Centre as “an organization handling quantitative numerical data, which offers data services”.

Functions and Objectives

The main objective of data centre is to maintain raw or partially processed data or its results. The other function of data centre are data evaluation, compilation, dissemination including referral activities. They are meant precisely for handling quantitative numerical data.

History

In mid 1960's computerized databases were developed as a by-product of publication methods for abstracting journals, mainly in science and technology. The databases could initially be searched only in batch mode which it possible to alter the search strategy used as the search progressed.

The early 1970;s Development of systems for interactive online searching of databases by two large US corporations-Lockheed DIALOG and systems development corporation (SDC) accompanied by advances in telecommunications, 'Interactive' searching means that the results of the search can be viewed as search progresses and alterations to the search

Strategy can be made if necessary. The mid 1970's development of European host services, eg. ESA-IRS by the European Space Agency and BLAISE by British Library. A total of 5026 dabases are available as on july 1991.

20.4 CD-ROM & ONLINE DATABASES

Both types of database are their own advantages and disadvantages. Charges for online databases are unaffordable for libraries in the developing countries and also telecommunication facilities in the developing countries are expensive. But CD-ROM databases provides easiness to massive amount of well indexed information with out telephone links and very low cost. CD-ROM media has increased in the market in the late 1990's It is an effective portable medium of information .

Important CD-ROM products and Databases Available

1. Books in Print plus : R.R. Bowker, International Computer Print, and online computer system, Inc., U.S.A. have produced Books in Print and Ulrich's International Periodicals Directory in CD-ROM format under the name of Books in Print Plus and Ulrich's plus
2. Reference Works : Grolier became the first publisher to publish CD-ROM version called Electronic Encyclopedia.
3. Oxford English Dictionary : Tr-Star publishing has produced CD-Rom version
4. Indexes and Abstracts : CD-ROM technology presented an ideal medium for publishing bibliographic and index databases for full or partial distribution. Information Access company (IAC) Became the first company to enter the index market with the videodisk version of magazine Index called Info Trac.
5. Dialog on Disk : DIALOG Information Services soon introduced DIALOG on disk of CD-ROM products.
6. Silver platter Information Inc. : It produces ERIC, it covers current journals in education. MEDLINE, it includes most recent five years of bibliographic citations and abstracts of the MEDLINE complete database .
- 7.

CD-ROM Data Bases Evaluation

1. Database contents and Scope
2. Access Points a. Retrieval software and indexing b. Quality of the Software
3. Efficient, effective access software
4. Search interface
5. Online tutorials and help
6. Documentation
7. Data Access time

Online Databases

The cost of the online searching has diminished considerably during the past few years. There are so many databases for ex; COMPENDEX(engineering Index), INSPEC(Information about physics and engineering), NTIS(Bibliographic reference database on science and technology),SCISEARCH(Bibliographic database on Science and technology)

COMPENDEX : In 1969 Engineering Index Inc. introduced COMPENDEX. This publication exists to satisfy the information needs of the engineering community of the world. About 65 percent of the journal references make up the largest portion of the database. References to conference proceedings constitute another 30 percent of the file the remaining 5 percent are the abstracts taken from

reports, monographs, or standards. All records are indexed using a controlled vocabulary list called subject headings for engineers (SHE). Especially in the computer science and electronic literature, new terms or technical jargon appear in article which do not have corresponding indexing terms. In such situations indexers may add free language terms to the record which more accurately describe its contents. Retrieving information is by classification codes.

INSPEC

International Information for the physics and Engineering Communities (INSPEC) first became available online in 1969. Covers Physics, electrical and electronics engineering, computer science and control engineering. The main portion of the data base approximately covers 80 percent of journal articles conference papers make another 15 percent. INSPEC provides a variety of search options. In addition to the standard search elements such as author, title, language and journal fields, each document record includes controlled index terms, classification codes and treatment codes.

20.5 ONLINE SEARCHING

Definition: On line searching is defined as means of finding desired information through

Bibliographic references and full-texts by using a computer in an interactive way (Knapp, 1983). It is the process of direct interaction with the computer to resolve particular requests for information, that communicate with another computer system (possibly at a remote place) which contains fields of data (Hartley, et. Al. 1990).

Equipment required for online search: The basic equipment needed for online search from remote databases are;

1. A terminal or workstation,
2. Telephone,
3. A modem or an acoustic coupler and
4. A printer.

Terminal : A microcomputer is used as the terminal. Its speed of operation, parity and duplex settings should be compatible with those of the host or the online service. The speed of the terminal can range from 300 baud to 2400 baud or more depending upon the requirement. The logging can be automatic and the retrieved records can be downloaded.

Telephone: A direct dial telephone connection is preferable.

Modem or Acoustic coupler : A Modem is required if the equipment is to remain on the site, but if the equipment is to be moved from site to site a modem acoustic coupler can be used. If several terminals are used for online access through a local area network (LAN) the use of modem at each terminal is not necessary.

Printer : A printer with a capacity to print large volumes of the search output can be used. It should be compatible with the terminal or microcomputer used in the online search.

Online search process : Online search process in the searcher (end-user or information intermediary) sits at a terminal or work station in a library, information centre, office, laboratory or even at home and connects the terminal through a local telephone, acoustic coupler or modem to computer in another location. Using password the searcher is linked to the host computer and requests access to particular systems, and databases of interest. The interaction language of the system is so designed that it permits the user, even without computer programming background to retrieve and display specified records or information on the computer. In some cases, it allows the user to rearrange the information, to do statistical, graphical and other types of manipulations and downloading into a local database. The searcher may be an information intermediary attempting to find references or information in response to an end-user's query or it may be the end-user directly attempting online search. In many online services, there may be separate files of different types of division of the database into files increases the need to search multiple files so as to ensure comprehensive coverage for a given query. Libraries and information centres may have to adapt the online database services to suit specific needs of their respective clientele.

As users are located remotely from search services they have no control over the scope, depth, quality, etc., of the information in the databases.

Searching through online database services

Online databases can be searched by the following ways:

CD ROM networks

Multimedia services

Directly through online database services

Internet

Of these, searching the online database services often requires the help of an information specialist or information intermediary. The success of an online information search and retrieval from remote databases can be affected by a number of factors, but in a large measure depends on the searcher's understanding about the following :

Online search services,

The search language databases,

Characteristics of databases,

Ability of the searcher to formulate an expression representing precisely the information needs of the end-user.

An online search is an interactive, interactive and heuristic process. It is basically a trial and error exercise in which the searcher is in a conversational or dialogue mode with the system. The searcher has to constantly refine or reformulate the search strategy depending on the response of the system to obtain the best search results. Online services

Generally permit the formulation of search expressions using Boolean Operators AND, OR, NOT; some services permit the use of other operators : greater than, less than, equal to, Adjacency or proximity, parenthesis, truncation, and partial string matching etc., as well. Also facilities, such as nesting, back referencing, field qualification and expanding a particular term are available in some of the services for

building logical sets of documents, to modify a query progressively on the basis of the intermediate search results obtained. The systems permit the retrieved records to be displayed on the computer or printed off-line according to the predefined format(s) or in some cases, according to the user defined formats(s).

Precautions in Searching

Most online information retrieval services use Boolean Operators in formulating search expressions. The Boolean retrieval mechanism operates on the inverted file of the database. Certain precaution are to be observed while working with Boolean Operators:

- (i) The query must be fully and precisely stated suitable to logical search manipulations
- (ii) Incomplete or open-ended queries are to be avoided.
- (iii) The matching of the logical search operation and the language by which the corresponding data/record are arranged, is to be exact for successful retrieval, otherwise the document will no be retrieved. Partial matching does not produce the desired search results.
- (iv) The retrieved documents do not have any order of combination, order of preference or order of relevancy.

Causes of Failure

The causes of failure in retrieving the relevant information on online searching are many.

These are responsible for the mismatch between the information needs and the search results. The cause of failure can be summarized as follows (Fenichel, 1980-1981)

- (i) Approaches to searching vary considerably, from one searcher to another even on the same system and database.
- (ii) Major problems of most searchers are with the search strategy and not with the mechanics of the retrieval system
- (iii) Many searchers perform simple searchers and do not browse the retrieved references to check the adequacy of a search formulation or to improve a search, that is, they do not make full use of online interactive facilities.
- (iv) The online search process tends to be sensitive to many factors in addition to the skill of the searcher and the nature of the question. The important factors are:

Institutions attitude to online searching,
Cost of service and economic considerations
Search environment,
Capacity and flexibility of the system,
Structure and organization of database.

The unsatisfactory search results can arise from inadequate end user/information specialist interaction, selection of inappropriate databases, inadequacy of and/or inadequate understanding of the search language of the database service resulting in less effective search system interface etc., Therefore, a knowledge about and an understanding of the characteristics of online services, their databases, the search language used, the formulation of search expression and search, and specification of user-needs can assist in

adopting measures and techniques to improve search results vis-a vis end-user needs.

Major approaches to searching

A search strategy is an overall plan or approach to search a database. An important first step in the plan is the analysis of the search problem. An end-user of a search service may not always be able to specify his/her information needs precisely. It is, therefore, highly desirable that the information specialist/search intermediary conducts an interview with the end-user and also have the latter present to assist during the search process. A combination of the precise subject knowledge of the end-user and the system knowledge of the searcher is likely to yield better results from the online search. Major approaches to searching online services are described below:

Brief search

It involves a single search formulation and simple Boolean combination of a few search terms. It is a fast and relatively less expansive way of getting a rough idea about what a database contains or a subject:

Building block method

In this method each concept of the query is enlarged/enriched by synonyms and related terms using Boolean Or to build smaller blocks which are then combined together by AND to produce the answer set.

Ex. Query: Microcomputer software package for information retrieval.

S1 Computer OR microcomputer

S2 software OR packages

S3 Information retrieval

S4 s1 AND s2 AND S3

The approach is logical in construction, but takes time while searching. It requires knowledge about the appropriate vocabulary, vocabulary control tools for obtaining good search results.

Successive fraction method

In this method a large set created by using AND or NOT is reduced to smaller numbers

Ex. Query: Swimming and physical fitness of women

Search sets

S1 swimming AND (Wom?n OR female ?)

S2 s1 AND s2 fit ?

S3 s1 AND Yr> 1986

Terms specifying language and data are useful to reduce the number of records.

Citation pearl growing method

The method starts with a very small initial set, perhaps a single item known to be relevant to the subject of the query. The retrieval of the initial record may be by the name of an author, a specialist in the subject. The record(s) retrieved can provide relevant additional terms of the title, descriptors, abstracts, etc., carry out further searches on the subject.

Evaluation of Online Databases

1. Subject coverage
2. Types of databases and ty of information supplied

3. Currency
4. Ease of Use
5. Type of out put
6. Index Language
7. Cost
8. Documentation and search aids
9. Time Span
10. Search service.

20.6 SELF ASSESSMENT QUESTIONS

1. Define database and explain different types of databases
2. What do you mean by Data Bank and explain its functions
3. Describe the major online databases and services in the field of Sciences

20.7 SUGGESTED READINGS

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