

**Indira Gandhi National Open University
(IGNOU)**

Bachelor of Library and Information Science (BLIS)

Study Materials

Course code: BLI-222

INFORMATION SOURCES AND SERVICES



**JATINDER SINGH
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www.jatinderjyoti.in
jatinderjyoti84@gmail.com
fb/insta: jatinderjyoti.raina

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Programme Design Committee

Prof. Uma Kanjilal (Chairperson)
Faculty of LIS, SOSS, IGNOU

Prof. B.K.Sen, Retired Scientist
NISCAIR, New Delhi

Prof. K.S. Raghavan, DRTC
Indian Statistical Institute, Bangalore

Prof. Krishan Kumar, Retired Professor
Dept. of LIS, University of Delhi, Delhi

Professor M.M. Kashyap, Retired Professor
Dept. of LIS, University of Delhi, Delhi

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Retired Professor, Faculty of LIS, SOSS, IGNOU

Dr. R.Sevukan
(Former Faculty Member) Faculty of LIS,
SOSS, IGNOU

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Faculty of LIS, SOSS, IGNOU

Prof. T. Viswanathan
Retired Director NISCAIR, New Delhi

Dr. Zuchamo Yanthan
Faculty of LIS, SOSS, IGNOU

Conveners:

Dr. Jaideep Sharma
Faculty of LIS, SOSS, IGNOU

Prof. Neena Talwar Kanungo
Faculty of LIS, SOSS, IGNOU

Programme Coordinators

Prof. Jaideep Sharma and Prof. Neena Talwar Kanungo

Course Coordinator

Prof. Neena Talwar Kanungo

Course Preparation Team

Unit No(s)
1-4

Unit Writer(s)
Professor B.K. Sen

Course Editor
Prof. Neena Talwar Kanungo

Print Production

Mr. Manjit Singh
Section Officer (Pub.), SOSS
IGNOU, New Delhi

Secretarial Assistance
Ms. Sunita Soni
SOSS, IGNOU

Cover Design
Ms. Ruchi Sethi
Web Designer
E-Gyankosh, IGNOU

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BLOCK 1 DOCUMENTARY SOURCES

Introduction

With the advent of printing from movable types in 1450s, the production of publications increased enormously giving rise to different types of publications such as books, pamphlets and periodicals. The hand-written documents like manuscripts, notes, and diaries continued to co-exist along with printed documents. All these formed the documentary sources of information. Non-documentary sources of information like the government and non-government offices, institutions and human beings continued as close allies of documentary sources. Documentary and non-documentary sources forms the entire gamut of information sources. In this Block we shall deal only with the documentary sources of information, non-documentary sources of information will be dealt with separately. Information sources may also be divided as published and unpublished sources. Published and unpublished sources can be further divided as primary, secondary and tertiary sources.

In **Unit 1** of this Block, first of all, published and unpublished sources are enumerated and then how different authors have tried to categorise the documents is discussed along with the criteria they have followed for categorisation. The characteristics of categorisation by each author are commented upon. Categorisation by different authors has given rise to certain discrepancies which have been discussed item by item, causes of the discrepancies are elaborated, and proper placement of the specific item is also suggested.

In **Unit 2**, primary sources comprising of research periodicals, technical reports, conference proceedings, patents, standards, theses, project reports, official publications, trade literature, laboratory notebooks, diaries, internal research reports, correspondence, personal files, etc. are defined, explained and discussed with examples. Some of the publications have been divided according to their types, and each type is discussed with definitions and explanations.

In **Unit 3**, secondary and tertiary sources are dealt with. Secondary sources comprise of bibliographies, secondary periodicals (abstracting, indexing, reviewing, and popular periodicals), and reference books such as encyclopaedias, dictionaries, handbooks, manuals, yearbooks, directories, formularies, and textbooks. All these are discussed with adequate examples. Tertiary sources include bibliography of bibliographies, directory of directories, library catalogues, and guides to information sources. All these have been discussed in some detail with examples whereby you get a fair idea about these sources.

Unit 4 deals with the criteria of evaluation for all these sources. It should be remembered that evaluation criteria vary from category to category. The criteria we use for evaluating a dictionary will not be same for a primary periodical.

Information Source and Information Resource

In the very beginning it is better to be clear about the concepts 'information source' and 'information resource'. The two terms 'source' and 'resource' have started creating confusion ever since the term 'information resource' has appeared on the scene. Prior to the emergence of this term, there was no

confusion about the term 'information source' as this term used to connote a document or non-document e.g. an institution that provided information. As such, an encyclopaedia, a specialist, etc. were the 'source' of information. Mostly librarians and information scientists deal with information sources. The term 'information resource' pertains to information and communication technologies, especially to information management. Sometimes, information management is referred to as 'information resources management'. Schneymann included five types of information resources for the purpose of information management. The resources are: systems support including computers and telecommunications, processing data, images, etc., conversion and transformation including reprographics, distribution and communication including network management and telecommunications, and finally retention, storage and retrieval which covers libraries, record centres, filing systems and internal and external databases (Feather and Sturges).

UNIT 1 CATEGORISATION OF SOURCES

Structure

- 1.0 Objectives
- 1.1 Introduction
- 1.2 Information Sources : Categories
 - 1.2.1 Documentary Sources
 - 1.2.2 Non-documentary Sources
 - 1.2.3 Print Sources
 - 1.2.4 Non-print Sources
 - 1.2.5 Published Sources
 - 1.2.6 Unpublished Sources
 - 1.2.7 Primary Sources
 - 1.2.8 Secondary Sources
 - 1.2.9 Tertiary Sources
 - 1.2.10 Macro and Micro Sources
 - 1.2.11 Conventional and Non-conventional Sources
- 1.3 Categorisation of Sources by Grogan
- 1.4 Categorisation of Sources by Bonn and Smith
- 1.5 Categorisation of Sources by Giljarevskij
- 1.6 Categorisation of Sources by Subramanyam
- 1.7 Categorisation by Ranganathan
 - 1.7.1 Macro and Micro Documents
 - 1.7.2 Conventional and Non-conventional Documents
- 1.8 Lack of Unanimity in Categorisation
- 1.9 Usefulness of Categorisation
- 1.10 Summary
- 1.11 Answers to Self Check Exercises
- 1.12 Keywords
- 1.13 References and Further Reading

1.0 OBJECTIVES

After reading this Unit, you will be able to:

- explain that information sources can be categorised;
- describe that there are specific criteria for categorisation of information sources such as type, content, media and publication status;
- identify that there is lack of unanimity in categorisation;
- summarise that this type of categorisation generally applies to scientific publications; and
- find out that categorisation has some uses.

1.1 INTRODUCTION

Information sources are many and varied. Since time immemorial human beings are generating information by observation, experimentation,

imagination, reasoning, and experiencing through sensory organs. The information they generated were generally communicated to others for their own interest and survival. In olden days when a human being used to spot a wild animal in the vicinity of her/his habitation, immediately s/he used to inform others so that the animal could be killed to save their own lives and earn a day's meal. Even today this practice may be seen in remote forests of Africa, Amazon basin, etc. The ancient habit of human beings relating to information still exists and thus they are still powerful sources of information.

In the long path of human progress, a time came when humans started recording information by painting or carving on cave walls and stones. Gradually the media and methods of recording changed. From cave walls and stones they advanced to clay tablets, papyrus, palm leaves, parchment, vellum, paper and finally to electronic media. Also, there was transition from paintings to pictographic writings to letters and alphabets.

Prior to the invention of printing from movable types in 1450s, handwritten books were the order of the day. Scribes in many parts of the world used to copy the books and sell them. Obviously, this particular process could not generate a huge number of books. With the invention of printing, production of books increased manifold. This change gave birth to a variety of documentary sources like books, pamphlets, journals, newspapers, etc.

Institutions like libraries and universities started emerging more than two thousand years ago. Even by today's standard, the library in Alexandria that flourished from 3rd century BC to 3rd century AD was a huge library as it contained about four hundred thousand documents. The library harboured almost the entire knowledge generated by human beings till that time in the world and served as a great source of information. It was more or less like today's Internet which is an unthinkable, huge reservoir of information generated from all parts of the world. In brief, this is the story of the birth of documentary and non-documentary sources of information.

We are all familiar with printed sources like books, newspapers, magazines, and others. Similarly we have seen hand-written documents called manuscripts, letters, notes, and electronic sources like CDs, microfilms, etc. They are non-print sources.

Some sources are produced and distributed by publishers. They may be printed, electronic or micro-documents (i.e. documents in micro-forms). They are usually priced. These are published sources. Typed sources like a thesis, hand-written sources like a letter, are unpublished sources.

When we go through the content of a documentary source, we find that all of them do not contain the same type of information. Some sources provide totally new information that was not known before. They may inform about new discoveries, new inventions, new ideas, new concepts, etc. These are called **primary sources**. Take for example a research periodical which includes research articles that always report new findings.

Another type of information source is generated by gathering information from primary sources. The information gathered from primary sources is compiled in systematic order and published in the form of a book, journal, etc. These types of sources are known as **secondary sources**. *Indian Science Abstracts* is an example of secondary sources of information.

Publications pertaining to tertiary sources are sometimes produced based on secondary sources. A bibliography is a secondary source. Now, if a bibliography of bibliographies is produced, it will be a **tertiary source**. Guides to reference sources are also tertiary sources as reference sources are secondary sources.

Ranganathan divided documents in two different broad groups – macro documents and micro documents as well as conventional and non-conventional documents. We shall discuss them at relevant places in this Unit.

1.2 INFORMATION SOURCES: CATEGORIES

From the discussion above we have got a fair idea about various types of information sources such as documentary and non-documentary, print and non-print, published and unpublished, macro and micro, conventional and non-conventional. We have also noted that documentary sources can be further subdivided as primary, secondary, tertiary according to content. We shall just enumerate the sources here as they will be discussed in detail in subsequent units of this Block.

1.2.1 Documentary Sources

All sources in the form of documents are documentary sources. The connotation of the term ‘document’ has undergone sea change in recent years and now includes books, periodicals, manuscripts, videotapes, computer files, and databases. A selective list of documentary sources is given below:

- Books
 - Treatises
 - Monographs
 - Textbooks
 - Reference Books
- Manuscripts
- Periodicals
- Patents
- Standards
- Theses
- Conference Documents
- Souvenirs
- Festschriften
- Reports (technical, administrative, trip)
- Articles (popular, technical, research)
- Globes
- Diaries
- Letters
- Office Files
- CD-ROM Recordings
- Video Recordings
- Databases
- Computer Files
- Laboratory Notebooks

1.2.2 Non-documentary Sources

We have three types of non-documentary sources of information, i.e. humans, organisations, and World Wide Web.

Humans

- Information Professionals
- Consultants
- Experts
- Resource Persons
- Extension Workers
- Representatives of Firms
- Technological Gatekeepers
- Invisible College
- Common Men, etc.

Organisations

- International Agencies
- Government Ministries and Departments
- Research and Development Organisations
- Academic Institutions
- Societies
- Publishing Houses
- Press

- Broadcasting Houses
- Libraries and Information Centres
- Museums
- Archives
- Exhibitions
- Trade Fairs
- Database Vendors
- Information Analysis Centres
- Referral Centres, etc.

World Wide Web

1.2.3 Print Sources

All sources that are in print form are print sources. Some of the examples of print sources are given below:

- Books
- Periodicals
- Patents
- Standards
- Conference Documents
- Souvenirs
- Festschriften
- Reports (technical, administrative, trip)
- Articles (popular, technical, research)

1.2.4 Non-print Sources

Documentary sources that are not printed are all non-print sources, such as the following:

- Manuscripts (typed or hand-written)
- Theses
- Project Reports (typed)
- Diaries
- Letters
- Office Files
- Laboratory Notebooks
- Microforms
- CD Recordings
- Video Recordings
- Databases
- Computer Files
- E-publications
- Humans
- Organisations
- World Wide Web, etc.

1.2.5 Published Sources

These sources are documentary sources, both printed and non-printed. They are brought out by publishers in large number of copies, usually priced and sold. Some of the examples are as follows:

- Books
- Periodicals
- Patents
- Standards
- Conference Documents
- Souvenirs
- Festschriften
- CD Recordings
- Video Recordings
- Databases, etc.

1.2.6 Unpublished Sources

These documentary sources are neither published nor produced in large number of copies, and usually are not for sale. Unpublished sources, at times, can turn into published sources as well. For example, letters written by Rabindranath Tagore have been published in book form by Visva Bharati at a later date. Some of the examples of unpublished sources are given below:

- Manuscripts (typed or hand-written)
- Theses
- Project Reports (typed)
- Diaries
- Letters
- Office Files
- Laboratory Notebooks
- Memoranda
- Medical Records, etc.

1.2.7 Primary Sources

A source will be considered as a primary source in case it carries newly generated information, original work of research, or new interpretation of already known facts. The document is the first and often the only published record of original research. The information contained in primary sources is generally scattered and unorganised. Take for example, the case of swine flu, a new disease for human beings. Ever since the first case was reported in Mexico in April 2009, a lot of research work is going on in the world to find out a vaccine to contain it, medicines to cure those who are already affected, etc. The literature on this is being published in the world in hundreds of sources and scores of languages. Hence, it is highly scattered and unorganised. Another fact is that literature that appears in the primary sources takes time to get assimilated in the universe of knowledge, since results of experiments are double-checked, all findings, new explanations, new ideas, etc. are deliberated upon by peers. When their opinion is favourable, then only these find a chance to enter into the universe of knowledge.

1.2.8 Secondary Sources

A source which is more or less completely dependent on primary sources for its existence is a secondary source. Information in secondary sources is organised and arranged according to a definite plan. Indexing and abstracting periodicals are one of the examples of secondary sources. Indexing periodical, indexes the contents of periodicals or some other type of publications usually on regular basis, whereas abstracting periodical along with the contents also gives the abstract. The abstract can be indicative or informative. Indexing and abstracting periodicals may be either general in nature or on a specific theme. In any abstracting and indexing periodical you will notice that articles of the same topic have all been put together, and of related topics close by. They are no more scattered. Even if the articles are in different languages you will find the abstracts in the same language. In a way it is overcoming the language barrier. As the bibliographical details of the primary sources are usually given in the secondary sources, these sources act as a key to primary sources. In a review article, also a secondary source, the entire information on a particular topic for a certain period is first collected, then digested and finally a report is written wherein the entire matter is organised coherently. Here the entire phenomenon of scattering is done away with and the whole matter gets well-organised. Generally most reference books also draw materials from primary sources.

1.2.9 Tertiary Sources

A source that is entirely dependent on secondary sources or primary and secondary sources for its existence is a tertiary source. Sources like ‘guides to reference sources’ and ‘bibliography of bibliographies’ are examples of tertiary sources. These sources act as key to primary sources as well as secondary sources. Some authors have considered directories, yearbooks, etc. also as tertiary sources as they help the searcher in using primary and secondary sources.

There are sources, like directory of on-going research projects, which are placed under tertiary sources. For such publications data is directly gathered from scientists (primary sources), as such they deserve to be placed under primary sources. Why such publications have been placed under tertiary sources is not quite clear. We shall have further discussion on this in this Unit.

1.2.10 Macro and Micro Sources

Ranganathan, the father of library science in India, conceived the idea of macro documents and micro documents. Documents embodying macro thoughts such as books are macro documents, and those embodying micro thoughts such as journal articles are micro documents. It is to be noted that documents in microforms are not always micro documents since a microfilm can harbour a book – a macro document, or a journal article – a micro document.

1.2.11 Conventional and Non-conventional Sources

Ranganathan termed documents such as books printed on paper as conventional sources, and microfilm, reprograph, etc. as non-conventional sources.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

1) Give examples of primary, secondary and tertiary sources of information.

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1.3 CATEGORISATION OF SOURCES BY GROGAN

Grogan also attempted to categorise documents relating to scientific literature only. Hence, periodicals here mean scientific periodicals, research reports mean scientific research reports, etc. He covered both published and unpublished sources. The coverage is fairly comprehensive.

Primary Sources

- Periodicals (solely devoted to report original work)
- Research Reports
- Conference Proceedings
- Reports of Scientific Expeditions
- Official Publications
- Patents
- Standards
- Trade Literature
- Theses and Dissertations
- Laboratory Notebooks
- Diaries
- Memoranda
- Internal Research Reports
- Minutes of Meetings
- Company Files
- Correspondence
- Personal Files, etc.

Comments – The first item in this category is ‘periodicals’, which implies scientific periodicals only. All scientific periodicals do not fall under this category. That is why the author has to specify the periodicals that fall under this category. We can call them as ‘primary periodicals’. The second item in this category is ‘research reports’. No other author has taken into account ‘reports of scientific expeditions’ in any category. In a way they are also research reports. Their placement here is justified as they report the outcome of original research. Other sources mentioned here are unquestionably primary sources. Some primary sources are missing from the list such as festschriften, research monographs, preprints, reprints, information leaflets, notes, information cards, medical records, audio and video tapes, and computer programs. Electronic sources are not included possibly because they were not that commonplace at the time of the writing of the book as they are today.

Secondary Sources

- Periodicals (non-primary)
 - Abstracting Services
 - Indexing Services
 - Reviews of Progress
- Reference Books, e.g.,
 - Encyclopaedias
 - Dictionaries
 - Handbooks
 - Tables
 - Formularies
- Treatises
- Monographs, and
- Textbooks

Comments – Periodicals are included here also as abstracting, indexing, and reviewing periodicals, are secondary sources of information. Moreover, popular periodicals are also secondary periodicals as often they interpret in lucid terms the advances in science reported in primary periodicals. Express information service, manuals, bibliographies, yearbooks, directories, indexes, translations, etc. are missing in the list as some of them figure under tertiary sources. Express information service is not popular outside Soviet Union that explains its absence in the list. Computerised sources are also missing.

Tertiary Sources

- Yearbooks
- Directories
- Bibliographies (List of Books, Location Lists of Periodicals, Lists of Indexing and Abstracting Services)
- Guides to 'The Literature'
- Lists of Research in Progress
- Guides to Sources of Information
- Guides to Libraries
- Guides to Organisations

Comments – Majority of the items placed under tertiary sources do not really belong to this category. It has already been pointed out that yearbooks and directories are secondary sources. Bibliographies that list only primary sources belong to secondary sources. Bibliographies that list only secondary sources or both primary and secondary sources should go to tertiary sources. Union catalogues of books as well as of periodicals are tertiary sources. 'Bibliography of bibliographies' is also a tertiary source which does not find a mention here. A 'Lists of research in progress' provides information about on-going research either just providing citations or citations along with a short description. Citations or the abstracts are primary sources as they are being reported for the first time. A list of such items surely does not belong to tertiary source. As a bibliography of research articles is considered a secondary source, similarly a list of the citations or citations plus description should be considered a secondary source. 'Guides to libraries' and 'Guides to organisations' are also directories and should belong to secondary sources.

1.4 CATEGORISATION OF SOURCES BY BONN AND SMITH

The categorisation given below is by George S. Bonn and Linda C. Smith. Initially, sources were categorised by George S. Bonn alone. The following categorisation is for scientific and technical literature. It may be noted that by and large only published sources have been covered.

Primary Sources

- Periodicals
- Festschriften
- Conference Proceedings
- Research Reports
- Research Monographs
- Preprints
- Patents
- Standards
- Dissertations
- Manufacturers' Literature

Comments – Periodicals depending on the content may be treated as primary or secondary sources. Hence, they cannot be always placed under primary sources. All other sources included in this category are primary sources except festschriften which at times may contain some informative articles. Manufacturers' literature is also termed as trade literature. Sources missing are: official publications and most of the unpublished sources.

Secondary Sources

- Handbooks
- Encyclopaedias
- Dictionaries
- Treatises
- Monographs
- Indexes
- Bibliographies
- Reviews
- Indexing Serials
- Critical Tables
- Abstracting Serials
- Machine-readable Bibliographic Databases
- Databanks
- Translations

Comments – Most secondary sources have been covered. Sources like express information service, lists of research in progress, manuals, formularies, almanacs, yearbooks, directories, textbooks, etc. are missing as the last three items are included in tertiary sources. Translations as sources of information have been covered in this list only, which other authors have missed. Moreover, machine-readable bibliographic databases and databanks have been included which others did not, maybe because they did not deem it necessary considering the fact that in the machine-readable form there is no change in the content. It is the medium which is different. The document may be in print form, in microform or in machine-readable form. If the content remains the same their categorisation remains unchanged.

Tertiary Sources

- Guides to the Literature
- Directories (of persons, organisations, products, etc.)
- Textbooks

Comments – Most of the tertiary sources are missing such as library catalogues, bibliography of bibliographies, directory of directories, and guides to reference sources. It may be noted here that ‘textbooks’ are placed in tertiary sources. The placement of directories here does not seem to be very sound. We shall discuss about the placement of the same source in different categories in Section 1.8.

1.5 CATEGORISATION OF SOURCES BY GILJAREVSKIJ

R S Giljarevskij, a Russian information scientist, is little known outside Russia. According to his categorisation, all information sources are either primary or secondary. There is no tertiary category. Moreover, his categorisation covers all literature, not only scientific and technical.

Primary Sources

- Monographs
- Collections of Papers (e.g. Festschrift volumes)
- Conference Proceedings
- Textbooks and Manuals
- Official Publications
- Invention Specifications (e.g. Patents)
- Technical Catalogues
- Information Leaflets
- Scientific and Technical Reports
- Theses

- Serials
- Journals and Magazines
- Newspapers
- Standards
- Information Cards
- Preprints
- Manuscripts and Galleys
- Data Files

Comments – The categorisation by Giljarevskij differs a great deal from others as he has covered the entire gamut of literature whereas others have covered only scientific and technical literature. As a result some uncommon sources have appeared in his list which we will describe below:

Monographs are included here as primary sources. Monographs are basically long research articles or a short book on a specific theme. It is to be remembered that only research monographs are primary sources and the rest are secondary sources.

Collection of papers – This particular heading used by Giljarevskij is a better one in the sense that its scope is wide unlike festschriften used by other authors. Sometimes articles are collected on a particular topic, or contributed by a particular person and brought out in the form of a book. If the articles belong to primary sources, the anthology will also be a primary source. Under this heading both collected works and festschriften can be accommodated.

Textbooks and manuals have been considered as primary sources by Giljarevskij, which others have considered as secondary or tertiary sources. This will be discussed further in Section 1.8

Serials, journals and magazines all figure in the list. Journals and magazines being serials there was no need to mention all the three. It is also a fact that all serials are not primary sources.

Newspapers are excluded from others' list since they do not pertain to scientific and technical literature. It is included here as this categorisation covers the entire gamut of literature. Newspapers contain primary information and its placement here is well justified.

Technical catalogues are generally manufacturers' catalogues and form trade literature. Similarly **information leaflets** supplied along with the products, processes, etc. by manufacturers also form trade literature. They are primary sources. However, information leaflets based on primary literature are secondary sources.

An invitation card is an **information card**. Even a letter contained in a postcard is an information card. Information cards exist in various fields. Even you may receive a card from a journal editor informing that your article has been accepted for publication is also an example under this category.

Manuscripts and galleys – A manuscript may be a handwritten book or any other document or a typed article or the like that has been sent for publication. The galley is a printer's proof. All these are original documents, and hence placed under primary sources.

Data files are computerised files containing data. If the data belongs to primary sources, then the data files will be primary sources.

Secondary Sources

- Reference Literature
- Reviews
- Abstract Journals
- Express Information Bulletins
- Standards Indexes
- Invention Bulletins
- Secondary Publications on Patents
- Library Catalogues
- Bibliographic Files

Comments – All the sources listed are indisputably secondary sources, except library catalogues that belong to tertiary sources as they contain information both about primary and secondary sources. Possibly, library catalogues are placed here as there is no category of tertiary source. Some of the missing items are: treatises, translations, etc.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

2) Briefly comment on the categorisation of primary sources by Giljarevskij.

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1.6 CATEGORISATION OF SOURCES BY SUBRAMANYAM

While categorising, Grogan, Boon and Smith, and Giljarevskij considered mostly macro documents (books, journals, etc.). Subramanyam has also included micro documents (journal articles, preprints, etc.). His categorisation, more exhaustive than others is presented below:

Primary Sources

- Laboratory Note Books
- Diaries
- Notes
- Medical Records
- Personal Correspondence
- Videotapes of experiments and surgical operations
- Graphs, charts, and tables usually machine-generated during experiments
- Transcripts and audio or videotapes of lectures and discussions
- Letters to the editor or short communications in primary journals
- Preliminary Communications in “letters” journals
- Preprints and Reprints of Conference Papers
- Conference Proceedings
- Technical Reports
- Theses and Dissertations
- Journal Articles, Preprints, Reprints
- Newsletters
- House Organs

- Internal Research Reports
- Memoranda
- Company Files
- Patent Specifications
- Computer Programs
- Standards, Specifications, Codes of Practice
- Trade Literature

Comments – In Subramanyam’s categorisation the coverage is wide and it includes quite a few micro documents such as medical records, videotapes and audiotapes. However, journals and a few other items seem to be missing. Instead of listing journals as such, he has listed the contents of the journal such as journal articles, preliminary communications in ‘letters’ journals, letters to the editor in primary journals, as well as preprints, reprints, newsletters and house organs which sufficiently take care of journals. Anthologies (including festschriften), research monographs, official publications, information leaflets, personal files, data files, etc. are absent. As this categorisation is based on scientific and technical literature only, newspapers, information cards, etc. are excluded.

Secondary Sources

- Bibliographies
- Indexes
- Abstracts
- Current Awareness Services
- Dictionaries
- Directories
- Tables
- Handbooks
- Catalogues
- Yearbooks
- Almanacs
- Reviews
- Monographs
- Textbooks
- Encyclopaedias

Comments – The coverage of items is extensive. It may be observed here that instead of abstracting periodicals, the author has listed ‘abstracts’. An abstracting periodical is nothing but a collection of abstracts arranged systematically. Express information service is, of course, missing as it is more or less unknown outside Russia. In addition, lists of research in progress, manuals, formularies, treatises, translations, etc. are also missing.

Tertiary Sources

- Bibliography of Bibliographies
- Directory of Directories
- Guides to Literature

Comments – Library catalogues have been listed under the secondary sources. ‘Guides to reference sources’ have not been listed separately possibly with the consideration that these guides form part of ‘guides to literature’. There is slight difference between the ‘guides to literature’ and ‘guides to reference sources’. In ‘guides to literature’ one may find the listing of primary sources along with secondary sources. On the other hand ‘guides to reference sources’ are unlikely to cover primary sources.

1.7 CATEGORISATION BY RANGANATHAN

Ranganathan has categorised the documents from two different angles: i) by the volume of thought content; and ii) by recording media. Documents according to first categorisation are termed as macro and micro documents, and by second categorisation as conventional and non-conventional documents.

1.7.1 Macro and Micro Documents

Macro Document

When a work expressing macro thought is embodied into a document all by itself is called a macro document. A book may be considered as a macro document.

Micro Document

A work expressing micro thought, say, a journal article, is usually not embodied into a document all by itself. Several micro documents comprise a macro document when they are printed together in the macro document. Take, for example, the September 2010 issue of the *Annals of Library and Information Studies*. In this particular issue there are 15 different articles. Each of the articles is a micro document.

Comment – This is an extremely broad categorisation based on the volume of thought content. It does not go into the numerous types of documents prevalent in the world. Neither does it take into account the various forms the content of a document take while passing from primary to secondary to tertiary phases.

1.7.2 Conventional and Non-conventional Documents

Conventional Documents

A conventional document is one in which paper forms the basic material on which recording is done by phonetic symbols forming the script of an articulate natural or artificial language, or non-conventional script such as Braille, or non-phonetic symbols such as drawings, or simply by writing. These documents are used for the communication of thought content. Some examples of conventional documents are journals, serials, books, articles, Braille books, stenographs, books with musical notations or ciphers, maps, atlases and similar documents, and handwritten manuscripts.

Non-conventional Documents

A non-conventional document is one:

- i) which is reproduced from a conventional document either on paper (e.g. a photocopy), or on any other non-paper material, (e.g. a microfilm) — sometimes, these documents are highly reduced in size (e.g. a microfiche) requiring a device for reading; and
- ii) which records sound on non-paper media (e.g. gramophone record), or sound and picture together on non-paper media (e.g. A/V materials, video recordings, etc.), or simply picture on non-paper media (visual documents).

Comments – Categorisation of documents here is predominantly based on the media of recording – paper and non-paper. It does not take into account the content of the document.

1.8 LACK OF UNANIMITY IN CATEGORISATION

Going through the categorisation by various authors it becomes evident that Ranganathan has categorised documents firstly by the volume of the thought content – macro or micro and secondly by the recording media – paper and non-paper. Moreover, Ranganathan's categorisation forms part of his *Classified Catalogue Code*. It may be construed that the categorisation is in the context of cataloguing. Grogan, Bonn and Smith, Giljarevskij, and Subramanyam have categorised documents on the basis of the forms the content of a document takes while passing from the primary to secondary to tertiary stages. It has been noticed that in the categorisation by aforesaid authors, there is no unanimity in the categorisation of certain sources like textbooks, monographs, manuals, yearbooks, bibliographies, and directories. It makes it amply clear that criteria for categorisation are not yet fixed firmly, and naming of the sources in certain cases has not been precise. We shall discuss these items one by one and try to see why they have been placed under different categories.

Textbooks

It has been placed under primary category by Giljarevskij, secondary category by Grogan and Subramanyam, and tertiary category by Bonn and Smith. If we strictly follow the characteristics of a primary source then a textbook cannot be placed under primary source which is supposed to contain something original. If the content of a textbook is analysed, then it will be seen that generally a textbook contains facts which were reported before in primary sources and are already known. As it is based on primary sources, it has to be a secondary source. Of course, there are certain textbooks that contain original ideas too, e.g. *Prolegomena to Library Classification* by Ranganathan. Such cases may be treated as exceptions rather than rule.

It may be argued that many references in textbooks pertain to secondary sources like textbooks, dictionaries, encyclopaedias, etc. Hence, textbooks should be placed under tertiary sources. For example, in the book *Theory of Classification*, by Krishan Kumar, *Indian Standard Glossary of Classification Terms* has been referred to, which is a secondary source. References to textbooks are also quite common. Take for example, Newton's laws of motion. They were originally recorded in *Philosophiae Naturalis Principia Mathematica*, popularly known as *Principia* published in 1687. When textbooks on physics were written after the publication of *Principia* the authors referred to *Principia*. Now authors do not refer to *Principia* as it is not easily accessible, moreover it is in Latin. They simply refer to authentic textbooks published recently for writing the 'laws of motion'. In innumerable cases matters were drawn initially from the original source for writing a textbook. Often, they are drawn from authentic textbooks rather than the original source. The fact is that the matter contained in the textbooks owe its origin to primary sources with rare exceptions. Hence, it will be wise to place textbooks under secondary sources.

Monographs

Bonn and Smith have considered research monograph as a primary source, and Giljarveskij has considered all monographs as primary sources. On the other hand Subramanyam and Grogan have considered monographs as secondary sources. Now the question arises what is the reality. If a set of scientific monographs is examined, then it is likely to be found that some monographs contain the research results of a particular experiment, survey, etc. Such monographs are undeniably primary sources and it will be apt to call them research monographs. On the other hand if a monograph is produced culling data from primary sources, then this monograph will be a secondary source. *Rice in India* is a monograph belonging to this category. Hence, research monographs belong to primary sources and other monographs to secondary sources.

Yearbooks

Grogan has placed yearbooks under tertiary sources, and Subramanyam under secondary sources. Giljarveskij did not mention yearbooks in his list. However, he has mentioned 'reference literature' under secondary sources, and yearbooks get covered under that. Yearbooks mostly draw materials from primary sources like newspapers and other mass communication media and serve as reference sources. Hence, yearbooks logically belong to secondary sources.

Directories and Lists of Research in Progress

Grogan as well as Bonn and Smith have placed directories under tertiary sources and Subramanyam under secondary sources. Giljarveskij's list is silent about 'directories'. 'Lists of research in progress' figures only in Grogan's list under tertiary sources. Directories and lists of research in progress are reference sources. From this point of view, they are secondary sources. If we consider their compilation then we find both the items are compiled from the data gathered through questionnaires and not from any primary or secondary sources. Hence, these two sources may be considered as primary sources as well.

Self Check Exercise

Note: i) Write your answers in the space given below.

ii) Check your answers with the answers given at the end of this Unit.

3) Textbooks have been placed by various authors in primary sources, secondary sources and tertiary sources. Where would you like to place it and why?

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4) Monographs are placed under primary sources and sometimes under secondary sources as well. Explain why?

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THE PEOPLE'S UNIVERSITY

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5) Under which category you will like to place 'lists of research in progress'. Justify your answer.

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THE PEOPLE'S UNIVERSITY

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1.9 USEFULNESS OF CATEGORISATION

i) To judge the soundness of a collection, categorisation of documents renders positive help. Take for example the periodical collection of a research library. If the library contains more primary periodicals compared to secondary, then the collection will be considered balanced and more helpful for research. In any scientific library wherever there is dominance of primary documents, it is surely the sign of a good collection.

ii) Using categorisation it is possible to determine to what extent a particular field is research-oriented. Take the current periodicals of a particular field. Categorise them in primary and secondary sources, and then find out the percentage of periodicals in each category. The percentage will indicate to what extent the field is research-oriented. If in a field more than 50% periodicals are primary, then the field is surely research-dominated. Applying the same criteria we can determine to what extent LIS field in India is research-oriented.

1.10 SUMMARY

By combining categorisation of all the authors we cannot arrive at an unanimous decision as to the items that comprise primary, secondary and tertiary sources. Maybe in future, it might be possible to distinctly identify the sources that fall under primary, secondary and tertiary sources. Needless to say, categorisation takes into account documentary sources generally pertaining to pure and applied science. We shall discuss them one by one in detail in units 2 and 3 of this Block.

1.11 ANSWERS TO SELF CHECK EXERCISES

- 1) Research periodicals, research monographs, research reports, conference proceedings, patents, standards, theses, dissertations, etc. are primary sources of information. Abstracting and indexing periodicals, reviews of progress, popular periodicals, encyclopaedias, dictionaries, handbooks, tables, manuals, formularies, bibliographies, treatises, textbooks, etc. are secondary sources. Bibliography of bibliographies, guides to reference sources, etc. are tertiary sources of information.
- 2) Giljarevskij's categorisation covers the literature in its entirety unlike others whose categorisation is based on only scientific and technical literature. Moreover Giljarevskij has categorised the sources only in two groups while other have done it in three groups. There is no dispute about the following sources which are considered primary sources by all — collections of papers (e.g. festschrift volumes), conference proceedings, official publications, newspapers, standards, invention specifications (e.g. patents), technical catalogues, scientific and technical reports, theses, preprints, data files, etc. Documents which are disputed are: monographs, textbooks and manuals, serials, information leaflets, information cards, manuscripts and galleys, etc. Except textbooks and manuals, the remaining sources become primary or secondary depending on the content.
- 3) The matter in textbooks is usually derived from primary sources, hence it should be placed under secondary sources. Books with original ideas like *Prolegomena to Library Classification* are sometimes prescribed as textbooks. Such cases may be treated as an exception. As textbooks derive materials from secondary sources like dictionaries, encyclopaedias, etc. some authors tend to consider textbooks as tertiary sources. However, it should be remembered that though textbooks draw materials from secondary sources, the content mostly owes its origin to primary sources that might have been published long before. As such, it is better to consider textbooks as secondary sources.
- 4) The contents of monographs vary. Some contain only the results of research and are justifiably called 'research monographs'. These monographs are primary sources. On the other hand, many monographs are written culling information from primary sources. Naturally, these monographs are secondary sources.
- 5) 'Lists of research in progress' includes the name/s of the researcher/s, the title of the research project, the name of the institute where the research is being conducted, duration of the project, and a brief description of the project. It may also include the subject heading and the class number. The information is obtained through questionnaire, and the publication is compiled using raw data. From this consideration, this is a primary source. However, it is mostly used as a reference tool and thereby finds a place among secondary sources. Its placement under tertiary sources is difficult to justify.

1.12 KEYWORDS

Data File : A computer file containing data.

Express Information Service : It is a secondary periodical containing detailed summary of the article along with the mathematical calculations and illustrations. It resembles an abstracting periodical but the information given is much more detailed.

Movable Types : In this type of printing each character may be an individual letter or a punctuation mark may be cast on a separate piece of clay/wood or metal for printing.

Personal File : It is an official file containing information about an employee relating to her/his service.

Transcript : A written or printed version of material that was originally appeared in a different medium.

1.13 REFERENCES AND FURTHER READING

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UNIT 2 PRIMARY SOURCES

Structure

2.0 Objectives

2.1 Introduction

2.2 Primary Sources

2.2.1 Primary Periodicals

2.2.2 Reports

2.2.3 Anthologies of Papers

2.2.4 Conference Documents

2.2.5 Monographs

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2.2.10 Theses and Dissertations

2.2.11 Project Reports as Partial Fulfilment of Academic Degrees

2.2.12 Reprints

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2.2.26 Data Files

2.3 Summary

2.4 Answers to Self Check Exercises

2.5 References and Further Reading

2.0 OBJECTIVES

After going through this Unit, you will be able to:

- define various types of primary sources;
- categorise varieties of primary sources within each type; and
- discuss broadly the content of each type.

2.1 INTRODUCTION

We have already discussed about primary sources in Unit 1: Categorisation of Sources (Section 1.2.7). In any field of knowledge, the primary sources are the foundation stones on which the subject is built up. Within the brief compass of this Unit it not possible to go into details of various categories and sub-categories of primary sources. However, every attempt will be made to make you familiar with all the sources.

2.2 PRIMARY SOURCES

We have also seen the types of documents that belong to primary sources. Many primary sources have sub-categories. We shall discuss in the following pages all the primary sources along with their sub-categories.

2.2.1 Primary Periodicals

Definition – A primary periodical is one that contains, either wholly or mostly, research papers.

Features – The features of primary periodicals are as follows:

- i) They are brought out by learned bodies, private or commercial organisations, and sometimes by a government.
- ii) The articles contain something original and new interpretations.
- iii) Articles published are of high standard which is ensured by refereeing procedure.
- iv) Usually the address of the author is provided.
- v) The date of receipt of the article is generally indicated.
- vi) Instructions to the authors are generally included.
- vii) The abstracts of the articles are generally given.
- viii) The articles include list of references.
- ix) They are always indexed or abstracted in secondary periodicals.
- x) They are usually termed as journals, proceedings, transactions, etc.
- xi) Many of them do not contain any editorial, notes and news, obituaries, etc.

Examples:

- 1) *Indian Journal of Chemical Technology*
- 2) *Pramana – Journal of Physics*
- 3) *Tetrahedron*

Types

Usually the following types are observed: Primary periodicals proper, Letters journals, Data periodicals, Previews, Synopsis journals, and Electronic journals.

Primary Periodicals Proper

The features and examples given above belongs to this type of periodicals.

Letters Journal

This type of journal usually includes short communications which are often called 'letters to the editor'. The features of the journal are as follows:

- i) They are brought out by learned bodies and commercial organisations.
- ii) They contain brief description of the research work in progress usually in one or two pages.
- iii) The articles are generally not edited.
- iv) Their periodicity is usually weekly or fortnightly.
- v) The articles contain address of the author, the date of receipt and list of references.
- vi) Sometimes the articles include abstracts.
- vii) They are always indexed or abstracted by secondary periodicals.
- viii) Usually the title of the periodical contains the word 'Letters'.
- ix) Instructions for the contributors are also included in the journals.

Examples:

- 1) *Physical Review Letters*
- 2) *Tetrahedron Letters*

Data Periodicals

You will be surprised to know that there are some periodicals which contain only or mostly numerical data and nothing else. Usually they are scientific data and are of permanent value. Data periodicals are found in fields like ionospheric science, climatology, hydrology, etc. Some **examples** of this type of periodicals are given below:

- 1) *Water Resources Data, Alaska*, etc. This periodical appears separately for all the states of US with the addition of state name in each case.
- 2) *Ionospheric Data, Delhi*.
- 3) *Calcutta Daily Weather Report*

Previews

These periodicals contain summaries of forthcoming full-length articles, titles of short communications and preliminary notes. They are intended to avoid duplication of research effort. The address of the author is also generally provided to enable the interested reader to get in direct touch with the author.

Examples:

- 1) *Biochimica et Biophysica Acta, Previews*. It was published during 1961-1967. Afterwards it formed part of *Biochimica et Biophysica Acta*.
- 2) *Previews of Heat and Mass Transfer*. The journal provides abstracts of recently published papers on the subject from over 100 journals around the world.

Synopsis Journals

Though full-length research papers are published in more or less all research journals, however, the use of full-length research papers is highly limited since only a very few need every detail of the paper. A vast majority is interested in the concluding part, a particular table, a particular figure, etc. As the publication of full-length research papers in journals is labour intensive, time consuming and a costly affair, some suggestions made are as follows:

- i) Pirie suggested two versions of journals – complete version, and summary version. The complete version will be for libraries and those who want detailed information. The summary version will be for others.
- ii) Bernal suggested the following: “instead of the present intermediate length paper of ten to twenty pages, it would be better to have a short, pointed paper of some two pages in the form of what has been called an informative abstract. This would be supplemented by a longer, more detailed paper, not printed or published, but available in duplicated, microfilm or other method of reproduction, to all those thought to be interested in it or who requested it”.
- iii) Phipps suggested three levels of publications – i) full-length report of the paper, ii) two-page summary, and (iii) an abstract for deposition in a central office. Each of these will have the same code number. Scientific journals would publish summaries of most papers, and full-texts of selected papers. Abstracts would be sent to journal subscribers. They can obtain copies of full-length papers from the central office if need be.

There were not many takers of the suggestions, probably because the authors themselves did not delve deep into the economic consequences of such ventures. However, there were a few attempts. In 1968, the American Chemical Society conducted a survey to find out the feasibility of bringing out *Journal of Organic Chemistry* in two editions – a complete edition for libraries and a condensed version for general circulation. The survey did not go in favour of publishing two editions.

With the financial support of National Science Foundation, the American Chemical Society brought out two editions of the *Journal of the American Chemical Society*. The summary version provided synopsis of articles prepared by the authors themselves, book reviews and communications to the editor. The archival version meant for libraries contained author's typewritten manuscripts in reduced size.

The journal *Chemie – Ingenieur-Technik* printed only synopsis of some of the technical articles, the original manuscript being available on microfiche on request. With the introduction of this procedure the normal publication time of 9 to 12 months got reduced to three months. The subscriber also used to get full-length articles in microfiche.

Electronic Journals

Electronic journals are also known as e-journals. Journals bought out in electronic form are termed as electronic journals. Majority of the important primary periodicals of the world are available in electronic form. Most of these journals are available both in printed and electronic forms. There are some primary journals which are available only in electronic form.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

1) Describe the salient features of primary periodicals.

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2.2.2 Reports

In a library various types of reports are encountered. They may be categorised as Technical reports, Administrative reports, and Trip reports.

Technical reports are possibly the most important of the three categories. These reports usually originate through mission-oriented research projects of governments, industrial organisations or other agencies. Often, the agencies themselves do the experimentation. Sometimes they are assigned to some other bodies who have the necessary infrastructure to carry out the experiment. Reports brought out depicting the various stages of the project are termed as Progress Report, Interim Report, Final Report, etc. In some cases only one Report is brought out. These reports are usually submitted within the stipulated time. They are generally in typed or mimeographed form, not printed or published, produced in limited number, used by the agency that carried out the research work itself or sponsored the research project, and are for restricted circulation. Majority of these reports belong to nuclear, aerospace and defence sciences. Hence, more often than not, they are stamped as 'Top Secret' or 'Confidential' and termed as 'Classified' reports. These reports are not edited by professional editors, nor they are refereed. Still these reports are considered as primary sources of information as they contain results of mission-oriented research.

A research-based technical report includes scope, objective, methodology, research results, application of research results, etc. Based on these reports, scientists, engineers and technologists implement various projects.

As long as these reports are 'classified', they can be used only by selected people of the agency which has sponsored or produced the reports. At a particular point in time, many of these reports are 'declassified' and made available to the public. Now, the literature contained in these is open and can be used by anybody. Possibly, the largest number of technical reports are produced by the United States. National Technical Information Service (NTIS) of the US is the supplier of copies of all technical reports that are declassified or non-classified.

Administrative reports are usually brought out by ministries, departments, institutions, associations, etc. The most common form of these reports are the Annual Reports. They are brought out every year and contain, among others, the details of the activities performed during the preceding year, plan for the next year, financial statements regarding income and expenditure, etc. Reports of institutions, associations, etc. usually provide a number of other information as well, such as, list of members of the governing body, report on the annual general meeting, council meetings, executive and finance committee meetings, conferences organised, etc. Administrative reports of research institutions provide a good deal of information about the research work done, application of research results, and the research work going to be undertaken next year.

Trip reports - Government officials, company executives, businessmen, scholars, scientists, and many others visit different parts of the world on various missions and purposes. During their visits, they hold talks with their counterparts, sign agreements, finalise business deals, attend conferences, study markets, go around various establishments, sites, trade fairs, and places of their interest, examine machineries and other products, etc. On their return, they usually submit a report to the authorities concerned. These reports are usually type-written or computer-composed, stapled, produced in small number, and circulated only among the concerned employees. Hence, there is no bibliographical control of these reports. However, in many cases they form an important component of the knowledge base especially of companies or enterprises and are classified as grey literature.

Many trip reports are available on the Internet. The site www.eurobirding.com provides links to more than 5,000 birding trip reports around the world. On the Internet, trip reports of various places like New Zealand, Las Vegas, St Martins are also available.

2.2.3 Anthologies of Papers

A **festschrift** is a collection of writings published in honour of a learned person. Every year many festschrift volumes are brought out in the world. Usually, in a festschrift the biographical sketch of the person, discussion on her/his contributions, personal narratives about the person are included. In addition, a number of articles contributed by her/his professional colleagues, students, friends, and others are also included. Sometimes, the articles are contributed on a specific topic.

In 2003, a festschrift was brought out in honour of Mr. A K Dasgupta. It was titled as *National Bibliographical Control: Problems and Perspectives – Essays for A K Dasgupta*. In this case, the topic for the festschrift volume was fixed in advance. Accordingly, contributions were asked from the authors. In all, 33 articles devoted to the theme have been included in the volume. Moreover, a bibliography of Dasgupta's writings, numbering about 200 has been included.

It may be noted that all contributions in a festschrift are not research papers. But, in many cases they may be original contributions. For example, a person may describe a few unknown episodes about the learned person in whose honour the festschrift is being brought out. This piece will not be considered a research work, but surely an original contribution.

There is another kind of anthology of papers known as **collected works**. For example, *The Collected Papers of Albert Einstein* brought out by Princeton University, USA is a publication of this category.

2.2.4 Conference Documents

Conference documents are also important sources of information as they often contain nascent ideas. Thousands of conferences are held every year throughout the world. According to the scope, these conferences are categorised as international, national, and provincial. International Conference on Information Management in a Knowledge Society, organised at Mumbai during 21 to 25 February 2005 to commemorate the golden jubilee of IASLIC, was an international conference. Indian Library Association organised 49th All India Library Conference at Bundelkhand University, Jhansi, during 29th December 2003 to 1st January 2004. This was a national conference. Every year Bengal Library Association also organises a conference where mostly librarians from Bengal participate. This is a provincial conference.

Conferences can also be grouped according to subjects. For example, Indian Science Congress held every year at different places in India is devoted to science, All India Library Conference organised by Indian Library Association every year is devoted to library science, etc. Every year a specific subject is chosen for a conference. For example, International Conference on Information Management in a Knowledge Society (February 2005), organised by IASLIC was devoted to information management.

Conferences generate different types of documents. Announcements, call for papers, programmes, etc. appear before the conference and are rightly called *pre-conference documents*. During the conference, in many cases, the volume containing the papers to be presented in the conference is released. For examples, the volume entitled *Information Support for Rural Development* released during 21st National Seminar of IASLIC (Calcutta: 31st December 2004 – 3rd January 2005) included about 60 papers and a dozen extended abstracts. In addition, the copies of inaugural addresses and other papers not included in the volume are sometimes distributed to the participants. Many a times, the organisers of a conference bring out a **souvenir** at the time of the conference.

A souvenir is something that is given to someone as a memento. When a souvenir takes the form of a publication, more often than not it becomes a good source of information. For example, the Organising Committee of 21st National Seminar of IASLIC (2004/05) has brought out a souvenir that included the following articles: (1) IASLIC: a brief note by M N Nagraj, (2) Jadavpur University and its library system by Benode Bihari Das, (3) Libraries and library movement in West Bengal: a birds eye view by Prabir Roychowdhury, (4) Jadavpur University Department of Library and Information Science: past and present by K P Majumdar, (5) LIS education and research in West Bengal: an overview by Amitabha Chatterjee, and (6) Vintage Calcutta by Chittaranjan Palit. Apart from the articles, the Souvenir included a small map of Kolkata, Programme of the XXI National Seminar of IASLIC, list of various committees and their members, IASLIC Council (2004–2005), and list of presidents and general secretaries (since beginning till date). Thus, you can see that the Souvenir harbours many such articles and can act as a good reference source.

Conference proceedings, list of delegates, etc. appear after the conference and they are rightly called *post-conference documents*. Conference proceedings usually include discussions, speeches, minutes and resolutions. In certain cases, conference papers and the proceedings are brought out together at a later date by a publisher in the form of a book or as a special issue of a journal.

It may be noted that papers presented in conferences may not always contain original ideas. Most of them may be just informative articles.

2.2.5 Monographs

A monograph presents a detailed study on a single subject, class of subjects, or a person, and is usually accompanied with a bibliography. Some publishers bring out monograph series as well. A monograph portrays an overall picture of the topic and can be used by specialists, students, even a layman. Examples: Roy S. C. *Monograph on the Gur Industry of India* (New Delhi: ICAR, 1951), Tewary D. N. *Monograph on Eucalyptus* (Dehra Dun: Surya Pub, 1992). The sources present respectively an overall picture of gur industry in India and eucalyptus plants.

It may be noted that all the information contained in a monograph may not be primary information. In many cases substantial information is gleaned from primary sources. Of course, there will be some original information too.

2.2.6 Official Publications

Government publications are official publications. A government generates both primary and secondary documents. *Defence Science Journal*, brought out by DESIDOC, Delhi is a primary publication. On the other hand, *Indian National Bibliography* brought by Central Reference Library, Kolkata, is a secondary publication. Apart from periodicals, a government brings out at times reference books, e.g. *India – A Reference Annual*, reports of various commissions and committees, patents, standards, etc. Once upon a time, the second part of *Indian National Bibliography* used to list a large number of government publications brought out in India.

2.2.7 Patents

The word 'patent' means an official right given to a person to make, use or sell a product, process, design, etc. invented by her/him for a fixed number of years. In other words, a patent is a government grant to a patentee conferring on her/him for a stated period of time the exclusive privilege of using the patented invention. It may be noted that the inventor may not always be the patentee. The inventor is one who has invented the item. If s/he is an employee of an organisation then the organisation might be the patentee. It may be clear to you by now that a patentee may be a person or organisation to whom a patent will be granted.

When we talk of patents as source of information, then it means a document that provides the details of an invention which may be an equipment, a machine, a process, a product like a drug or a chemical, or any other object. A patent is considered as the primary source of information and more often than not it is the only source of information on the topic, more detailed than any other source, and forms, in many cases the earliest literature on the topic. In

many patents, the description is enriched with copious diagrams and figures. Patents are issued by the patent office of the country. Usually, a patent having high potential of exploitation, is patented in a number of countries. As a result, the patent gets translated in a number of languages. Hence, anybody interested in the patent in a particular language, say Japanese, might get it. In this way in many cases the need for translating a patent gets eliminated.

The information content of a patent specification is enumerated as below:

- i) **Name of the country or official agency:** In British patents, the national emblem is given instead of the name of the country. In the case of some countries like Germany and USSR, both the name and emblem is given. Some countries record only the official name of the agency.
- ii) **Number of the protective document:** In the patents of Germany, UK, and many other countries, the patent number is given. In Japanese patents, only the serial number is given.
- iii) **Type of document:** Patent specification is mentioned on the document of such countries as UK and Australia. Nothing is mentioned in US patents. In the documents of Soviet Union, Authors Certificate / Patent Specification is mentioned depending on the document.
- iv) **Information about the inventor:** Countries like Soviet Union, Japan, UK and India mention the name of the inventor. Some countries do not mention the name.
- v) **Classification number:** On the patent specification, generally, the class number is given. The internationally accepted classification scheme for classifying patents is known as *International Patent Classification*. This apart many countries have their own classification schemes. Some countries also provide UDC numbers on patents.
- vi) **Textual matter:** It is the statutory requirement of the patent law that the description of an invention in the specification must be sufficiently clear and detailed so that any one skilled in the art can use the patent without consulting the inventor time and again. The Indian patent law in this regard is even more specific. It requires that the complete specification must fully and particularly describe the nature of the invention, its operation and use, and the method whereby it is to be performed and must also disclose the best method of performing. Because of this statutory obligations, the inventor tries to describe the patent sufficiently clearly and in full-length. For example, the Indian patent (No. 83788) on computers with error recovery runs to 83 pages and 111 drawing sheets. In the Indian patent (No. 101146) relating to data handling systems, there are 25 pages and 74 drawing sheets. You may notice that in both the patents there are huge number of drawing sheets.
- vii) **List of claims:** Usually this is the last item in a patent specification. Here the inventor enumerates the claims one by one. The claims indicate in how many ways this invention is superior to others.

Self Check Exercise

- Note:** i) Write your answer in the space given below.
 ii) Check your answer with the answers given at the end of this Unit.
- 2) Enumerate the components of a patent specification.

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2.2.8 Standards

A standard is something set up and established by authority as a rule for the measure of quantity, weight, extent, value or quality [Webster]. Here, we are concerned with the documents that provide detailed description of a standard published by a standard-issuing institution of a country like our Bureau of Indian Standards. These documents are also termed as **standard specifications**. Standards are always categorised as primary sources of information. These documents appear in A4 (210mm x 297mm) or A5 (148mm x 210mm) size and in most cases are pamphlets.

Standards are broadly categorised in two groups:

- 1) Technical/industrial standards, and
- 2) Physical and scientific standards.

Technical/industrial standards are further categorised as

- 1) **Dimensional standards:** These standards are formulated to secure uniformity, interchangeability, and simplification of the types and sizes of one product. *Example: ISO/R169 – 1960. Sizes of photocopies (on paper) readable without optical devices.*
- 2) **Performance and quality standards:** These standards are meant for generating quality products. A product manufactured according to the standard will do or perform whatever it is expected to do or perform. For example, a pressure cooker manufactured in accordance with a standard will not burst under excessive pressure. The excess pressure will automatically escape through the pressure valve. *Example: IS: 3253-1965. Hourser-laid nylon rope for mountaineering purposes.*
- 3) **Standard test methods:** These standards prescribe standard methods for testing, chemical analysis, determination of constituents in a chemical compound, etc. *Example: IS: 2188-1962. Methods of test for paper for electrical purposes.*
- 4) **Methods of use (Code of practice):** These standards are meant for correct application of materials and appliances; installation, operation, maintenance of machineries, plants, etc. *Example: IS: 3916-1966. Code of practice for pig housing.*

- 5) **Definitions:** Definitions are standardised to ensure precise description of a concept, object, etc. *Example: ISO/R 597-1967. Definitions and terminology of cements.*
- 6) **Glossaries:** Glossaries are meant for securing uniformity in the use of terms so that a term in a subject always convey the same meaning. *Example: IS:2550-1963. Glossary of classification terms.*
- 7) **Symbols:** Symbols are standardised so that a particular symbol conveys the same meaning or idea everywhere in the world e.g. road symbols, mathematical symbols. For example, + is the symbol of addition throughout the world. *Example: IS:1890 (Part XI) – 1961. Mathematical signs and symbols for use in the physical sciences and technology.*

[N.B. IS: Indian Standard; ISO–Recommendation of International Organisation for Standardisation]

Physical and scientific standards apply to natural phenomenon which are accurately determined and are not subject to change with the advancement of knowledge (e.g. length, mass, time, temperature, etc.).

2.2.9 Trade Literature

When you visit a trade fair, some people standing on the road hand over to you leaflets, printed sheets, etc. which contains the description of a product, commodity, service, etc. When you purchase a bottle of medicine, you may find inside the packet a printed sheet describing the medicine covering all its important aspects such as composition, mode of administration, dosage, side effects, etc. These are basically the trade literature. Trade literature appears in a variety of forms and content.

Broad characteristics – The broad characteristics of trade literature are enumerated as below:

- i) Provides application-oriented descriptive information.
- ii) Primary source of information about products and processes. Much of the literature is not published in any other form.
- iii) Loses currency very quickly.
- iv) The amount of information varies from a very brief announcement in a sheet to a very elaborate description of the product, process or service. The elaborate description at times takes the form of a pamphlet or a book.
- v) The literature is distributed free.
- vi) Serves dual function – (a) Provides information on the various attributes of a product, process, material, service, etc.; and (b) stimulates sales of the products, processes, etc.
- vii) Appears in a variety of forms such as advertisements, sheets, folders, pamphlets, catalogues, user guides, handbooks, manuals and house journals.
- viii) Usually no date is given on the literature.
- ix) Most of the literature is of ephemeral value and is not preserved by libraries.

- x) At times, the matter is presented with colourful illustrations and diagrams.
- xi) There is practically no bibliographical control of this literature.
- xii) Acts as current awareness service.
- xiii) Not covered by abstracting and indexing services.

Utility – The literature has got various utilities which are listed below:

- i) The literature makes people aware about a product, process or service.
- ii) Helps in decision making. For example, a person was interested in having contact lenses for her/his eyes. A number of organisations were offering the same. S/he was confused as to which organisation s/he should choose. Finally, s/he gathered literature from all the companies, made a comparative study, and then took the final decision.
- iii) The literature provides great help in tracing the gradual development of a particular product, or a range of products, etc. If you go through the trade literature of a particular pen company, you will be astounded to see how the pens of the company has undergone changes over the years size, shape, functionality, variety, etc.
- iv) For writing the history of a manufacturing firm, or the history of a product, the trade literature produced by the firm proves to be invaluable source of information.
- v) The trade literature supplied by the medical representatives helps practising physicians by keeping them updated about the latest drugs entering the market.
- vi) Engineers also use trade literature profusely.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

3) Describe the utility of trade literature.

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2.2.10 Theses and Dissertations

“The two words ‘thesis’ and ‘dissertations’ are used sometimes as synonyms, sometimes separately and sometimes in such a way as to indicate that one term totally embraces the other” (Davinson). A thesis or dissertation is a document (usually unpublished) that contains details of a research conducted under the guidance of an expert. Apart from the hypotheses, objectives, scope, methodology, and results of the study, a thesis contains a detailed literature survey which is useful for the compilation of a bibliography on the subject.

Moreover, sometimes a thesis indicates the areas where further research can be conducted. In some cases, the researcher gives birth to a new methodology, which becomes useful in subsequent research. The thesis is also a primary source of information. As only a few copies of the thesis are produced, it becomes difficult to have an access to the thesis. Nowadays, theses are becoming available in digitised form, hence it can be expected that the problem of accessibility of theses will gradually diminish.

Features

- i) Doctoral theses are usually considered as original work.
- ii) The findings reported in a thesis in most cases appear as articles in learned journals, conference papers, or even as monographs.
- iii) For a research degree, a thesis is examined by an expert in the field and the candidate has also to defend it.
- iv) A thesis is not required to be printed in India, UK, USA, etc. for the award of the degree. In many European countries, it needs to be printed before the degree is awarded.
- v) Theses are usually available on inter-library loan and also as microforms.
- vi) The structure of a thesis are more or less the same in the world.

2.2.11 Project Reports as Partial Fulfilment of Academic Degrees

For the completion of Master's degree, in many universities and institutions, there is a mandatory requirement because of which a student has to work on a project approved by the authorities concerned. The duration for the completion of the project varies from three months (e.g. University of Delhi) to one year (e.g. NISCAIR and DRTC). Accordingly, the size of the project report varies from about 50 pages to several hundred pages. The components of project reports are almost similar to theses. In fact, they look like mini-thesis. Only a few copies are produced in type-written form. There is practically no bibliographical control. The work done is generally original. As such these are also primary sources.

The number of papers generated from such project reports are few. The exercise of preparing a project report gives students a little experience as to how literature search is done, research work is conducted, data is analysed, conclusion is drawn and project report is written.

2.2.12 Reprints

In many cases, after the publication of an article in a journal, the author is supplied with a few printed copies of the article for her/his own use. These printed copies are called **reprints**. If these reprints pertain to research articles, then they are primary sources.

Researchers distribute these reprints to fellow researchers and other potential users. This way the information gets disseminated quicker than most of the abstracting and indexing services.

Many researchers build up a reprint collection of their own and this collection in general is heavily used because most of the reprints a scholar gets pertain to her/his field.

2.2.13 Information Leaflets

Information leaflets are also carriers of information. There is abundance of information leaflets for parents, kids, young people, patients, etc. Suppose, the dentist has extracted the infected tooth of a patient. After the job is done, the dentist may hand over to the patient an information leaflet which will tell the patient how long the pain will continue, the healing process will take, what should be done if any emergency arises, etc. These leaflets may be in multiple languages and are very useful for a doctor who has to see patients speaking different languages.

To get a better idea about an information leaflet, one can have a look at the Patient Leaflet from the BMJ Group <<http://pandemicflu.bmj.com/resources/swine%20flu%20pdf%204pp%20aug%2009.pdf>>. The information has been given in four pages under the following headings:

- Swine flu
- What is swine flu?
- What are the symptoms?
- What treatment works?
- Medicines
- Things you can do for yourself.
- Ways to avoid swine flu.
- Should I have the swine flu vaccine?
- What if I am pregnant or breastfeeding or looking after young children?
- What will happen to me?

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

4) Describe the salient five components of information leaflet for the Periodicals Section of your library.

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2.2.14 Preprints, Manuscripts

A preprint is a type-written scientific paper, i.e. the manuscript, that is yet to be published in a scientific journal. That means that the paper is yet to be peer-reviewed.

From the initial submission in typewritten form to the publication of a paper, the process often takes weeks, months or even more because manuscripts are to undergo peer review. The basic need to quickly circulate among scientific community the research results has propelled researchers to distribute manuscripts, i.e. preprints, among fellow scientists. This process allows authors to receive early feedback from the scientists working in the same field, which at times becomes helpful in revising the paper before final submission.

Since early 1990s, preprints are being distributed electronically through the Internet leading to the creation of massive preprint databases and institutional repositories of preprints (Preprint).

2.2.15 Laboratory Notebooks

A researcher has to keep a daily record of her/his laboratory activities, experiments, thoughts ideas, etc. This may include the details of the experiment s/he has done such as materials and equipment used in the experiment, duration, results, etc. The date is always mentioned in the diary. The hypothesis s/he has tried to formulate, the various ideas that flashed across her/his mind, the equipment or device s/he has imagined, the interpretation of the results s/he has thought about, etc. are to be recorded meticulously. “The notebook serves as an organisational tool, a memory aid, and can also have a role in protecting any intellectual property that comes from the research”.(Lab notebook). If there is any dispute as to who has first discovered a certain thing, laboratory notebooks play a vital role in solving such a dispute.

Michael Faraday, popularly known as the ‘Father of Electricity’ meticulously maintained his diary recording all his research activities. Faraday’s Diary is a bound and sequentially numbered set of books, containing 16,041 numbered entries dated 25 August 1832 to 6 March 1860. Now this has come out in the form of a book in seven volumes containing 3500 pages and thousands of illustrations by Michael Faraday himself. (Faraday’s Diary) This diary today serves as an inescapable source of information for biographers as well as historians of science.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

5) Briefly describe Faraday’s Diary.

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2.2.16 Diaries

Writers, scholars, rulers and many others maintain diaries. These diaries provide most authentic biographical material and plenty of other information. Normally these diaries are handwritten and sometimes depending on their importance they are published also. The diaries of Fanny Burney, English novelist, titled *Early Diary 1768–78*, and *Diary and Letters 1778-1840* beautifully depict the background of the period.

2.2.17 Memoranda

A memorandum or memo in short is usually a document that aids our memory by recording events or observations on a topic, which may be used in a business organisation. The plural form is either memoranda or memorandums.

There are various types of memoranda such as memorandum of agreement, memorandum of association, memorandum of understanding (MoU), etc. The format of a memorandum varies from office to office, transaction to transaction. A memo is a record of the terms of a transaction or contract agreed upon by two or more parties. They could be one page long or run into many pages. If the user is a minister or a senior executive, the format might be rigidly defined and limited to one or two pages. If the user is a colleague, the format is usually much more flexible. At its most basic level, a memorandum can also be a handwritten note to one's supervisor (Memorandum).

Memorandum of Agreement (MoA)

It is a written document that binds parties to work cooperatively 'on an agreed upon project or meet an agreed upon objective'. 'An MoA is a good tool to use for many heritage projects. It can be used between agencies, the federal or state governments, communities, and even by individuals. An MoA lays out the ground rules of a positive cooperative effort' (Memorandum of agreement).

Memorandum of Association

It is a document that governs the relationship between the company and the outside, and one of the documents required to incorporate a company in the United Kingdom, Ireland and India. It is also used in many of the common law jurisdictions in the Commonwealth countries (Memorandum of association).

For any registered society in India, Memorandum of Association forms the constitution of the society and the documents includes: Name of the society, Registered office, Aims and objectives, Executive committee, Founder members, Rules and regulations.

Memorandum of Understanding (MoU)

It is a document that records a bilateral or multilateral agreement between parties. The parties may be government, organisations, institutions, etc. 'It expresses a convergence of will between the parties, indicating an intended common line of action. It is often used in cases where parties either do not imply a legal commitment or in situations where the parties cannot create a legally enforceable agreement. It is a more formal alternative to a gentlemen's agreement' (Memorandum of understanding).

2.2.18 Internal Research Reports

Often companies, institutions and organisations conduct research to survey the market, consumer behaviour, sale of a particular product, etc. It is also possible that a country is closely watching the defence activities of a neighbouring country. The results of such research are recorded in a document. This document is for internal use only and hence called internal research report. Usually, it is not made public. Sometimes internal committee reports are published in the form of a book. The book *China's Banking and Financial Markets: The Internal Research Report of the Chinese Government* by Li Yang and Robert Lawrence Kuhn (Wiley, 2007) is of that type.

2.2.19 Minutes of Meetings

In an office, apart from governing body there is an executive committee, purchase committee, staff selection committee, etc. All these committees hold meetings from time to time. The agenda of the meeting, members present in the meeting, deliberations that took place and the decisions taken in the meeting are all meticulously recorded in a document. This document is called the minutes of the meeting. Usually, this document is kept in a file and used for official purposes from time to time. For example, the minutes of the book selection committee meeting is used for ordering books in a library.

2.2.20 Official Files

In every office one can find a collection of files that have been accumulated over the years. In certain offices the collection is huge. If you classify the files, you will notice that they broadly belong to personnel, capital items like buildings, machineries, books and periodicals, etc., maintenance and repair, stationeries, etc.

These files contain notes, draft or copy of letters, clippings of printed tenders, advertisements, and others. The vital decisions taken by a government, chairman of a company, head of an institution or organisation, a general and many others are also recorded in these files. You will also find in these types of files, the original letters written by persons like Mahatma Gandhi, Abraham Lincoln, Winston Churchill, and all other celebrities in the world. You should remember that these files do not have any other copy in the world. Hence, the information contained in the files is precious. To preserve these files, archives have been built all over the world.

For writing the history of a country or any place, finding the details of the history of a war, or functioning of a government, or a government official, these files prove to be important sources of information.

In the office files one category of files is known as **personal files**. These files include the details of a person's joining a government office or any other organisation, various posts s/he has held, salaries drawn, various leaves s/he has taken, the date of her/his retirement, the retirement benefits s/he got, etc. In unearthing the life history of a president, prime minister, governor, minister, or any other government official, a freedom fighter, etc. the files prove to be of invaluable sources of information.

2.2.21 Correspondence

Ever since the system of writing developed man has been writing letters. Of late, with the advent of e-mail, the usual practice of writing letters on materials like paper has greatly diminished. Letters written by *litterateurs* like Rabindranath Tagore have been published in several volumes. Apart from literary value, many of the letters have got not only biographical but historical significance. Most daily newspapers have got the letters to the editor column. Many libraries of the world like our National Library, Nehru Memorial Museum and Library, etc. have huge collection of letters.

2.2.22 Information Cards

A card containing information is an information card. A postcard harbouring a letter, an invitation card to attend a marriage or meeting, a report card from the teacher of a child, a menu card of a restaurant, are all information cards. These cards may be handwritten or printed. Many of them are of ephemeral value.

2.2.23 Medical Records

Medical records comprise of prescriptions, pathological reports, X-ray reports, ultrasonographic reports, MRI reports, surgical reports, electroencephalograms, mammograms, colour Doppler test reports, etc. All these carry valuable information using which the doctors diagnose various ailments defects and fracture, presence of foreign bodies inside the body, etc. The prescription is a valuable document for the patient as well. In hospitals many of these reports are preserved for future use as they play a very important role in future treatment, etc.

2.2.24 Audio and Video Tapes

Audio tapes may contain lectures by eminent professors, scientists, authors, politicians, and others. Often, debates in legislative bodies, cross examinations of the criminals, are also audio-taped as they authenticate the statement of a person. Naturalists audiotape the call of birds and various wild animals, in defence various types of firing, bombing, etc. are audiotaped, in medicine, the beats of the heart in its various conditions are audiotaped, in railway transport, the various sounds of a train generated by it while passing through a tunnel, a forest, over a bridge, etc. are also audio-taped. In addition to these, there are various instances when sounds are audiotaped. All these audiotapes are used to teach students undergoing training in the respective areas.

In radio stations all over the world, millions of audiotapes are available. Whenever needed, clips from these tapes are broadcast whereby the listeners can hear the original voice of the persons like Mahatma Gandhi and Indira Gandhi.

Many **video tapes** nowadays have audio components also. Take for example, a video tape on open heart surgery – it will not only show every detail of the surgery by surgeons but also will be associated with commentary whereby a student will be able to learn the detail of a surgery. In metallurgy as well as in chemical analysis, the colours of flames are videotaped. Seeing the colour of the flame emanating from a blast furnace, metallurgists can estimate the inside temperature of the blast furnace and inside temperature of the reaction. Similarly, the colour of a flame helps a chemist in the identification of a salt.

In a media centre like Doordarshan, you will find thousands and thousands of video tapes. In the library of media centres they greatly outnumber books, and their use is also multifarious. Suppose, a person has become the prime minister of a country, immediately, the media centres in the world will go through all the video tapes where the person figures. Out of these tapes, appropriate clips will be selected and shown during the broadcast.

2.2.25 Computer Programs

A computer program is 'a series of coded software instructions to control the operation of a computer' (program). Everyday numerous programs are written either for a new job to be executed by a computer or new version of an old program. These programs are the property of companies who have produced them. Usually it is for their exclusive use. As such there is practically no bibliographical control of these programs.

2.2.26 Data Files

A data file is 'a set of related records (either written or electronic) kept together'. Examples of data files are: databases, spreadsheets and e-mails. (data files). It is to be noted that all databases are not primary sources. There are databases of secondary and tertiary sources as well. A database devoted to a primary periodical is a primary source.

2.3 SUMMARY

An attempt has been made here to familiarise you with various types of primary sources. It is not the case that all primary sources have been covered exhaustively. Some sources which are generally not covered in textbooks and course materials have been covered here e.g. project reports, information leaflets, information cards, etc.

In this Unit, we have covered primary periodicals embracing primary periodicals proper, letters journal, data periodicals, previews, synopsis journals, and electronic journals. In the case of reports technical reports, administrative reports and trip reports have been dealt with. Two types of anthologies of papers, i.e. festschrift volumes and collected works have been discussed. While writing about conference proceedings, souvenirs have also been included as in many cases souvenirs are also issued along with conference proceedings. Monographs and official publications have been dealt with next. Official publications have also been dealt with under various heads like standards, patents, administrative reports, etc. Generally librarians do not pay much attention to trade literature though in many institutions they are highly useful. Hence, the topic has been dealt with in some detail. Theses, dissertations and project reports submitted as partial fulfilment of a degree have been discussed. Somehow project reports have not gained much importance as a primary source. In addition, laboratory notebooks, diaries, various types of memoranda, internal research reports, minutes of meetings, correspondence, information cards, medical records, audio and video tapes, computer programs and data files have been discussed.

2.4 ANSWERS TO SELF CHECK EXERCISES

- 1) The features of primary periodicals are as follows:

- i) They are brought out by learned bodies, private or commercial organisations, and sometimes by a government.
 - ii) The articles contain something original and new interpretations.
 - iii) Articles published are of high standard which is ensured by refereeing procedure.
 - iv) Usually the address of the author is provided.
 - v) The date of receipt of the article is generally indicated.
 - vi) Instructions to the authors are generally given.
 - vii) The abstracts of the articles are generally included.
 - viii) The articles include list of references.
 - ix) They are always indexed or abstracted in secondary periodicals.
 - x) They are usually termed as journals, proceedings, transactions, etc.
 - xi) Many of them do not contain any editorial, notes and news, obituaries, etc.
- 2) The component of a patent specification are:
- i) Name of the country or official agency.
 - ii) Number of the protective document.
 - iii) Type of document.
 - iv) Information about the inventor.
 - v) Classification number.
 - vi) Textual matter.
 - vii) List of claims.
- 3) The utility of trade literature is described below:
- i) The literature makes people aware about a product, process or service.
 - ii) It helps in decision making. For example, when a product is being manufactured by several firms, at that time a comparative study of trade literature helps in taking the final decision.
 - iii) The literature provides great help in tracing the gradual development of a particular product, or a range of products, etc. If you go through the trade literature of a particular pen company, you will be astounded to see how the pens of the company has undergone changes over the years in size, shape, functionality, variety, etc.
 - iv) For writing the history of a manufacturing firm, or the history of a product, the trade literature produced by the firm proves to be invaluable source of information.
 - v) The trade literature supplied by the medical representatives helps practising physicians by keeping them updated about the latest drugs entering the market.
 - vi) Engineers also use trade literature profusely.

- 4) The salient information components of the leaflet are as follows:
- i) The Periodical Section remains open from 9AM to 5PM on all working days.
 - ii) Bound volumes of periodicals are on the shelves arranged in alphabetical order.
 - iii) Current issues of periodicals are on the display racks arranged in alphabetical order.
 - iv) Periodicals are not issued out.
 - v) Leave the periodicals after use on the table.
 - vi) Tearing out the pages of a periodical or damaging it in any other way is a punishable offence.
- 5) Faraday's Diary is a bound and sequentially numbered set of books, containing 16,041 numbered entries dated 25 August 1832 to 6 March 1860. Now this has come out in the form of a book in seven volumes containing 3500 pages and thousands of illustrations by Michael Faraday himself. This diary today serves as an inescapable source of information for biographers as well as historians of science.

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UNIT 3 SECONDARY AND TERTIARY SOURCES

Structure

- 3.0 Objectives
- 3.1 Introduction
- 3.2 Secondary Sources
 - 3.2.1 Secondary Periodicals
 - 3.2.2 Bibliographies
 - 3.2.3 Lists of Research in Progress
 - 3.2.4 Reference Sources
 - 3.2.5 Treatises
 - 3.2.6 Textbooks
 - 3.2.7 Translations
 - 3.2.8 Computer Files
 - 3.2.9 Bibliographic Databases
 - 3.2.10 Databanks
 - 3.2.11 CD-ROMs
- 3.3 Tertiary Sources
 - 3.3.1 Library Catalogues
 - 3.3.2 Bibliography of Bibliographies
 - 3.3.3 Guides to Literature
 - 3.3.4 Directory of Directories
 - 3.3.5 Guides to Reference Sources
- 3.4 Summary
- 3.5 Answers to Self Check Exercises
- 3.6 References and Further Reading

3.0 OBJECTIVES

After reading this Unit, you will be able to:

- define a secondary source;
- describe various types of secondary sources;
- categorise varieties of secondary sources within each type;
- describe a tertiary source; and
- categorise various types of tertiary sources.

3.1 INTRODUCTION

We have already introduced to you the characteristics of secondary sources in Block 1, Unit 1, Section 1.2.8 of this course. These characteristics guide you as to what makes a publication a secondary source. When you examine a particular type of secondary source, you may be amazed to see that within a particular type there are a large variety of publications. All of you have seen dictionaries. If you visit the reference section of a library, you may find that there are unilingual e.g. English to English, bilingual, e.g. English to Hindi,

and multilingual, e.g. English to Hindi and Sanskrit dictionaries. You may find some huge dictionaries. In fact, they are unabridged dictionaries. Sometimes they are published in several volumes. There are also abridged dictionaries usually available in single volumes. There are pocket dictionaries as well. You can very easily carry them in your pocket. There are dictionaries which are even smaller than pocket dictionaries. For example, *Computer Dictionary* by Ian Scales and Geof Wheelwright [New Delhi: Galgotia, n.d.] is having the following dimension 2.5" × 2" × 0.5". You will find dictionaries almost on all important subjects. Dictionaries on phrases and fables, quotations, abbreviations, etc. are also available. From this you can have some idea about the different type of dictionaries. You will also find this sort of variety in the case of encyclopaedias, periodicals, yearbooks, and others. Within the brief scope of this Unit, it is not possible to describe all of them in detail. However, you will get glimpses of many of them. When you will actually work in libraries, you will have the opportunity to handle them and learn about them in much more detail.

3.2 SECONDARY SOURCES

While going through the structure of this Unit given above you have got an idea about the wide spectrum of publications that comprise of secondary sources. We shall discuss these sources to give you some basic idea about them.

3.2.1 Secondary Periodicals

A secondary periodical may be defined as a periodic publication that disseminates information, contained in primary sources in various forms such as index, abstract, digest, account, etc. In this section, we shall discuss about express information services, abstracting services, indexing services, reviews of progress, popular periodicals, technical periodicals, trade journals, house journals, etc.

Express information bulletin – It is a secondary periodical published mostly in Russia and contains detailed summary of the article along with the mathematical formulae, calculations and illustrations. It resembles an abstracting periodical but contains much more detailed information. Usually four issues are published in a month and they are devoted to narrow areas of science and technology such as computer engineering, informatics and radio engineering.

Abstracting periodicals – An abstracting periodical is a periodic publication that contains an abstract of the publication in addition to the bibliographical details. The abstract may be informative or indicative. To give you a clear idea about an abstracting periodical a page from *Indian Library Science Abstracts 2000-2005* [Kolkata: IASLIC, 2010] is being reproduced below.

OX(2,0Z,8e) THE BOOK, GENERAL ASPECT

0006 **DASGUPTA (A K)**. Books, bricks, and bytes. *In* Politics, culture and society: collection of essays in memory of SM Ganguly/ed by Subir K Sen. Kolkata, New Age publisher 2005,143-166

The title of the paper is borrowed from a book (a collection of essays which first came out as a thematic issue of the scholarly, *Daedalus*, vol 125 no. 4, 1996) which is the subject matter of the present paper, i.e. the future of books and libraries. The viewpoint of each author of the book is presented and then the present author

gives his own considered views about the future of libraries and librarianship in the 21st century.

0007 **RISWADKAR (M R)**. Newer media of communication and the book. In Dr. PSG Kumar festschrift- Library and Information Profession in India. V.1,pt.1: Reflections and redemptions. 2004. 38-41

Discusses trends in communication media and its effect on reading habits. It also examines the effect of these media on book publishing and book trade. Concludes that there is no sign of decline in the book industry and reading scores over viewing.

0008 **SHYAMA RAJARAM**. The status of books in the foreseeable future. Lib Her 40(2), 2002,99-105

For over 400 years since the printing of Bible by Gutenberg, printing has been the only mass media of communication. Mentions that radio, television, computer, communication satellite and a number of other electronic communication systems appeared only in the 20th century. Points out that owing to this technological explosion that was experienced in the second half of the 20th century, some prophets of the electronic age pronounced the death of books. Attempts to answer the momentous question - what would be the future of books? Concludes that, books certainly would have an enduring appeal even in the foreseeable future, although their impact in certain areas may get diluted.

OY KNOWLEDGE/UNIVERSE OF SUBJECTS

0009 **DAVARPANAH (M R)**. The face of knowledge in information system. In Information, communication, library and community development (Festschrift in honour of Prof. C P Vashishth), ed. by B. Ramesh Babu and S Gopalakrishnan. 2004, V.1, 39-49

Explains certain ideas used when thinking and discussing the transformation of data (raw facts) to information and knowledge. This has become important as we are in the midst of an economic transition from an area of competitive advantage based on information to one based on knowledge creation.

From the page you may notice that entries are arranged in alphabetical order within the ultimate class. Each entry has a serial number and the bibliographical details of the article. The bibliographical details of the article comprise of author(s), title of the article, and other details that help to locate the document.

An abstracting service is devoted to a particular subject and covers a large number of periodicals in different languages depending on the subject. *Chemical Abstracts (CA)*, [Columbus, Ohio: Chemical Abstracts Service, American Chemical Society, 1907-.Print.] for example, covers articles from more than 10,000 journals, patents, conference proceedings, technical reports, books, dissertations, reviews, meeting abstracts, electronic journals, and web reprints emanating from about 150 countries in more than 50 languages. Three thousand records are added daily to the database called *CAplus*. (SciFinder Web). *CA* provides informative abstracts. The first sentence of the abstract highlights the primary findings and the conclusions reported in the original document. The text that follows gives (i) the purpose as well as the scope of the reported work, (ii) new reactions, compounds, materials, techniques, procedures, apparatus, properties and theories that figured in the work, (iii) new applications of established knowledge, if any (iv) the results of the investigation plus the author's interpretation and conclusion.

Abstracting periodicals generally bring out author and subject indexes. Some abstracting services bring out many more indexes. The indexes brought out by

Chemical Abstracts are subject index, numerical patent index, patent concordance index, author index, formula index, ring index, chemical substance index, etc.

These type of periodicals are basically used for carrying out literature search required for conducting research, writing a review article, a monograph, etc.

Indexing periodicals – An indexing periodical is a periodic publication that includes the bibliographical details of an article or any other document. It does not provide any abstract. Entries are arranged either under class number or under subject headings. Many of these periodicals also bring out author and subject indexes. It is to be noted that an abstracting periodical is usually devoted to a subject which is not the case with indexing periodicals. They may or may not belong to a particular subject. For example, *Readers' Guide to Periodical Literature* [New York: Wilson, 1900-. Print.] covers all subjects. On the other hand *Index Medicus* [Washington: National Library of Medicine, 1960-. Print] is devoted to medicine only.

There are several types of indexing periodicals. In most of the indexing periodicals entries are arranged according to subjects. The subjects are represented either with subject headings or with class numbers. However, in some indexing periodicals only the content pages are reproduced and they are arranged according to the titles of the periodicals. This type of indexing periodicals are of *Current Contents* type. Institute of Scientific Information (ISI) started this type of indexing periodicals way back in 1961. Even now, they are being published by Thomson Reuters in seven series from New York. ISI started publishing another type of indexing periodical called citation indexes. *Science Citation Index* was the first to come out. It appeared in 1963. Subsequently two more major indexes started i.e. *Social Science Citation Index* [New York: Thomson Reuters, 1972-.] and *Arts and Humanities Citation Index* [New York: Thomson Reuters, 1978-.]. In these indexes entries are arranged according to cited authors.

Different types of indexing periodicals are used differently. *Index Medicus* is generally used for compiling bibliographies on medical topics required for conducting research, writing a paper, a book or a monograph, etc. An active researcher always looks for latest articles on her/his area of research. For this purpose s/he usually scans the content pages of a few periodicals devoted to her/his topic. *Current Contents* [New York: Thomson Reuters, 1961-.] helps a researcher to scan the content pages of the periodicals of her/his choice. Citation indexes are used for depicting the citation scenario of the papers written by scientists, scholars, etc. generation of bibliometric indicators like impact factor, immediacy index, etc. of journals, and compilation of bibliographies using source index.

Reviews of progress – A researcher before undertaking a research work intends to be sure about the work that has already been done in her/his chosen field. For this purpose, first of all, s/he compiles a comprehensive bibliography of research documents that have been published in the past years in various countries of the world, in the chosen field, in diverse languages. After the compilation of the bibliography s/he procures all these documents from different libraries and documentation centres. Some of these documents will be in languages which are not known to her/him. Therefore, s/he will have to get them translated. Once the process of compilation of the bibliography, procurements of the documents, and translation of some of them

is complete, s/he can start reading the documents. After reading them carefully s/he knows what research work has already been done on the field and what remains to be done. The process involved is costly, highly laborious, and time consuming. There was a time when procuring a document from Soviet Union used to take about a year or more and a researcher had to spend about a year or so in just completing the literature search. To obviate the difficulty of the research workers, reviews of progress came into being.

Reviews of progress, or simply called 'reviews' are, in fact, articles. They are different from book reviews. A review article is a comprehensive survey of the literature on a narrow field, covering a particular period. The state-of-the-art review informs what all has been done in that field. On the other hand, a critical review provides critical evaluation of new ideas, methods, results and conclusions in the document under review. It is opined that a review article should be long enough to introduce a newcomer to the field and yet short enough to be read for the mere pleasure of exploration'. Every review article is accompanied with a comprehensive bibliography that saves time and labour of a researcher in respect of the compilation of a bibliography.

Review articles are published in journals like *Nature* [London: Macmillan, 1869-.] and *Current Science* [Bangalore: Current Science Association, 1932]. There are many serial publications that publish only review articles. Two such **examples** are:

Advances in Applied Microbiology. Amsterdam: Elsevier, 1959-. Print.

Annual Review of Immunology. California: Annual Reviews, 1983-. Print.

Popular periodicals – A popular periodical, as the name suggests, is a periodic publication that usually serves common people, students, technicians, teachers, and others. These periodicals contain popular articles written in a lucid style on a particular area of knowledge. Learned or pedantic articles are generally not included. Some of the other features of these periodicals are as follows:

- i) They are brought out by governments, societies, commercial publishers and even private individuals.
- ii) Usually popular description of scientific discoveries, inventions, facts, latest developments in various fields, etc. are included in them.
- iii) Articles are not usually refereed and their standards vary.
- iv) The address of the author is not always mentioned.
- v) The date of the receipt of the article is usually not given.
- vi) In many articles the list of references may be absent.
- vii) They are usually not abstracted or indexed.
- viii) Apart from popular articles on various subjects, they usually contain editorials, notes and news, book reviews, obituaries, letters to the editors, biographical sketches, etc.
- ix) One of the prime objects of a popular scientific periodical is popularisation of science.

Examples of two popular periodicals are:

Science Reporter. Delhi: NISCAIR, 1964-. Print.

Vijnan [Hindi]. Allahabad: Vijnan Parishad, 1915-. Print.

Technical periodicals – A technical periodical is a periodic publication devoted to a technical subject. In many cases, a technical periodical embraces the features of both a primary periodical and a secondary periodical. Some of the salient features are enumerated below. These periodicals

- i) are usually brought out by commercial organisations,
- ii) are devoted to a particular branch of technology and are meant for technologists, sales and commercial personnel,
- iii) cater to the information needs of industry by gleaning information from primary sources and presenting it in a lucid form,
- iv) report new technology developed within the industry or outside,
- v) contain illustrated papers (sometimes scholarly) on new processes, equipment, products and materials,
- vi) include editorials providing background information,
- vii) have sections like News Columns, Letters to the Editor, Announcements, Obituaries, Personalia, Book Reviews, Abstracts of Papers/Patents/Standards, New Plants, Processes, Products, Equipment and Materials,
- viii) publish numerous advertisements, (many of them colourful) and also index to advertisers,
- ix) some are printed on art paper, and
- x) a few of them bring out buyers guide, yearbooks, and directories.

Examples: *Colourage*. Mumbai: Colour Publications Pvt. Ltd., 1953-. Print.

Paintindia. Mumbai: Colour Publications Pvt. Ltd., 1951-. Print.

Trade journals – As the name implies, these journals are meant for persons related to trade and contain matters of trade interest. The technical journals also provide a great deal of trade information creating at times difficulty in drawing a sharp line of distinction between them. However, it can be stated that trade journals are more commercial than technical, and more news-oriented. They provide market news (commodity and share prices), company news (forecasts, dividends, merger), trade announcements, value of currency, etc. In many cases they are available free. The format of these journals varies widely. Some are published in tabloid size.

Example: *Chemical Business*. Mumbai: Colour Publications Pvt. Ltd., 1986-. Print.

House journals – Often, an industrial house, a scientific organisation, an educational institution or other bodies bring out different categories of periodicals reflecting mainly the various activities of the house. These periodicals are usually called **house journals** and appear in various forms. Take for example *NBT Newsletter* [New Delhi: National Book Trust, 1985-.], it includes information about book release, book fairs, training courses on

book publishing and related areas, director's message, staff news, new books of NBT, etc.

It should be remembered that apart from newsletters, many industrial houses bring out learned periodicals as well.

You might have noticed that **magazines** have neither been described under primary sources, nor under secondary sources. This is because categorisation of documents in primary, secondary and tertiary sources is mostly applicable to scientific literature. Magazines generally pertain to arts, hence they have not been covered here.

Self Check Exercise

Note: i) Write your answers in the space given below.

ii) Check your answers with the answers given at the end of this Unit.

1) Briefly describe *Chemical Abstracts*.

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2) Write some of the features of a popular periodical.

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3.2.2 Bibliographies

A bibliography is a list of documents arranged in systematic order. Each entry provides the bibliographical details of the document.

Universal bibliography – A 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’ (Krishan Kumar). From 16th century onwards, various attempts have been made towards the compilation of universal bibliographies. No doubt, all attempts resulted in some

bibliographies, but none of which was a universal bibliography in the true sense of the term. It has, so far, remained a distant dream there is little possibility that such a bibliography will be compiled in near future.

National bibliography – A national bibliography lists the publications produced from a nation. They may appear in the form of a book or a periodical. It does not, however, list all sorts of publications. For example, *Indian National Bibliography* does not cover maps, musical scores, periodicals (except the first issue), keys and guides to textbooks, ephemeral publications, etc.

Examples:

- i) *Indian National Bibliography*. Kolkata: Central Reference Library, 1957-. Print.
- ii) *National Bibliography of Indian Literature, 1901-1953*. New Delhi: Sahitya Akademi, 1962-1974. Print.

Trade bibliography – Trade bibliographies are brought out by commercial publishers, booksellers, distributors, printers and others. Normally these bibliographies list books which are meant for sale. Theses, reports, patents, standards, etc. are excluded. Limited bibliographical details are provided in the entries along with the price. The scope of these bibliographies is generally national. Some of them are also international. Usually they cover all subjects and are arranged alphabetically subject-wise. They are mostly used as book selection tools.

Examples:

- i) *Cumulative Book Index: A World List of Books in the English Language*. New York: Wilson, 1898-. Print.
- ii) *Books in Print*. New York: Bowker, 1948-. Print.
- iii) *Indian Books in Print: A Select Bibliography of English Books Published in India*. Delhi: Indian Bureau of Bibliographies, 1969-. Print.

Selective bibliography – A selective bibliography does not cover all the documents on the topic. They are selected on the basis of some criteria. These bibliographies may appear in the form of a book, or a periodical.

Examples:

- i) Dickinson, Asa Don. *World's Best Books, Homer to Hemingway, 3000 Books of 3000 Years, 1050 B.C. to 1950 A.D. Selected on the basis of a Consensus of Expert Opinion*. New York: Wilson, 1953. Print.
- ii) *Aslib Booklist: A Monthly List of Selected Books Published in the Fields of Science, Technology, Medicine and Social Sciences*. London: Association of Special Libraries and Information Bureaux, 1935-. Print.

Bibliography of early printed books – These bibliographies generally include incunabula, books published in 15th or 16th centuries, rare books, etc.

Example:

- i) Proctor, Robert. *An Index to the Early Printed Books in the British Museum : From the Invention of Printing to the Year 1500, with Notes of those in the Bodleian Library*. London: Holland Press, 1960. Print.

Bibliography of anonymous and pseudonymous works – These bibliographies include books by anonymous authors (i.e. books that do not indicate the names of the authors), and pseudonymous authors (i.e. books that indicate the pen names of the authors and not the real names).

Example:

- i) Halkett, S. and Laing J. *A Dictionary of Anonymous and Pseudonymous Publications in the English Language*. 3rd rev. and enl. ed. by John Horden. Harlow: Longman, 1980-. Print.

List of periodicals – The list of periodicals appears in the form of directories, union catalogues, alphabetical lists, etc. The bibliographical details of each entry vary according to the category. Maximum details are given in the entries of the directories.

Examples:

- i) *Ulrich's International Periodicals Directory: A Classified Guide to Current Periodicals, Foreign and Domestic*. New York: Bowker, 1965-. Print.
- ii) *National Union Catalogue of Scientific Serials in India*. 5 vols. New Delhi: INSDOC, 1988. Print.
- iii) Brown, P., and G.B. Stratton, eds. *World List of Scientific Periodicals, 1900-1960*. London: Butterworths, 1963-1965. Print.

List of theses/dissertations – These publications list theses/dissertations produced by an institution – national and international. The arrangement of entries within the publication vary. It may be alphabetical, chronological, subject-wise, etc. Sometimes the entries are accompanied with abstracts.

Examples of all the types are given below:

- i) Indian Institute of Technology, Kharagpur. *Abstracts of the Theses Approved for D. Sc., Ph. D., M. Tech., and M. Sc. Degrees and Post-graduate Diplomas*. Vol. 1, 1955-1966. Kharagpur, IIT, 1967. Print.
- ii) Inter-University Board of India and Ceylon. *Bibliography of Doctoral Dissertations 1857-1970*. New Delhi: The Board, 1973-1975. Print.
- iii) *Dissertation Abstracts International*. Ann Arbor, Mich.: UMI, 1938-. Print.

Subject bibliography – A subject bibliography lists the documents on a given subject. The subject may be a place, person or any other topic. The arrangement of the entries may be date-wise, author-wise, or classified. It may be in the form of a book or a periodical.

Examples of some of the types are given below:

- i) *Asian Social Science Bibliography*. Delhi: Vikas, 1967-. Print.
- ii) Griffith, David. *Bibliography of Chaucer, 1908-1953*. Seattle: University of Washington Press, 1955. Print.
- iii) *Mcgraw-Hill Basic Bibliography on Science and Technology, Recent Titles on more than 7000 Subjects*. New York: Mcgraw, 1966. Print.

Author bibliography – An author bibliography is also known as **biobibliography** or **individual bibliography**. It lists the works of a single author. It is to be noted that a bibliography of the works *on* a particular author is a subject bibliography, and *by* a particular author is author bibliography. Sometimes an author bibliography includes the works by the author as well as on the author, e.g. see the 2nd example given below:

Examples:

- i) Freeman, R. B. *Works of Charles Darwin: An Annotated Bibliographical Handlist*. London: Dawson, 1965. Print.
- ii) Das Gupta, A. K. *Essay in Personal Bibliography: A Bibliography of the Writings on and by Dr. S. R. Ranganathan*. Bombay: Asia Publishing House, 1967. Print.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

3) Write some of the features of trade bibliographies with examples.

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3.2.3 Lists of Research in Progress

In research laboratories, universities, institutes of higher learning, researchers are engaged in research projects. If researchers in the world remain unaware of these projects, it is quite likely that there will be some duplication in research work. To minimise the duplication, a new type of publication has evolved that lists the research projects providing information about the name of the researchers, the name of the institute where the research work is going on, the title of the project, when the work has started, when it is likely to be finished, etc. In addition an informative abstract of the work is given. It is an attempt to have some sort of bibliographical control on the research work in progress.

The categorisation of this type of publication has presented a problem. The information given in the publication is primary since nothing has been published about these projects before. The listing gives the publication the shape of a reference book. Grogan has considered it as tertiary source. It cannot be considered tertiary source since the publication is not based on any secondary publication. Neither it is key to primary or secondary sources. We have placed it under secondary sources as the publications act as reference sources.

Such publications being few in number, are not comprehensively reflected in the literature. Given below are some of the **examples**:

- i) Guha, B., et al. *Current Research Projects in CSIR Laboratories 1972*. Delhi: INSDOC, 1972. Print.
- ii) Inter-University Board of India and Ceylon. *Research in Progress*. New Delhi: The Board, 1968-. Print.
 - V.1 – Physical Sciences. 1958 – 66. 1968.
 - V.2 – Biological Sciences. 1958 – 66. 1968.
 - V.3 – Social Sciences. 1958 – 66. 1970.
 - V.4 – Humanities. 1958 – 66. 1972.
- iii) *Scientific Research in British Universities and Colleges*. London: Department of Education and Science, 1951/52-. Print.

3.2.4 Reference Sources

Reference sources are meant for ready reference. The purpose of these sources is to provide information practically on any topic readily. There are many types of reference sources. Some of them are described below:

Encyclopaedias – Encyclopaedias are sources that provide information on any topic in such a way whereby one can get a holistic view of the topic. Articles contained in them are informative and of varying length, ranging from a few lines to one hundred pages or more. That is why encyclopaedias are used not only as reference sources but also for self-education. Broadly, there are two types of encyclopaedias – **general encyclopaedias** and **subject encyclopaedias**. General encyclopaedias are again categorised by volume, subject and user.

There are many single volume encyclopaedias in the world such as *The New Webster's International Encyclopedia* [Naples, FL: Trident, 1996]. The 1996 edition of the encyclopaedia contains 17,000 entries, around 7,000 cross references, more than 3,800 coloured illustrations, and a map section. It is meant for students and general readers.

Multi-volume encyclopaedias are also numerous. *The New Encyclopaedia Britannica* [15th ed, Chicago: Encyclopaedia Britannica, 1985] is one of the best examples of multi-volume encyclopaedias. It is in 32 volumes and includes more than 4,200 lengthy articles in Macropaedia and 100,000 brief entries in Micropaedia. This is also a general encyclopaedia and includes articles on all areas of knowledge.

On the Internet, you find *Wikipedia*. It is a free general encyclopaedia and by far the biggest of all. As on 24th September 2012, it was having as many as 4,060,383 articles (Wikipedia). This is an electronic encyclopaedia and there is no printed version. It is being updated continuously. As far as the articles are concerned, many a times they are incomplete, lacking references and authentication. However, you must remember that when you are not getting any information on a topic from printed sources, it is quite likely that you will get some information from this encyclopaedia. For consulting this encyclopaedia you do not require any password or money. You can easily consult it using the Internet.

Subject encyclopaedias are also plenty. A subject encyclopaedia is devoted to a particular subject like physics or more than one subject like science and technology. Some of these encyclopaedias are in one volume and some are in two or more volumes. *Mcgraw-Hill Encyclopedia of Science and Technology* [8th ed. New York: Mcgraw, 1997] is a multi-volume encyclopaedia. It is in 20 volumes and includes about 8,000 articles. *The Encyclopedia of Physics* [3rd ed. New York: Van Nostrand, 1985] is a single-volume encyclopaedia containing about 300 well-written articles by around 250 experts.

Encyclopaedias have also been brought out for children. Articles in these encyclopaedias are written in simple language, jargons are explained in simple terms, black and white and coloured illustrations are added whenever necessary to make the article comprehensible to the children. *Children's Britannica* [4th ed. Chicago: Encyclopaedia Britannica, 1988] is a good example of **children's encyclopaedia**. It is in 20 volumes and contains 4200-articles enriched with about 5,000 photographs and 1,500 diagrams.

Dictionaries – A dictionary, as you know, provides ‘a list of words of a language in alphabetical order and explains what they mean or gives a word for them in a foreign language’. Dictionaries are broadly divided into two categories – **general dictionaries** and **subject dictionaries**. General dictionaries include words from all subjects, and subject dictionaries include words from that particular subject to which the dictionary is devoted. General dictionaries, in terms of language can be categorised as follows – monolingual, bilingual and multilingual. In a **monolingual dictionary**, you get the meaning, definition, explanation, etc. of a word in the same language in which the dictionary is written. For example, in *Longman Dictionary in Contemporary English* [3rd ed. Essex: Longman, 1995] you get the definition of information in English only. In a **bilingual dictionary** like *Samsad English-Bengali Dictionary* [5th ed. Calcutta: Samsad, 1980], you get the meaning of English words in Bengali. When you consult *The Collins German Dictionary: German-English/English-German* [New York: Harper Collins, 2008] you get the equivalents of German words in English and vice-versa. Sometimes you find a dictionary providing equivalent terms in three or more languages. These type of dictionaries are called **multilingual dictionaries**. For example, *Elsevier's Dictionary of Library Science, Information and Documentation* [2nd ed. Amsterdam: Elsevier, 1976] is in six languages i.e. English/American, French, Spanish, Italian, Dutch and German. Bilingual and multilingual dictionaries are often used by translators. Hence, they are at times called **translator's dictionaries**.

Dictionaries are also categorised according to coverage of words. Unabridged or comprehensive dictionaries attempt to cover almost all words, phrases, idioms, etc. of a language. For example, the unabridged edition of *Webster's Third New International Dictionary of the English Language* [2nd ed. Springfield: Webster, 1971] has about 450,000 entries. On the other hand, *The Concise Oxford Dictionary* [8th ed. Oxford: UP, 1990], a desk dictionary, has about 120,000 entries and 190,000 definitions. Pocket dictionaries are even smaller.

Dictionaries devoted to specific subjects are called **subject dictionaries**. They are mainly used by subject specialists, students, etc. *Harrod's Librarian's Glossary* [10th ed. Hants: Ashgate, 2005] is a dictionary of this type. It has more than 10,000 entries and is used by librarians, documentalists, information scientists, library and information science (LIS) students and

others. In subject dictionaries also there are bilingual and multilingual dictionaries. *Russian-English Chemical and Polytechnical Dictionary* [3rd ed. New York: Wiley 1975] by L I Callahan is a bilingual subject dictionary. *Vocabularium Bibliothecari — English/French/German* [Paris: UNESCO, 1953] is a multilingual subject dictionary.

There are other types of dictionaries which include among others, glossaries, thesaurus, dictionaries of abbreviations, phrases, slangs, usage, synonyms, antonyms and homonyms.

Handbooks – To comprehensively define a handbook is an arduous task. In *Harrod's Librarians' Glossary* a handbook has been defined as 'a treatise on a special subject, often nowadays a simple but all-embracing treatment, containing concise information, and being small enough to be held in the hand, but strictly a book written primarily for practitioners and serving for constant ... or references'. It is also called a 'Manual' (Prytherch).

We have already seen that a treatise is a serious piece of writing and is meant for advanced learners, on the other hand, a handbook is meant for practitioners and includes formulas, definitions, values of various constants, which are often required by practitioners in their day-to-day activities. Hence, a handbook can never be equated with a treatise. The above definition has equated a handbook with a manual also. We shall treat them separately and show that they are different.

It is to be noted that there is no general handbook. A handbook is always devoted to a particular subject or subjects. For getting the feel of a handbook, you should go through its content and find out what it is. Take for example *Machinery's Handbook* [23rd ed. New York: Industrial Press, 1988]. It contains more than 2,500 pages and includes chapters on mathematics, mechanics, strength of materials, properties, treatment, and testing of materials, dimensioning, gauging and measuring, tools and tool making, machining operations, manufacturing processes, fasteners, threads and threading, gears, splines and cams, bearings and other machine elements, and measuring units. The book provides a good deal of information for practising mechanical engineers, designers, manufacturing engineers, draftsmen, toolmakers and machinists which they require in their day-to-day work.

Manuals – A manual is 'a book that gives instructions about how to use a machine' (Manual). The definition is quite clear and does not create any confusion with handbooks. However, the definition is narrow as manuals give instructions not only for the use of a machine but for other things as well. For example, *A Manual of Engineering Drawing Practice / Colin Simmons and Denis Maguire*. [London, English UP, 1974] provides useful instructions as to engineering drawing. *Manual of Map Reading, Air Photo Reading and Field Sketching* [London: HMSO, 1956-1962] provides guidance as to how a map and air photo should be read and field sketching should be done.

A manual may be in the form of a leaflet, a pamphlet, or a book. Most of them are monolingual. However, bilingual and multilingual manuals are not uncommon. When you purchase a cell phone, a sophisticated calculator, a multifunctional watch, etc. you are always given a manual, using which you can operate the gadget properly.

Indexes – We have already discussed indexing periodicals. Indexes are another species of reference sources. You all have read newspapers. Each day newspapers contain a huge number of articles, editorials, biographical sketches and obituaries. Suppose, you have read in a newspaper about a particular person sometime ago. Today, if you want to find out that information from that newspaper, it will be a gigantic task. To obviate this problem, some newspapers bring out indexes. For example, *Index to the Times of India* [Bombay: Times of India, 1973-] is index to the articles, profiles, obituaries, editorials, etc. published in the Mumbai city edition of *Times of India*. Numerous biographical sketches are published in daily newspapers. To have a bibliographical control of such items, sometimes biographical indexes are brought out by some publishers, whereby a particular biography can be easily located. *Biography Indexes: A Cumulative Index to Biographical Material in Books and Magazines* [New York: Wilson, 1947-] is a very good example of this type of publication.

Data books and tables – Statistical and meteorological publications contain mostly data in tabular form. Yearbooks and handbooks also present plenty of information in tabular form. *International Critical Tables of Numerical Data, Physics, Chemistry and Technology* [New York: McGraw, 1926-33], published in eight volumes, includes only numerical data. We all know that once in ten years the Government of India undertakes census operations throughout the country. The last census operation was undertaken in 2011. Thousands and thousands of enumerators were involved in data collection. Once the data is centrally processed, census publications are brought out in hundreds of volumes containing thousands of tables. Every year India Meteorological Department brings out a large number of publications providing meteorological data. Railway time tables like *Trains at a Glance* [New Delhi: Ministry of Railways, Nov. 2009] also provide information in tabular form of all the passenger trains running in India. *Five-Figure Logarithmic and Other Tables*/ Frank Castle [London: Macmillan, 1909] provides purely numerical data.

Directories – A directory lists names of persons, institutions or organisations of a particular area. The area may be a locality (e.g. Residents' directory), a town (e.g. Telephone directory), a country [e.g. *Directory of British Associations and Associations in Ireland*. Beckenham, Kent: CBD Research Ltd, 1974-], or the world [e.g. *The World of Learning*. London: Europa, 1947-]. A directory may include very brief information such as the name, address and the telephone number as we normally see in a telephone directory. At times, a directory contains a lot more information. For example, *Directory of Scientific Research Institutions in India*. [2nd ed. New Delhi: INSDOC, 1989] provides the following information about an institution: name, name of the head, history, address, names of the divisions and divisional heads, field stations, objectives/functions, areas of research, achievements, special facilities (consultancy, extension, training, etc.), library and information services, other activities, and publications.

Some directories are published annually, and others at regular or irregular intervals. Of course, there are directories that did not publish more than once.

Yearbooks – A yearbook, as the name suggests, appears annually, and updates information every year. Yearbooks are of various types and can be categorised as, general and subject-oriented, or as national, regional and international. *The Statesman's Yearbook* [London: Macmillan, 1864-], *The*

Europa World Yearbook [London: Europa, 1959-.], *Britannica Book of the Year* [Chicago: Encyclopaedia Britannica, 1938-.], etc. fall under the category of **general yearbooks**. However, each one has its own distinctive characteristics. For example, Part I of *The Statesman's Yearbook* deals with international organisations, and Part II with the countries of the world in alphabetical order. Information given under each country comprises of history, territory and population, social statistics, climate, constitution and government, administration, defence, international relations, economy, energy and natural resources, industry, international trade, communications, social institutions, culture, and diplomatic representations. On the other hand, *Britannica Book of the Year 2003* includes Dates of 2003 (Calendar, Disasters), People of 2003 (Nobel Prizes, Biographies, Obituaries), World Affairs, and Events of 2003.

As we have general yearbooks, we also have **subject yearbooks**. The yearbooks portray the development in the particular subject during the preceding year. Some of the notable subject yearbooks are: *The Bowker Annual Library and Book Trade Almanac* [New York: Bowker, 1956-.], *Unesco Statistical Yearbook* [Paris: UNESCO, 1964 -], and *FAO Production Yearbook* [Rome: FAO, 1947-].

Regional yearbooks usually cover a particular region. The general yearbooks that we have already talked about are, in fact, international yearbooks. Several yearbooks are brought out covering a particular region. A few examples of such yearbook are: *Central and South-Eastern Europe* [10th ed. London: Routledge, 2010], *The Far East and Australasia*. 2010 [41st ed. London: Europa, 2010], and *Western Europe 2010* [12th ed. London: Europa, 2010]. Usually these yearbooks portray the economic and political survey of the region. The country survey includes among others, geography, history, economy, statistical survey and directory that embraces the constitution, government, legislature, political organisations, diplomatic representation, judicial system, religion, press, publishers, radio and television, finance, trade and industry, transport, tourism, atomic energy, defence and education.

Many countries of the world bring out **national yearbooks** such as *India: A Reference Annual* [New Delhi: Publications Division, 1953-]. Many of these yearbooks are brought out by the government and hence the information given in them is considered authentic. *India: A Reference Annual* provides information on land and people, national symbols, the polity, agriculture, art and culture, basic economic data, commerce, communications, defence, education, energy, environment, finance, food and civil supplies, foreign relations, health and family welfare, housing, industry, justice and law, labour, mass communication, planning, rural development, scientific and technological development, transport, water resource, states and union territories, welfare, youth affairs and sports, diary of national events, and general information. Other national yearbooks also provide similar information.

Almanacs – By definition, an almanac is ‘an annual calendar containing important dates and statistical information such as astronomical data’. The various almanacs published in our country, usually called *panchang* provide data in chronological order of all the days of the year. Under each date the information given includes the date according to Indian calendars such as Sambat, Christian calendar, Muslim calendar, etc. name of the day (e. g. Sunday), time of sunrise and sunset, day of the lunar fortnight (e. g. *ekadashi*,

purnima), zodiac sign, auspicious time, inauspicious time, specific time for various religious works like marriage, *mundan*, etc., religious event of the day (e. g. Good Friday, Lakshmi Puja), astronomical event (e. g. lunar eclipse, solar eclipse) if it falls on that day, etc.

International almanacs like *Whitaker's Almanac* [London: Whitaker, 1868-.], and *World Almanac and Book of Facts* [New York: Newspaper Enterprise Assoc., 1868-.] are more like yearbooks than almanacs. For example, *Whitaker's Almanac* 2002 provides up-to-date information about government and social structure of the United Kingdom and the rest of the world. In addition, it brings together a wide range of facts, figures and directory information. Only a small portion of the book is devoted to astronomical data like the time of sunrise, sunset, moonrise, moonset, lunar and solar eclipses, etc.

Maps – A map is a sheet of paper or similar material on which the earth's surface, or part of it is shown indicating countries, oceans, seas, mountains, rivers, deserts, roads, etc. You will find a single-sheet map of all major cities of the world. Take for example, *Delhi Tourist Road Map* [Delhi: Delhi Tourist Publications, n.d.] of 50.5cm x 75cm. size depicts the roads of all the areas of Delhi and adjacent states. In the inset it shows, Connaught Place, Chanakyapuri and Delhi Metro. As we have maps of the earth, we also have the maps of the moon, the sky. A sky map shows among others the position of the stars, constellations, zodiac as they are seen at various time of the year.

Atlases – An atlas is a book that usually contains maps and an index of places and other geographical entities indicating their locations in particular maps. Generally, by the term atlas, we mean only geographical atlases. However, there are non-geographical atlases as well.

Geographical atlases vary widely in scope. Some are international [e.g. *The Times Atlas of the World*. 8th ed. London: Times, 1990], national [e.g. *National Atlas of India*. Calcutta: National Atlas and Thematic Mapping Organisation, 2001], regional [e.g. *Atlas of the Middle East*. Washington: US Central Intelligence Agency, 1988], and local [e.g. *Master Atlas of Greater London*. 12th ed. London: A-Z Map Co. Pvt. Ltd., 2008].

Non-geographical atlases also cover a number of areas such as economics, astronomy, medicine, and history.

Examples:

- i) *Oxford Economic Atlas of the World* .4th ed. Oxford: Oxford UP, 1972. Print.
- ii) *The Cambridge Atlas of Astronomy*. 3rd ed. Cambridge: Cambridge UP, 1988. Print.
- iii) Gilroy, Anne M., MacPherson, Brian R., Ross, and Lawrence M. *Atlas of Anatomy*. New York: Thieme Med. Pub., 1997. Print.
- iv) *The Times Atlas of World History*. 4th ed. Mapplewood, N.J., Hammond: 1993. Print.

Globes – A globe is a sphere, the surface of which shows countries, oceans, seas, mountains, rivers, deserts, etc. just like a map. It is mounted on a stand and can be rotated around its axis. The surface of globes is generally plain.

However, there are also globes with raised surfaces indicating the presence of mountains. Nowadays, the globe of the moon is also available. The moon globe brought out by National Aeronautics and Space Administration of the United States is a standard one. **Examples** of some of the globes available with Britannica Store, Chicago are as follows:

- i) *10" Illuminated Globe for Kids.*
- ii) *Crystal Marquise Blue Land Globe.*
- iii) *Official NASA Moon Globe.*

Gazetteers – A gazetteer is a dictionary of place names and other geographical entities with descriptive, statistical, economical, geographical and historical information. Sometimes a gazetteer is called a geographical dictionary, e.g. *Webster's New Geographical Dictionary* [Rev. ed. Springfield: Webster, 1984]. Other geographical dictionaries provide meanings and definitions of geographical terms. Gazetteers can be categorised as international, national, state, and district. **Examples** of various gazetteers are as follows:

- i) *Columbia Lippincott Gazetteer of the World.* New York: Columbia University Press, 1952. Second printing with supplement. 1962. Print.
- ii) *The Gazetteer of India – Indian Union.* 4 vols. New Delhi: Publications Division, 1965-1978. Print.
- iii) Chopra, Prabha, ed. *Delhi Gazetteer.* Delhi: Delhi Administration, 1976. Print.
- iv) *Rajasthan District Gazetteers – Chittaurgarh.* Jaipur: Government Central Press, 1977. Print.

Guidebooks – Guidebooks are usually meant for tourists and provide various information usually required by them. For a place of tourist's interest these books provide such information as when to go, how to go, where to stay, what to see, what to eat, where to shop, etc. In addition, information regarding visa, money exchange, weather, etc. is also given. Usually guidebooks cover a region, a country, or a city. *Fodor's* guides are the famous. It has published guidebooks for a large number of countries of the world and a few major cities. These guidebooks are updated quite frequently. Lonely Planet is also a famous publisher of guidebooks. Some **examples** are given below.

- i) *Fodor's India.* 6th ed. New York: Fodor's, 2008. Print.
- ii) *Fodor's New York City 2010.* New York: Fodor's, 2010. Print.
- iii) *India Travel Guide.* 13th ed. London: Lonely Planet, 2009. Print.

Biographical sources – A biography is an account of someone's life. Biographical sources appear in the form of biographical dictionaries and individual biographies. **Biographical dictionaries** are of three types: Who is Who, Who was Who, and a combination of both. These are all general in nature. There are also biographical dictionaries devoted to various subjects.

Who is who provides biographical information about various persons who are living. For example, *International Who's Who* [London: Europa, 1935-.] covers only internationally known living celebrities and includes information

date of birth, nationality, education, profession, career, present position, honours, awards, present address, etc.

Who was who as the name suggests includes only those personalities who are dead. A good example of this type of biographical dictionary is *Who was Who* [London: Black, 1929-]. It includes biographical sketches of only those personalities who are dead.

Webster's Biographical Dictionary [Springfield: Webster, 1972] falls under the third category. It includes biographical sketches of both living and dead persons.

A number of **subject biographical dictionaries** are also available. *American Men and Women of Science* [22nd ed. New York: Bowker, 2004] is a good example of a subject biographical dictionary. It includes biographical sketches of about 120,000 living scientists belonging to physical, biological and related sciences residing in North America.

Biographical dictionaries can also be categorised according to the area they cover. Thus, they can be categorised as international, regional and national. *International Who's Who*, *Who was Who*, and *Webster's Biographical Dictionary* are all international in scope. *American Men and Women of Science* is regional as it covers scientists both from USA and Canada. *Dictionary of National Biography* ed. by S N Sen [Kolkata: Institute of Historical Studies, 1972-74. 4 vols.], *India Who's Who* [New Delhi: INFA, 1969-] are national biographical dictionaries.

Sometimes biographical dictionaries are produced considering gender as a criterion. For example *The World Who's Who of Women* [Cambridge: Melrose Press, 1973-1997] includes only women.

Individual biography forms another category of biographies. **Autobiographies** also fall under this category. *Srinivasa Ramanujan: A Mathematical Genius* / Srinivasa Rao [Madras: East-West Bks., 1988] is a pure example of an individual biography. On the other hand, *A Librarian Looks Back: An Autobiography* / S R Ranganathan [New Delhi: ABC Pub. House, 1992] as the name suggests is an autobiography.

3.2.5 Treatises

A treatise is 'a long and serious piece of writing on a particular subject'. For example, *A Treatise on Heat* by M N Saha and B N Srivastava. [4th ed. Allahabad, Indian Press, 1958] is a veritable source of information on heat for advanced learners. Similarly, *Prolegomena to Library Classification* by S R Ranganathan [Madras: Madras Library Association, 1937] is also a treatise on classification theory and an infallible source of information on the subject.

3.2.6 Textbooks

A textbook is a book that is 'used by students as a standard work for a particular branch of study'. Throughout our educational career we have studied textbooks to gain knowledge on various subjects. In student life the textbook act as a major source of information for students. Teachers in schools, colleges, universities also use textbooks to update their knowledge, prepare class notes, clarify doubts, etc. Some textbooks like Gray's *Anatomy*

[Gray, Henry. *Anatomy of the Human Body*. 40th ed. Amsterdam: Elsevier, 2008] serve as a classic textbook and a veritable reference source on the subject.

3.2.7 Translations

A primary source when translated into another language becomes a secondary source. Many Russian primary journals are translated into English. For example, *Soviet Geology* is a cover-to-cover translation of Russian journal *Sovetskaya Geologiya*. Books are also translated from one language to another. For example *Ramayana* by Valmiki was translated into Hindi by Tulsidas as *Ramcharitamanas*. Here Valmiki *Ramayana* is the primary source, and *Ramcharitamanas* is the secondary source. You will be interested to know that *Index Translationum* [Paris: UNESCO, 1932-.] published every year is a world bibliography of translations. 'The database contains cumulative bibliographical information on books translated and published in about one hundred of the UNESCO Member States since 1979 and totals more than 1,800,000 entries in all disciplines: literature, social and human sciences, natural and exact sciences, art, history. It is planned to update the work every four months and provides bibliographical details of all books translated in the world' (*Index Translationum*).

3.2.8 Computer Files

A computer file is a collection of records or programs stored under a single filename. For computerisation of a library catalogue, we create a record for each and every book in a computer. All these records are stored in a computer under a single name. The collection of these records constitutes a file and the name given to it is called filename. The digitised form of a book, a periodical, a thesis, etc. can be a computer file. Depending on the content, a computer file can be a primary, secondary or a tertiary source.

3.2.9 Bibliographic Databases

A database is a collection of cross-referenced files designed to retrieve information from a number of access points. A large number of indexing and abstracting services in the world have created their own databases which can be searched from any part of the world on payment basis to retrieve desired information. For example, *Medline* is the database of the indexing service called *Index Medicus*, *CAPLus* is the database of the secondary service called *Chemical Abstracts*, etc.

3.2.10 Databanks

There are a number of vendors that possess a large collection of online databases. The collection is sometimes referred to as databanks. After obtaining a password from the vendor one can search all these databases from a single access point. For example, DIALOG, a service of The Dialog Corporation, has been serving users since 1972. Its collection of over 900 databases handles more than 700,000 searches and delivers over 17 million document page views per month.(Dialog)

3.2.11 CD-ROMs

A CD-ROM becomes a source of information only when it contains data. The amount of data that a CD-ROM can contain may be gauged from the fact that Compton's Reference Collection harbours in a single CD-ROM, 24 volumes

of *Compton's Concise Encyclopedia*, *Compton's World Atlas*, *The New York Public Library Desk Reference*, *The Macmillan Dictionary of Quotations*, *Webster's New World Dictionary*, *Webster's New World Thesaurus*, and five other business reference works. The data accommodated on CD-ROMs may include colourful pictures, sound, animation, and facility for interaction. Many a times, the matter on CD-ROM is in hypertext that facilitates surfing from one item to another with ease.

Self Check Exercise

Note: i) Write your answers in the space given below.

iii) Check your answers with the answers given at the end of this Unit.

4) Give a brief description of *Wikipedia*.

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5) What is an almanac? Briefly describe with examples.

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3.3 TERTIARY SOURCES

3.3.1 Library Catalogues

Bibliographies have been categorised under secondary sources, and bibliography of bibliographies under tertiary sources. You may note that both the types are bibliographies. Library catalogues are also bibliographies

reflecting the collection of a particular library or a group of libraries i.e. union catalogue. They are being placed here since in a library catalogue you will find documents belonging to primary sources, i.e. a thesis, secondary sources, i.e. a treatise, and tertiary sources, i.e. guides to reference books.

All of you are familiar with library catalogues in card form, printed form and digitised form. Here a few **examples** are being given of printed form.

- i) British Museum. Department of Printed Books. *General Catalogue of Printed Books*. 263 vols. London: British Museum, 1965-1966. Print.
- ii) Library of Congress. *A Catalogue of Books represented by Library of Congress Printed Cards, issued up to 31 July 1942*. 167 vols. Washington: Library of Congress, 1942-1946. Print.
- iii) *Union List of Serials in the Libraries of the United States and Canada*. 3rd ed. 5 vols. New York: Wilson, 1965. Print.

3.3.2 Bibliography of Bibliographies

A bibliography of bibliographies is a list of bibliographies. They may be classified, or arranged alphabetically subject-wise or otherwise. Most of them are in book form. However, there are some which are issued periodically. In the **examples** given below, the first one is issued periodically. The other two are in the book form.

- i) *Bibliographic Index: A Cumulative Bibliography of Bibliographies*. New York: Wilson, 1937 - .Print.
- ii) *Index Bibliographicus*. 4th ed. The Hague: Federation Internationale de Documentation, 1959-64. Print.
- iii) Besterman, Theodore. *A World Bibliography of Bibliographies and of Bibliographical Catalogues, Calendars, Abstracts, Digests, Indexes and the Like*. 4th ed. 5 vols. Geneva: Societas Bibliographica, 1965-67. Print.

3.3.3 Guides to Literature

A guide to literature helps a researcher, reader and the like to find the primary, secondary and tertiary sources of literature on a specific subject. These guides are in the form of books, and are available for many fields. It should be noted that these 'guides to literature' are totally different from 'guidebooks for tourists' which we have already dealt with earlier. Guides to literature are available for fields like social sciences, history, biology, and others. A few **examples** are given below:

- i) Anthony, L. J. *Sources of Information on Atomic Energy*. Oxford: Pergamon, 1966. Print.
- ii) Bottle, R. T. *The Use of Chemical Literature*. 2nd ed. London: Butterworths, 1979. Print.
- iii) Hoselitz, Beret F., ed. *Reader's Guide to the Social Sciences*. Rev. ed. New York: Free Press, 1970. Print.

3.3.4 Directory of Directories

A 'directory of directories' lists the directories available on a particular topic or pertaining to a particular area. For example, *Guide to American and Scientific and Technical Directories* [2nd ed. New York: Todd, 1975] is

devoted to science and technology. On the other hand, *Guide to American Directories* [9th ed. Detroit: Gale, 1975] lists directories emanated from America.

3.3.5 Guides to Reference Sources

Various types of reference sources have been discussed above. Guides to reference sources list reference books of all types usually subject-wise. Given below are the **examples** of two most important guides to reference sources.

- i) Balay, Robert, comp. *Guide to Reference Books*. 11th ed. Chicago: American Library Association, 1996. Print.
- ii) Walford A. J., ed. Walford's *Guide to Reference Materials*. Vol.1, 7th ed. 1996, Vol.2, 8th ed. 2000, Vol. 3, 5th ed. 1991. New York: Neal, 1991-2000. Print.

3.4 SUMMARY

This Unit discusses the secondary and tertiary sources of information with the help of appropriate examples. Under secondary sources, secondary periodicals have been described that included express information bulletins, abstracting periodicals, indexing periodicals, reviews of progress, popular periodicals, technical periodicals, trade journals, and house journals. In all cases examples have been provided.

While describing bibliographies, universal bibliography, national bibliography, trade bibliography, selective bibliography, bibliography of early printed books, bibliography of anonymous and pseudonymous works, list of periodicals, list of theses and dissertations, subject bibliography, and author bibliography have been covered.

List of research in progress has been treated separately as it is neither a bibliography nor an abstracting periodical. Bibliography is a list of documents. This type of publication lists research projects not documents.

In this Unit under reference sources we have also covered various types of encyclopaedias, different types of dictionaries, handbooks, manuals, indexes, data books and tables, directories, yearbooks, almanacs, maps, atlases, globes, gazetteers, guidebooks, and different types of biographical sources.

Treatises, textbooks, translations, computer files, bibliographic databases, databanks, and CD-ROMs have also been covered separately.

Under tertiary sources, library catalogues including union catalogues, bibliography of bibliographies, guides to literature, directory of directories and guides to reference sources have been described.

3.5 ANSWERS TO SELF CHECK EXERCISES

- 1) *Chemical Abstracts (CA)*, covers articles from more than 10,000 journals, patents, conference proceedings, technical reports, books, dissertations, reviews, meeting abstracts, electronic journals, and web reprints emanating from about 150 countries in more than 50 languages. Three thousand records are added daily to the database called *CAplus*.

CA provides informative abstracts. The first sentence of the abstract highlights the primary findings and the conclusions reported in the original document. The text that follows gives (i) the purpose as well as the scope of the reported work, (ii) new reactions, compounds, materials, techniques, procedures, apparatus, properties and theories that figured in the work, (iii) new applications of established knowledge, if any (iv) the results of the investigation plus the author's interpretation and conclusion.

- 2) A popular periodical, as the name suggests, is a periodic publication that usually serves common people, students, technicians, teachers, and others. These periodicals contain popular articles written in a lucid style on a particular area of knowledge. Learned or pedantic articles are generally not included. Some of the other features of these periodicals are as follows:
 - i) They are brought out by governments, societies, commercial publishers and even private individuals.
 - ii) Usually popular description of scientific discoveries, inventions, facts, latest developments in various fields, etc. are included in them.
 - iii) Articles are not usually refereed and are of varying standards.
 - iv) The address of the author is not always mentioned.
 - v) The date of the receipt of the article is usually not given.
 - vi) In many articles the list of references may be absent.
 - vii) They are usually not abstracted or indexed.
 - viii) Apart from popular articles on various subjects, they usually contain editorials, notes and news, book reviews, obituaries, letters to the editors, biographical sketches, etc.
 - ix) One of the prime objects of a popular scientific periodical is popularisation of science.
- 3) Trade bibliographies are brought out by commercial publishers, booksellers, distributors, printers and others. Normally these bibliographies list books which are meant for sale. Theses, reports, patents, standards, etc. are excluded. Limited bibliographical details are provided in the entries along with the price. The scope of these bibliographies is generally national. Some of them are also international. Usually they cover all subjects and arranged alphabetically subject-wise. They are mostly used as book selection tools.

Examples:

- i) *Cumulative Book Index: A World List of Books in the English Language.* New York: Wilson, 1898-. Print.
- ii) *Books in Print.* New York: Bowker, 1948-. Print.
- iii) *Indian Books in Print: A Select Bibliography of English Books Published in India.* Delhi: Indian Bureau of Bibliographies, 1969-. Print.

- 4) *Wikipedia* is a free general encyclopaedia and by far the biggest of all. As on 24th September 2012, it was having as many as 4,060,383 articles. It is an electronic encyclopaedia and there is no printed version. It is being updated continuously. As far as the articles are concerned, often most of them are incomplete, without proper references therefore, lacking authentication. However, you must remember that when you are not getting any information on a topic from anywhere, it is quite likely that you will get some information from this encyclopaedia. For consulting this encyclopaedia no password or money is required. One can easily consult it using the Internet.
- 5) By definition, an almanac is ‘an annual calendar containing important dates and statistical information such as astronomical data’. The various almanacs published in our country, usually called *panchang*, provide data in chronological order of all the days of the year. Under each date the information given includes the date according to Indian calendars such as Samvat, Christian calendar, Muslim calendar, etc., name of the day (e. g. Sunday), time of sunrise and sunset, day of the lunar fortnight (e. g. *ekadashi*, *puṛnima*), zodiac sign, auspicious time, inauspicious time, specific time for various religious works like marriage and *mundan*, religious event of the day (e.g. Good Friday, *Deepavali*), astronomical event (e.g. lunar eclipse, solar eclipse) if it falls on the day, etc.

International almanacs like *Whitaker’s* and *Information Please Almanac* are more like yearbooks than almanacs. For example *Whitaker’s Almanac* 2002 provides up-to-date information about government and social structure of the United Kingdom and the rest of the world. In addition, it brings together a wide range of facts, figures and directory information. Only a small portion of the book is devoted to astronomical data like the time of sunrise, sunset, moonrise, moonset, lunar and solar eclipses, etc.

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UNIT 4 CRITERIA OF EVALUATION

Structure

- 4.0 Objectives
- 4.1 Introduction
- 4.2 Checklist of Evaluation
 - 4.2.1 Past Record
 - 4.2.2 Authority
 - 4.2.3 Scope
 - 4.2.4 Treatment
 - 4.2.5 Arrangement
 - 4.2.6 Special Features
 - 4.2.7 Format
 - 4.2.8 Book Reviews
 - 4.2.9 Limitations
 - 4.2.10 Conclusion
- 4.3 Reference Sources
 - 4.3.1 Bibliographies, Abstracting and Indexing Periodicals
 - 4.3.2 Dictionaries
 - 4.3.3 Encyclopaedias
 - 4.3.4 Yearbooks and Almanacs
 - 4.3.5 Directories
 - 4.3.6 Geographical Sources
 - 4.3.7 Biographical Sources
- 4.4 Other Sources
 - 4.4.1 Textbooks
 - 4.4.2 Handbooks and Manuals
 - 4.4.3 Trade Catalogues
 - 4.4.4 Statistical Information Sources
 - 4.4.5 Sources of Information on Current Affairs
 - 4.4.6 Primary Periodicals
 - 4.4.7 Reviewing Periodicals
- 4.5 Summary
- 4.6 Answers to Self Check Exercises
- 4.7 Keywords
- 4.8 References and Further Reading

4.0 OBJECTIVES

After reading this Unit, you will be able to:

- explain that evaluation of a book is a systematic intellectual process;
- state that librarian's evaluation of a book is different from the reviewers evaluation; and
- describe the process involved in evaluating the reference books.

4.1 INTRODUCTION

A library receives various types of documents. Of these documents, some are in printed form, some in electronic form, some in typed or mimeographed form, etc. These documents are received through purchase, exchange and gift. Some libraries which have been declared legal depositories by virtue of an act passed by the government to receive documents from publishers free of cost. University libraries usually receive a copy of the thesis free of cost which is submitted for PhD or such other degree by a student.

The question arises whether all documents being received by the library are to be evaluated. The answer is – No. Suppose, the manuscripts of all books written by a famous author are being donated to a library with the consent of the library authority. In such a case the librarian is to accept all the manuscripts – even if some of them are incomplete or damaged, for the simple reason that they are of national importance. Similarly, a college or university library is to procure the textbooks that have been prescribed for a particular course by the authority. There is little choice for evaluation. While working in a library you will find numerous practical cases where there is no option for evaluation. You are simply to go for the book.

In most cases readers fill in book selection slips for the procurement of books. Some slips are also prepared by the library staff going through book reviews or bibliographies. A list is prepared based on these slips and the same is placed before the selection committee. Order is placed for the books that are selected by the book selection committee. Thereafter, the books are received and processed. Only after the book reaches the library, the librarian gets a chance to see the book. There is practically no chance for evaluation of any of these books. A librarian does not have the choice or the time to evaluate all documents being procured for the library.

Many distributors/vendors/publishers deposit some books every week to various libraries with the expectation that some of the books will be purchased by the libraries. It is really these books which need to be evaluated by the librarian before they are placed in front of the book selection committee.

For evaluating a book you are not to read the whole book like a book reviewer. You are to follow the checklist and gather relevant data. Based on the data gathered you are to give your conclusion.

Now the question arises which documents are to be evaluated by a librarian. Though many types of documents can be evaluated by well-established procedures, however, in BLIS courses, evaluation of reference books is usually taught. In this Unit, we shall try to cover reference books that usually form part of primary and secondary sources and also textbooks and primary periodicals.

The question that may generally crop up in the mind of a student is that why do we undertake evaluation of reference books at all? The information provided in a reference book may be (i) backdated, (ii) inadequate, (iii) biased, and (iv) wrong. The book may be (i) very highly priced, (ii) poorly printed or bound, (iii) written in a difficult language, (iv) without an index, etc. For example, *India 2010 – A Reference Annual* (New Delhi: Publications Division, 2010) – a vital and authentic reference source of information on India is without an index. As a result, to ferret out a piece of information from

this book of about 1300 pages proves to be extremely difficult and time consuming. Often, a reference librarian fails to retrieve the information even though the information is available. However, it is still the most authentic and heavily used source.

4.2 CHECKLIST OF EVALUATION

For evaluation of a reference book, the authorities have prepared a checklist which includes past record of the publisher, authority, scope, treatment, arrangement, index, special features, book reviews, limitations, format, and conclusion. Now we shall discuss all these components one by one.

4.2.1 Past Record

Reference books in most cases are very costly publications. For example, the library price of *The New Encyclopaedia Britannica*, 2010 edition is around \$1500.00 (Rs.70,000.00/-) and that *Webster's Third New International Dictionary* (hardbound) is about Rs. 3500.00/-. Moreover, abstracting and indexing services are periodicals for which one year subscription is to be paid in advance. If an indexing service or abstracting service ceases publication before the expiry of the subscription, the library loses some money. If a reference book does not provide authentic, detailed and up-to-date information, the users' purpose will not be served. Reference books are heavily used. Hence, paper, printing and binding of the book should be of high quality. There are many publishers like Oxford University Press, Wilson, Europa, and McGraw-Hill who are bringing out well-known reference books for decades or centuries. If the past record of a publisher is found to be good, then it becomes easy to decide about the procurement of the book. On the other hand, if the publisher is new, little known or unknown, then it becomes essential to read the reviews about the book before taking a final decision. It is to be remembered that past record of the publisher is an important element in the selection of a reference book.

4.2.2 Authority

The authoritativeness of a reference book is usually judged on the basis of the qualifications, reputation, and experience of the author, compiler, and the editor responsible for the book, and the reputation, experience, and the past record of the publisher/corporate body. For example, Encyclopaedia Britannica, Inc. is publishing *The Encyclopaedia Britannica* since 1768. The publisher is in existence for about 250 years. During this period it has brought out 15 official editions of the *Britannica* and various versions of *Britannica* such as *Children's Britannica* and *Encyclopaedia Britannica India*. The 15th edition of the *Britannica* brought out under the title *The New Encyclopaedia Britannica* in 1974 was in 30 volumes. All encyclopaedias brought out by this publisher are considered to be top grade encyclopaedias. Whenever a new encyclopaedia or any other reference book is brought out by this publisher, the librarians all over the world will naturally consider it a standard publication and would like to go for it. For the publication of standard reference books, the well-known publishers employ knowledgeable compilers, experienced editors and reputed authors. For example, some of the articles of the *Britannica* are written by Nobel laureates.

4.2.3 Scope

When we talk of scope, we generally take into account the subject, geographical area, time span, forms of documents, language, target user, etc. We shall clarify these points with an example. Let us take for example, *Indian National Bibliography (INB)* [Kolkata, Central Reference Library, 1958-]. This bibliography covers publications on all subjects, published from India. It includes mainly books published during a particular period in major Indian languages. For example, in *INB 2010*, books published in 2010 will be generally covered. Mostly librarians, publishers, distributors, etc. are the target users of *INB*. From this you find that the scope of *INB* relates to *books published from India in Indian languages during a particular period*. It does not cover periodicals other than the first issue, patents, standards, etc. Neither it covers books published from India in tribal languages. A librarian has to examine whether the book adheres to its stated scope. There may be cases where the declared scope may be global, in reality the book may cover a particular country only and provide some sketchy information about other parts of the world.

4.2.4 Treatment

Here the term 'treatment' implies thoroughness, completeness, reliability, bias, style, illustrations, etc. Let us take two dictionaries – *The Concise Oxford Dictionary* [10th ed. Oxford: OUP, 1999] and *Webster's Third New International Dictionary of the English Language* [2nd ed. Springfield, Webster's, 1971] popularly known *COD* and *Webster's Third International* respectively. *COD* contains 240,000 words, phrases and definitions, and *Webster's Third International* contains 450,000 entries. The first edition of *Webster's* dictionary published in 1934 included 600,000 entries. From the data we find that *Webster's Third International* is more **thorough and complete** compared to *COD*. The aforesaid two dictionaries include only words. On the other hand *The Random House Dictionary of the English Language* [Unabridged edition New York, Random House, 1966] includes not only words but also important personages, place names, important biblical and other characters as well as illustrations. In this way the treatment of reference books differs and no two reference books will be the same.

Apart from thoroughness and completeness, **reliability** of information contained in a reference book is of great importance. In the reference books brought out by well-known publishers generally you will not find any factual error, grammatical error, stylistic error, etc. Data from these books are freely quoted by people without any hesitation. As far as **biasness** is concerned most reference books have some bias. For example, *Encyclopedia Americana* [New York: Grolier, 1976] is biased towards America and *Encyclopaedia Indica* [New Delhi, Chand, 1975] is biased towards India. The target users of reference books at times differ. Accordingly the **style** of writing differs. For example, *Children's Britannica* [4th ed. Chicago: Encyclopedia Britannica, 1988] is written in a completely different style compared to *The New Encyclopaedia Britannica*. In children's encyclopaedias difficult words are generally avoided. Whenever jargons are used the meaning is given in simple language immediately after the jargons. Moreover, these encyclopaedias contain plenty of colourful illustrations.

4.2.5 Arrangement

Variety of arrangements are noticed in reference books. Alphabetical arrangement is quite common. You should know that there are two types of alphabetical arrangement: letter-by-letter, and word-by-word. Let us take the following terms — **back bench, backbone, backdate, backdoor, back focus, backpack, and back pass** and arrange them in both the ways. On arranging they will be in the following order:

Letter-by-letter arrangement

back bench

backbone

backdate

backdoor

back focus

backpack

back pass

Word-by-word arrangement

back bench

back focus

back pass

backbone

backdate

backdoor

backpack

In a letter-by-letter arrangement, a term composed of two or more words is considered as one word as if there is no gap in between. On the other hand, in a word-by-word arrangement each word of the term is considered separately.

Arrangement differs depending on the type of reference books. In bibliographies you may find entries are arranged in classified, alphabetically subject-wise, alphabetically author-wise, chronological or in some other order. In most dictionaries, encyclopaedias, subject indexes, author indexes, the arrangement is alphabetical. In most handbooks and manuals, there is no alphabetical arrangement. These books are usually divided into chapters which are arranged in some logical order.

4.2.6 Special Features

Many reference books have some unique features which others do not have. For example, *The Random House Dictionary of the English Language* includes a directory of colleges and universities of the United States and Canada, and a basic style manual which other English language dictionaries do not provide. Some reference books are updated at regular intervals, others irregularly. There are some which are not updated at all. For example, *Newman's Indian Bradshaw* [Kolkata: Newman, 1886-.] is updated monthly. Yearbooks and almanacs are updated annually. Some directories are updated annually, but many are updated at irregular intervals. For example, *Directory of Scientific Periodicals* (New Delhi: INSDOC (now NISCAIR), 1964-.) was first brought out in 1964. Thereafter, it is being updated at irregular intervals. Apart from unique features and mode of updation, presence of bibliographies, supplements, appendices, etc. are also considered as special features.

4.2.7 Format

Format takes into account binding, quality of paper, font, page makeup, and illustrations. We shall consider all these points one by one.

Binding – There are various types of binding such as paper binding, cloth binding, Rexine binding, half leather binding, full leather binding, etc. Books that are used heavily and for a longer period of time require durable binding, such as half leather binding or full leather binding. On the other hand books that are used less often and for a shorter period of time, for example, a railway time table, usually require less costly binding such as paper binding. Here the librarian has to decide which binding s/he would prefer for which type of books. Suppose a dictionary is available in card-board binding as well as in leather binding. As a dictionary is heavily used for a longer period of time, it is preferable to go for leather binding.

Quality of paper – Books are printed on various types of papers such as newsprint, bond paper, book paper, and magazine paper. For short durable publications and cheaper editions, usually newsprint is used. On the other hand, fine quality book papers are used for long lasting books. As reference books are used very heavily and for a long time since the new editions appear at longer intervals, they should be printed on a high quality book paper. A librarian has to keep in mind how long the book will be in heavy use. A yearbook remains in heavy use for a year only. A yearbook of 2010 will remain in heavy use till the yearbook of 2011 comes out. The moment the yearbook of 2011 is in the library the use of 2010 yearbook will immediately come down. Hence, even if the yearbook is printed on low quality paper, it can be procured. The same is not true for an encyclopaedia or a dictionary as the new edition of an encyclopaedia or a dictionary comes out at longer intervals of even 50 years or more. The books printed on good quality paper should always be preferred.

Font – Fonts of numerous types and sizes are used for printing. Books printed with such fonts which are soothing to the eye should be preferred. Smaller font size strains the eyes and therefore, a book printed with smaller fonts cannot be read for long. Similarly all types of font are not soothing to the eyes. For example, the font called Courier New of size 9 is quite soothing to the eye but the same size of Times New Roman is not. For this type of font, bigger size is preferable.

Page makeup – A page is made up of textual matter and illustrations. To accommodate more matter in a page some publishers print books with minimum inter-line space as well as inter-word space. This also strains the eyes. Only such books as are printed with optimum inter-line and inter-word space should be preferred.

In every printed page there are left margin, right margin, top margin and bottom margin. The margin should be sufficiently wide. If the left margin is too narrow, then some portion of the matter or illustration may not be visible if the pages are sewn for rebinding. During binding, the top, bottom and right margins are also cut off to make the edges totally uniform. If the margins are narrow, some portion of the matter may get cut. Thus, books with wide margins are preferable compared to books with narrow margins.

Illustrations – There are various types of illustrations such as frontispiece, plate, photograph, portrait, map, plan, facsimile, table, chart and diagram that are found in books. These illustrations may be in black and white or in colour. In many cases coloured illustrations serve much better purpose than black-and-white illustrations.

4.2.8 Book Reviews

Book reviews are published in newspapers, journals, magazines, etc. There are even book review periodicals which publish only book reviews. Book reviews are written by scholars and many people of eminence. Hence, book reviews must be given due importance while evaluating a book.

4.2.9 Limitations

All reference books have some limitations however comprehensive they may be. Take for example, *Webster's Third International*. This dictionary is one of the most comprehensive English language dictionaries currently available. Yet this dictionary does not contain any phrase or idiom. Moreover a dictionary cannot cover all the words that have come into use very recently. Encyclopaedias are also not free from limitations. The comprehensive encyclopaedias that are published in many volumes cannot be updated at short intervals. The 14th edition of the *Encyclopaedia Britannica* was brought out in 1929, and the 15th edition in 1974. The gap between the two editions is 45 years.

Due to the dynamic nature of knowledge, encyclopaedias become outdated in no time. The accumulation of new knowledge demands the coverage of new subjects in encyclopaedias. The coverage of new subjects demands addition of more volumes. The publisher cannot add any number of volumes to accommodate all new subjects. To maintain a balance it has to compromise by dropping out many articles of the older edition. The article on Toru Dutt which figured in the 14th edition of *Britannica* does not figure in the 15th edition.

In this way, examples of limitations can be given for all types of reference books. This very particular phenomenon obliges libraries to procure more than one reference book of the same type with the hope that what is missing in one will be found in the other.

4.2.10 Conclusion

The overall judgment on a reference source is to be reflected in the conclusion whereby the authorities concerned will be able to take a decision about its procurement. The conclusion may be written point-wise.

Self Check Exercise

Note: i) Write your answers in the space given below.

ii) Check your answers with the answers given at the end of this Unit.

1) Describe how the authoritativeness of a reference book is judged.

.....
.....
.....
.....
.....

- 2) Differentiate between letter-by-letter and word-by-word arrangement with suitable examples.

4.3 REFERENCE SOURCES

Now we shall discuss how reference books are evaluated. Among the reference books, we shall cover bibliographies including abstracting and indexing periodicals, dictionaries, encyclopaedias, yearbooks and almanacs, directories, geographical sources and biographical sources. This Unit also includes the evaluation of textbooks, handbooks and manuals, trade catalogues, statistical information sources, sources for current affairs, primary periodicals and reviewing periodicals.

4.3.1 Bibliographies, Abstracting and Indexing Periodicals

In this Unit, we shall discuss systematic bibliography. A systematic bibliography lists bibliographical details of documents in a particular order. When these bibliographies are brought out periodically they are called indexing periodicals, e.g. *Index Medicus* [Washington, National Library of Medicine, 1960-2004]. Some bibliographies include abstracts along with bibliographical details of documents. They are called abstracting periodicals, e.g. *Indian Science Abstracts* [New Delhi, NISCAIR, 1964-]. The third type is usually a one-off publication. For example, *International Bibliography of Rice Research* compiled by International Rice Research Institute [New York: Scarecrow Press, 1963] is a one-off bibliography.

Past record – For one-off bibliographies, the question of past record does not arise. It applies to indexing and abstracting periodicals which are published periodically, at regular intervals, and generally continue for long. For the purpose of selection, the past record may be examined to see whether there have been frequent changes in the periodicity, or frequent interruptions in the publication, etc.

Authority – In this case the publisher and sponsor are to be examined. In the three examples given above, in all the cases, the publishers/sponsors are famous. If need be, any of the above mentioned publications can be purchased/subscribed without any difficulty. The problem will arise if the bibliography is recent or not. Abstracting and indexing periodicals with international scope are usually costly publications. If these periodicals are brought out by a less known publisher or sponsor, adequate care has to taken before finally selecting the periodical for a library.

Scope – The scope of bibliographies varies. For example, the scope of *Indian Science Abstracts* is national, and that of *Chemical Abstracts* is international. Many bibliographies cover various types of documents in diverse languages. For example, *Chemical Abstracts* covers journal articles, patent specifications,

technical reports, conference proceedings, monographs, reviews, dissertations, etc. in about 50 languages of the world.

Treatment – In an abstracting periodical the abstract may be informative or indicative. Its coverage may be exhaustive or selective. The same is applicable to an indexing periodical.

Arrangement – The arrangement of entries varies from bibliography to bibliography. In *Chemical Abstracts* [Columbus, Ohio: American Chemical Society, 1907-.] entries are arranged under broad headings. Even under the broad headings entries are not arranged alphabetically. On the other hand, in *Indian Science Abstracts* entries are arranged according to Universal Decimal Classification and alphabetically author-wise under the main class. In *Indian National Bibliography*, entries are arranged under Dewey Decimal Classification number.

Items of information – An entry in an indexing periodical differs from document to document. For a journal article, an entry usually comprises of name of the author/s, title of the article and other bibliographical details like year, volume number, issue number, page number/s, etc. In indexing periodicals, the language of the article is also mentioned if it is other than English. In the case of a book, apart from the names of author/s and collaborator/s, the title, edition, imprint, collation, etc. are mentioned. For patents and standards, bibliographical details apart, patent and standard numbers are also mentioned. An entry in an abstracting periodical, apart from bibliographical details, also contains an informative or indicative abstract.

Special features – Usually bibliographies provide **indexes**. Indexes vary from bibliography to bibliography. Author index and subject index are quite common. Apart from these, substance index, place name index, patent index, etc. are also provided.

Format – See the format as discussed under sub-section 4.2.7.

Limitations – For international abstracting and indexing services, achieving exhaustivity in terms of coverage is a difficult task due to various factors. Still, *Referativnyi Zhurnal* (Moscow: VINITI, 1953-.) and *Chemical Abstracts* have been making mighty attempts to achieve exhaustivity. Most other services are selective in coverage. National indexing and abstracting periodicals definitely make attempts to be exhaustive. For various reasons, in many cases, they cannot achieve that. For example, the goal of *Indian National Bibliography* is to be exhaustive. It is failing to be so because of the non-cooperation of publishers.

There are other limitations also. Language limitation is quite common. In many bibliographies, documents only in one language are covered. For example, *Indian Books in Print* [Delhi: Indian Bureau of Bibliographies, 1969-.] covers only English books published in India. Some bibliographies may cover only one type of documents, or documents originated from only one place, or documents pertaining to a particular period only. In indexing and abstracting periodicals, the issue of time lag is an important factor. Time lag means the time that elapses between the appearance of a publication and its coverage in a bibliography. For example, if an article published in the February issue of *Indian Journal of Pure and Applied Physics* is covered in the June issue of *Indian Science Abstracts* then the time lag will be four

months. In quite a number of indexing and abstracting periodicals published from abroad, the time lag in the case of Indian publications is found to be quite high, sometimes more than one year.

Conclusion – Most indexing and abstracting periodicals, originating abroad, are very costly publications. It is very difficult for a single library to subscribe to such a costly periodical. Hence, it is advisable to see whether such publications can be subscribed through a consortium. In that case, the library gets the benefit of the periodical at a lesser cost. Many abstracting and indexing periodicals have turned into databases. For evaluating a database the checkpoints discussed above will be highly useful.

4.3.2 Dictionaries

For the evaluation of dictionaries we shall discuss past record of a dictionary, authority, scope, arrangement, word treatment, specific features, revision, format and conclusion.

Past record – Some authors have dubbed ‘past record’ as ‘history’. We have chosen ‘past record’ because we feel it is more expressive than ‘history’. Most dictionaries of the world have got a past record. Many dictionaries have started in a modest way and gradually became more voluminous. In some cases, utilising the same base sprang up different dictionaries. Quite contrary to this, *Oxford English Dictionary* abbreviated as *OED* [Oxford: Clarendon Press, 1933. 12 vols. + Suppl.] started in a big way. Originally it appeared as *New English Dictionary on Historical Principles* between 1888 and 1933 in 10 volumes. Supplements were issued thereafter to keep it updated. Using the same base came out *Shorter Oxford English Dictionary* in two volumes in 1971. Now there are a variety of Oxford dictionaries such as *The Concise Oxford Dictionary (COD)*, *Oxford Dictionary and Thesaurus*, *Oxford Advanced Learner’s Dictionary*, *The Oxford English Mini Dictionary*, etc. Now ‘Oxford Dictionary’ has become a well-known brand name in the world. Because of the brand name, any new Oxford Dictionary will attract the attention of the user.

Authority – The authoritativeness of a dictionary is judged from the history of the publisher and the band of lexicographers and editors the publisher has for the compilation of dictionaries. If the lexicographers and editors are well-known, highly qualified as well as experienced then the selection of a dictionary becomes easy.

Scope – The scope of a dictionary is judged by its coverage. A dictionary, apart from common words, includes some scientific and technical terms, terms belonging to other subjects, idioms and phrases, colloquial words, obsolete words, slang, etc. Also, some dictionaries like *Random House* also includes important personal names, place names, etc. The comprehensiveness of a dictionary is evidenced by the number of entries. An unabridged English language dictionary with more than 400,000 entries can be called fairly comprehensive. A desk dictionary with a coverage of around 200,000 words can be considered of satisfactory coverage. The 10th edition of *COD* has covered around 240,000 words leaving out place names, personal names, slang, obsolete words, etc. Every publisher of a dictionary follows some basic principles as to the selection of words and other elements like place names. This principle differs from publisher to publisher. As a result, no two dictionaries are the same.

Arrangement – In general, the arrangement of entries in dictionaries is alphabetical, either letter-by-letter or word-by-word. In *COD*, the arrangement is letter-by-letter.

Word treatment – Here, we take into account, spelling, pronunciation, syllabification, part-of-speech, inflexion, definition, quotation, synonym and antonym, subject, usage label, phrases, derivatives, etymology, gender, etc.

Spelling – In English language, American and British spellings are prevalent. Dictionaries published in UK and Commonwealth countries use British spelling, and those produced from USA use American spelling. It is to be noted that British dictionaries include words with American spellings and vice versa.

In many languages of the world a number of spellings have been simplified. Some dictionaries use only simplified spelling, others use both conservative as well as simplified spelling. Those dictionaries which include both are preferable.

Pronunciation – The pronunciation of certain words in the same language varies from region to region and from country to country. For example, the word ‘schedule’ is pronounced in UK as *shedyool*, and in US as *skejool*. The standard dictionaries indicate pronunciation with diacritical marks or phonetic alphabet.

Syllabification – For ensuring correct pronunciation a word is broken into syllables by space/s, hyphen/s or centered periods and stress is indicated by the accent mark or some other marks.

Part of speech – It is indicated by an abbreviation, for example, the alphabets a. n. and v. are used to indicate adjective, noun and verb respectively.

Inflexion – A word usually undergoes change while forming a plural, present participle, past tense or past participle. Irregular inflexions are normally indicated. For example, the plural of ‘genus’ will be indicated as ‘pl. genera’ as the inflexion is irregular.

Definition – The definition given in a dictionary should be accurate and easily understandable. Keeping in view the level of users, lexicographers try to define a word. If a dictionary is for children, the word will be defined with easy words which the children can understand.

Quotations – Quotations are used in a dictionary to make the meaning of a word clear.

Synonyms and antonyms – To express the meaning of a word, many dictionaries use one or more synonyms along with or without the definition. In some dictionaries the synonyms and antonyms are given at the end of the main entry. In *Oxford Dictionary and Thesaurus* [Oxford: O.U.P., 2001] synonyms are given at the end of the word entry. In *Random House* both synonyms and antonyms are given at the end of the word entry.

Subject – A particular word may figure in a subject with a particular meaning or in many subjects with different meanings. In a dictionary, usually the name of the subject precedes the definition.

Usage label – In the usage label it is indicated whether the word pertains to slang, colloquial or some other usage.

Phrases and idioms – Many dictionaries include phrases and idioms which occur under the headwords.

Derivatives – The derivatives of **heavy** are **heavily, heaviness and heavyish**. All these derivatives will generally occur under the headword **heavy** in a dictionary. Usually, derivatives are not defined.

Etymology – It provides ‘an account of the origin and the history of the developments in meaning of a word’ For example, the word ‘zero’ has originated from the Arabic word ‘sifr’.

Gender – In certain languages like Hindi, the gender of the word is usually mentioned in dictionaries.

Special features – These differ from dictionary to dictionary. However, two features are generally found common in dictionaries: guide to the use of the dictionary, and list of abbreviations used in the dictionary. Many dictionaries add a number of other features. For example, *The Random House Dictionary of the English Language* [College edition. Bombay: Allied, 1972] has a number of special features some are listed below:

- i) Signs and symbols (in astronomy, biology, etc.),
- ii) Directory of colleges and universities (in United States and Canada),
- iii) English given names, and
- iv) Basic manual of style.

Encyclopaedic dictionaries include quite a number of elements of reference value such as personal names with a bit of biographical element, place names with short description, biblical characters, some characters of world famous classics, illustrations, etc.

Revision – Every now and then, new words are springing up. Hence, keeping a printed dictionary updated is a difficult task. Usually new editions of dictionaries are issued after long intervals. The 1st edition of *COD* was published in 1911, and the 10th edition in 1999. On an average, ten years have elapsed before the advent of a new edition. Dictionaries are in great demand. To meet the demand a number of reprints are printed before bringing out a new edition.

Format – The points discussed under Section 4.2.7 are also applicable in the case of dictionaries.

Conclusion – It is to be remembered that all that has been discussed about a dictionary will not be available in a single dictionary. A dictionary may give definitions of words and not the synonyms. Another may include only the words (single or compound) and not the phrases and idioms. When there are options we can use the checklist and decide which one is to be taken.

4.3.3 Encyclopaedias

Encyclopaedias are generally costly publications. The number of encyclopaedias are also many. The multi-volume general encyclopaedias in English are quite a few in the market such as *The New Encyclopaedia Britannica* [15th ed. Chicago: Encyclopaedia Britannica, 1974. 30 vols.], *Encyclopedia Americana* [New York: Grolier, 1976. 30 vols.], *World Book Encyclopedia* [Chicago: World Book, 2009. 22 vols.], *Chambers's Encyclopaedia* [London: International Learning Systems, 1969. 15 vols.], *Collier's Encyclopedia* [New York: Macmillan Educational, 1976. 24 vols.], etc. The cost of all these encyclopaedias run into thousands of dollars which most libraries cannot afford to purchase all of them. In such a situation, checklist for the evaluation of encyclopaedias is of real help.

Past record – It has been already discussed under **Dictionaries**. The way it is applicable for dictionaries, the same way it is applicable for encyclopaedias. Possibly, it is more applicable in the case of encyclopaedias.

Authority – It has already been discussed in Section 4.2.1 which is very much applicable for encyclopaedias. Moreover, in standard encyclopaedias, the name and qualifications of the contributors, editors, editorial board members are given. All the articles in such encyclopaedias are signed. Going through the names of the authors of some articles, and the names and qualifications of the editors, it is possible to decide roughly to what extent the articles in the encyclopaedia will be authoritative.

Scope – Apart from noted personalities, a general encyclopaedia covers all important objects produced by nature and created by human beings. Checking the coverage of an encyclopaedia is not easy. Still, for checking the coverage of persons, you take ten Indian names such as Ashoka, Kalidasa, Akbar, C V Raman, Tulsidas, Rabindranath Tagore, Mohandas Karamchand Gandhi, Vinoba Bhave, Raja Rammohun Roy, and S Chandrasekhar. Find out whether all of them have been covered or not. The number of persons covered will give you an idea of the coverage. You can carry out the same exercise with some of the Indian states as well.

Treatment – In the treatment you are to see to what extent the information provided is thorough, authentic and complete in terms of facts and figures, whether the article is free from bias, and the user group the article has targeted. Here you can also attempt a test. Compare the biography of a person, say William Shakespeare, in two encyclopaedias. Immediately you will realise how the matter has been treated in both the sources.

Arrangement – As in dictionaries, in most encyclopaedias alphabetical arrangement is followed. It may be a letter-by-letter or word-by-word arrangement. *The Webster's New International Encyclopedia* [Richmond Hill, Ontario: Max, 1996] follows letter-by-letter arrangement, and *Compton's Concise Encyclopedia* [1996. 25 vols. CD] follows word-by-word arrangement.

Index – The index is an indispensable part of an encyclopaedia. Initially, *The New Encyclopaedia Britannica* was without an index as it was hoped that the Micropaedia will serve the purpose. In reality, it did not. Finally, in order to meet the demands of the users an index was provided.

Special features – Each encyclopaedia has some special features. For example, *The New Webster's International Encyclopedia* has a separate section of maps and an index of place names figuring in the maps, illustrative survey of world history, declaration of independence [of the United States], the Constitution of United States of America, list of the Presidents of the United States, U.S. Supreme court justices, national parks of the United States, chemical elements, electrical resistivity and temperature coefficients of elements, periodic table, and metric measurement conversions.

Format, Limitations, and Conclusion – These points have been discussed under Sections 4.2.7, 4.2.9 and 4.2.10 and are also applicable in the case of encyclopaedias.

4.3.4 Yearbooks and Almanacs

Past record – There are many yearbooks in the world which are coming out for a long time such as *Statesman's Yearbook* (London: Macmillan 1864-), *Europa Yearbook* (London: Europa, 1959-), *Whitaker's Almanack* (London: Whitaker, 1869-), and *India: A Reference Annual* (New Delhi: Publications Division, 1953-). All these yearbooks have earned a name in the world and a library without any hesitation will procure them. When a new yearbook appears in the market, then the below mentioned checking elements should be used to evaluate the book.

Scope – The scope of yearbooks varies. They may be international, regional or national in scope. Depending upon the requirements of the users, the librarian is to decide which yearbook is to be obtained for the library.

Treatment – A huge amount of matter is condensed within a yearbook or almanac. As a result, information given in most cases is brief. The amount of information on a country in a yearbook may be much smaller compared to the information given in an encyclopaedia of the size of *The New Encyclopaedia Britannica*. However, the information given in a yearbook is updated every year which cannot be done in an encyclopaedia.

Arrangement – Most yearbooks and almanacs do not follow alphabetical arrangement. The textual matter in the yearbook is divided into various chapters. For example, in *India: A Reference Annual, 2010* there are 32 chapters titled as Land and the People, National Symbols, The Polity, etc. On the other hand, in *Europa Yearbook* there is alphabetical arrangement within each part.

Special features – *India: A Reference Annual* provides information only about India. It does not have practically any special feature. On the other hand *Manorama Yearbook 2006* [41st ed. Kottayam: Malayala Manorama, 2006] not only provides information about India but also of the world. In addition, it provides information about 100 books, 100 literary characters, 100 eminent persons, a dictionary of 600 terms, 500 places of interest, and other things.

Limitations – All yearbooks will have some limitations. *Manorama Yearbook* is biased towards India. On the other hand *Statesman's Yearbook* is biased towards UK. Moreover, every year such a huge amount of information is generated which is impossible for a yearbook to cover. As a result they are selective. They include only those items which people require most.

Other checking elements like **authority, format**, etc. as described in Section 4.2. are applicable in the case of yearbooks and almanacs also.

4.3.5 Directories

Past record – Some directories are coming out for a long time. For example *Ulrich's International Periodicals Directory* [New York: Bowker, 1932-.], and *World of Learning* [London: Europa, 1947-]. Such directories have earned a name for themselves in the world. Not many directories appear every year. Usually, they appear after short or long intervals. If several editions of a directory had already come out, it gives an indication that the directory is popular. If required, it may be acquired for the library.

Authority – Directories are brought out by well-known publishers, government bodies, institutions, associations, etc. The authoritativeness of a directory can be gauged from the corporate body bringing out the directory. For example, *Universities Handbook* is brought out by Association of Indian Universities, New Delhi. One can take it for granted that the information contained in the directory will be authentic.

Scope – Most directories are generally devoted to a subject, for example, telephone directories, library directories, periodicals directories, etc. From geographical coverage point of view, they may be international, e.g. *World Guide to Libraries* [New York: Saur, 1989-], national, e.g. *Libraries in the United Kingdom and the Republic of Ireland* [London: Library Association, c2001] and local e.g. *Directory of Libraries and Who's Who in Library Profession in Delhi* [Delhi: Library Association, 1964].

Compilation – A directory is usually compiled on the basis of the replies to questionnaires mailed to the concerned persons or institutions. This method ensures a great degree of authenticity.

Treatment – It differs from directory to directory. For example, the information given on a periodical is much more in *Ulrich's International Periodicals Directory* compared to *Directory of Indian Scientific Periodicals* [4th ed. New Delhi: INSDOC, 1991]. For a periodical, the former provides around 20 items of information, and the latter around 10.

Arrangement – The arrangement of directories differ. For example, the entries in *Directory of Indian Scientific Periodicals* is arranged according to UDC class numbers. On the other hand, entries in *Ulrich's International Periodicals Directory* is arranged under subject headings which are alphabetical in order. Some directories like *Times of India Directory, Yearbook and Who's Who* [1914-1983] followed alphabetical order only in some portions, e.g. in Who's Who portion. This publication has ceased but is consulted very often for old information. Entries in a directory may be arranged in chronological or geographical order as well.

Information content of an entry – It also differs according to the type of a directory. The information content of a telephone directory is – name of the person/institution/organisation, address and the telephone number. On the other hand, an entry in an institutional directory may contain much more information such as name, address, telephone number, e-mail address, fax number, year of foundation, name of the head of the institution, staff strength, brief history of the institution, objectives, functions, achievements, publications, library and other facilities available.

Indexes – A telephone directory generally is without an index. Many directories in which the entire gamut of entries is not in alphabetical order, usually provide one or more indexes to ensure easy location of information.

Special features – Some directories have some special features. For example, *Ulrich's International Periodicals Directory* includes information on abstracting and indexing services, money symbols, and list of periodicals that had ceased publication, etc.

Limitations – Generally directories are compiled on the basis of information obtained from the concerned people, institution, organisation, etc. Sometimes, some persons, institutions or organisations do not provide the required information. As a result, either the particular entry is dropped from the directory or an old entry is given with backdated information. A large number of directories are not updated annually, allowing entries to get backdated. Because of many constraints many directories fail to become exhaustive.

Format and conclusion as described under Section 4.2 are also applicable here.

4.3.6 Geographical Sources

Introduction – Geographical sources usually comprise of geographical dictionaries, geographical encyclopaedias, gazetteers, guidebooks, atlases, maps and globes. At times, a gazetteer has been termed as a geographical dictionary. For example, *Webster's Geographical Dictionary* [Rev. ed. Springfield, Mass.: Merriam-Webster, 1984] is out and out an international gazetteer. You should know the difference between a geographical dictionary and a gazetteer. In a geographical dictionary you will find the definitions of geographical terms such as island, river, valley, and mountain. Librarians in general do not consult a gazetteer to find the definitions of geographical terms. On the other hand, you will find in a gazetteer the descriptions of specific places, rivers, valleys and mountains. It is to be noted that a great deal of geographical information is found in general encyclopaedias, encyclopaedic dictionaries like *Random House* and the World Wide Web.

Past record – Many publishing houses in the world have earned a name as publishers of gazetteers (Columbia University Press), guidebooks (Fodor's), atlases and maps (Hammond, Rand McNally, etc.), etc. They are publishing standard geographical sources for many decades or centuries. If any of them bring out a new geographical reference book, it will be considered of value. Hence, for geographical sources as well the past record of the publisher is worth examining.

Authority – *Columbia Lippincott Gazetteer of the World* has been brought out by the Geographical Research Staff of Columbia University Press in cooperation with the American Geographical Society. Needless to say, the *Gazetteer* is considered as one of the topmost gazetteers of the world. Even though it has been brought out about half a century ago, still, it is one of the most used reference books in a library. Here lies the importance of the authority which a librarian should always take care of.

Date – Throughout the world different types of geographical changes occur around the year. The birth of a new country (e.g. Bangladesh) or a new state (e.g. Jharkhand), the change in the place name (e.g. Calcutta to Kolkata), alteration of boundaries of some places (e.g. Bihar after the formation of

Jharkhand), change in the course of a river (e.g. Kosi), development of a new area (e.g. Greater Noida), etc. are but common geographical phenomena. A backdated geographical source will not be able to include the latest changes. A geographical encyclopaedia published before 2000 AD, will not show Indian states like Uttarakhand or Jharkhand as these states came into existence in 2000 AD. Hence, for geographical sources, date is an important checkpoint.

Scope – The scope of geographical dictionaries and encyclopaedias is universal. However, the scope of gazetteers, guidebooks, atlases and maps usually relate to the areas they cover. For example, the coverage of *Gazetteer of India – Indian Union* [Delhi: Publications Division, 1965-1978. 4 vols.] is restricted to India only. There are also gazetteers that cover only individual districts. For example *Bihar District Gazetteers - Purnea* [Patna: Secretariat Press, 1963] is devoted to Purnea district only. Similar is the case with guidebooks, atlases and maps. You will find guidebooks covering cities and maps covering villages. It is to be checked whether the book adheres to its stated scope.

Treatment and limitations – International gazetteers are mostly selective compared to *Columbia Lippincott Gazetteer*. Guidebooks, atlases and maps - all are selective. For example, a guidebook covering India as a whole cannot record all hotels at a tourist place. Similarly, in a map or atlas of India you can find only important places. Another important point to be taken care of is that how the publication has marked the disputed areas of the world.

Arrangement – In geographical dictionaries and international gazetteers the arrangement is usually alphabetical. In state and district gazetteers, maps and atlases, the arrangement may not be alphabetical.

Items of information – A geographical dictionary like any other dictionary, provides the definition of geographical terms. An international gazetteer may provide against the place name, the variant name/s of the place, pronunciation, population, geographic and political location, altitude, trade, industry, agriculture, mineral and other natural resources, irrigation works, river lengths, communications, history, cultural institutions and monuments, battles and other facts pertinent to the place. A national gazetteer, state gazetteer, district gazetteer, etc. may describe land and people, history and culture, economic structures and activities, administration and public welfare. A guidebook usually includes such information as when to go, how to go, how to roam about, what to see, where to stay, where to shop, etc. Atlases and maps with colourful drawings show continents, countries, regions, provinces, counties, cities, towns, islands, lakes, mountains, deserts, seas, rivers, canals, dams, capes, etc. Checking the items of information you can find out the strengths or weaknesses of the source.

Special features – In all geographical sources, black and white and colourful maps are usually provided. The more the number of maps, the more useful will be the source. This should be borne in mind while selecting a source.

Format – Maps, atlases and globes are usually produced in colour. Maps in many cases are of big size and meant for hanging on the wall. A map of Delhi brought out by T. T. Maps and Publications Ltd. in 1991 measures 27 inches x 40 inches. Usually these maps are stored in the form of rolls. Oversize maps provided with books are usually folded. Atlases, almost in all cases, are oversized. Special shelves are needed to store them. A globe is a miniaturised

form of the earth. Hence, it is always spherical in shape. In some globes and maps you may find even relief features showing mountains, hills, etc.

Conclusion – Geographical sources are of varied types. Even for small libraries, geographical sources like maps, atlases and globes are necessary. It has been observed that in the past many schools were without libraries but they were having a few maps and a globe. This underlines the importance of geographical sources. Whichever library you may work at, some geographical sources will be necessary. Using the checkpoints discussed above, if right sources are selected, they will be highly useful for the users of the library.

4.3.7 Biographical Sources

Introduction – Biographical sources are also of various types, of which, biographical dictionaries are most important. These dictionaries are published as who's who, who was who, biographical dictionary, etc. The scope of these dictionaries may be national or international, they may be devoted to particular subjects, particular gender (e.g. women), particular class of persons e.g. presidents, kings and queens, prime ministers, parliamentarians or they may be current or retrospective or both current as well as retrospective. In addition, there are individual biographies written by the person herself/himself or by a biographer.

In the case of selection of biographical sources, the problem of choice arises only when there is more than one source. In many cases there is just a single source. In such a situation, there is no alternative. The library has to procure the source if there is a real need. At present, there is no current who's who of librarians in India. If such a biographical source is brought out many librarians would like to go for it, since something is better than nothing.

Past record – Some publishers in the world such as Wilson, Europa, Adam and Charles Black, Charles Scribner's, G&C Merriam and Marquis have excelled in bringing out biographical sources. They are bringing out biographical sources since long, some of them at regular intervals. If such a publisher brings out a new biographical source, it is expected that the source will be of good quality.

Authority – *Dictionary of National Biography (DNB)* has been brought out by Institute of Historical Studies, Kolkata in four volumes under the editorship of S P Sen during 1972-1974. As *DNB* has been brought out by an institute of national repute, the facts given in the biographies are considered authentic. The reputation of the sponsor, publisher, biographer, etc. needs to be taken great care of while selecting a biographical source.

Scope – The scope of a biographical source varies as has been briefly described above in the Introduction.

Method of selection – Biographical dictionaries, in general, are selective. The criterion of selection is an important point. Suppose a who's who of librarians in India is being compiled. The question will arise who should be included in the biography. Suppose in a library, there is the librarian, deputy librarian, assistant librarian, cataloguer, classifier, reference librarian, and others. The compiler of the who's who will have to take a decision of all these persons who should be covered in the publication. S/he may decide to include only the librarian, or all those who are in the officer's grade. S/he may not like to cover anybody below the officer's grade considering economic viability of the

publication. A criterion of selection is an important checking element for a biographical source.

Method of compilation – Current who's who is compiled on the basis of filled in questionnaires received from the biographees. This authenticates the information given in the source as the information is given by the biographee herself/himself. This method also has some drawbacks since many biographees do not return the questionnaire resulting in serious gaps in the source. To reduce this, attempts are made to compile a biographical sketch gleaned data from secondary sources.

Compilation of who was who or retrospective biography is pretty difficult. For such a biography competent professionals/biographers are assigned the job of writing biographies. They write biographies gleaned data from secondary sources, including persons related to the biographee. Method of compilation is also an important criterion for selecting a biographical source.

Treatment – The size of the biographical details of a person varies from a single line to a few pages. In biographical dictionaries, the size of all biographical sketches is uniform. Take for example, *Chambers Biographical Dictionary* [Centenary ed. Edinburgh: Chambers, 1997]. In this source almost all biographical sketches are of the size of a medium size paragraph. On the other hand, the *Dictionary of Scientific Biography* [New York: Charles Scribners, 1970-1976. 14 vols.] contains biographical essays which runs from a single page to several pages. The point to be checked is whether a biographical sketch or essay has been written with adequate weightage as the biographee deserves.

Arrangement – In many biographical dictionaries, entries are arranged alphabetically according to biographees. There are other biographical sources which are arranged according to subject e.g. *India Who's Who* [New Delhi: INFA, 1969-], or by dates (date of birth or death). It is to be checked whether the arrangement is in order and more helpful than A-Z arrangement.

Items of information – Usually the following items of information are found in a sketch type entry figuring in a biographical dictionary: name, pronunciation of the name, highest qualification, present position, date of birth, parent's name, education, services, publications, recreation or hobbies, address, telephone number, e-mail address, etc. In an essay type entry usually more information is found. A few entries may be checked to see if information has been provided on all the items uniformly in all the entries.

Indexes – Biographical sources that are arranged alphabetically do not usually provide any index. If it is arranged otherwise, usually biographee index is provided. At times, geographical index and/or, chronological index are also provided.

Special features – Some biographical dictionaries provide a photograph or a portrait or a sketch of the biographee along with her/his biographical details. Apart from this, some biographical sources provide list of abbreviations, who's who of the royal family of the country wherefrom the publication originates, necrology, etc. All these add value to the biographical source.

Format – Format as discussed under Section 4.2.7 is also applicable here

Limitations – All biographical sources have some limitations. The coverage of none of these sources can be considered to be comprehensive. One has to select biographees on the basis of some criteria, whereby, many others are left out. There is also bias in selection. An international who's who produced from UK will obviously try to cover more celebrities from UK. There is no single source wherefrom biographical details of all the celebrities of the world can be obtained. To a certain extent the World Wide Web is fulfilling this need.

Updation – There are some biographical sources which are appearing annually, they are being updated regularly. Other biographical sources are updated after long intervals. As a result, information contained in them is often outdated.

Conclusion – It has already been said that no biographical source is comprehensive enough. Hence, by purchasing a single biographical source all the users' need might not be fulfilled. That is why big libraries procure a large number of biographical sources. For locating a biography, if one source fails, others may be of help. If there is considerable demand for biographical information in a library, it is advisable to go for more than one source.

Self Check Exercise

- Note:** i) Write your answers in the space given below.
ii) Check your answers with the answers given at the end of this Unit.
3) Describes the items of information usually found in an entry of an indexing periodical.

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- 4) Describe the method of compilation of a current and a retrospective biography.

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4.4 OTHER SOURCES

Under this heading, textbooks, handbooks and manual, trade catalogues, statistical information sources, sources for current affairs, primary periodicals, and reviewing periodicals are being discussed. In this group there are primary as well as secondary sources including reference books. They are being treated separately for the fact that BLIS textbooks and course materials are, by and large, silent about their evaluation. The checklist of evaluation, as described under Section 4.2 of this Unit, in many cases will be applicable for these sources as well.

4.4.1 Textbooks

Textbooks are the backbone of school, college, university and other educational institution libraries. Numerous authors write textbooks and known, little-known and well-known publishers publish them. As such, they are of varying quality.

The first thing that should be checked in a textbook is whether the textbook covers the prescribed syllabus adequately. This apart authors, publishers, the edition, and error-freeness are to be given greater importance. About 50 years ago, many of us studied J C Nesfield's English Grammar, S. L. Loni's Trigonometry, Hall and Stevens Geometry, K.P.Basu's Algebra, Shanti Narayan's Calculus, etc. Even today, these books are used by school and college students. Gray's *Anatomy* is a bible for MBBS students. Who can forget Krishan Kumar's textbooks that we all studied while doing BLIS or MLIS.

Students know textbooks by the name of the authors. Hence, for procuring a textbook for a library, the first checking element is the author. If the author is famous, the textbook may be procured without any problem. The corporate body is no less important. You all know that National Council of Educational Research and Training (NCERT) brings out a large number of textbooks every year. It has earned a name as a publisher of good textbooks for school education. Any book by NCERT and other similar bodies may be selected for purchase without much scrutiny. If several editions of a textbook have already been published, the textbook is worth procuring.

The problem arises in selecting the first edition of a textbook by a new author and a new publisher. It may contain lot of grammatical and factual errors. A glance through the first few pages may reveal the quality of the book. If you fail to judge the purchase-worthiness of a book, take the help of a good teacher. The judgment of a teacher will be valuable for making a decision. A glance through the reviews may also help.

4.4.2 Handbooks and Manuals

The checklist enumerated under Section 4.2 will be highly useful for evaluating these types of books.

4.4.3 Trade Catalogues

Trade catalogues are distributed free of charge. They contain a lot of information not available elsewhere. Their evaluation is generally not necessary as you are not purchasing them. If you find some information missing in the catalogue, you may suggest to the producer to include them.

4.4.4 Statistical Information Sources

Statistical information sources are generally brought out by international bodies like United Nations, UNESCO, and FAO, government bodies and departments like Central Statistical Office, Great Britain, Central Statistical Organisation, India, Office of the Census Commissioner, India, State Statistical Bureaus of Indian states, etc. The information they provide is authentic and the authority is unquestioned. Hence, procurement of a statistical publication, if required by the library, does not pose any problem. Data contained in the statistical publications generally cannot be updated every now and then. Hence, they may be backdated by a year or at times a decade. You know that our population census is taken once in ten years. It was taken in 2011. Next it will be taken in 2021. Hence till 2021, books will provide our population data based on 2011 census only.

4.4.5 Sources of Information on Current Affairs

Newspapers are the primary sources of information on current affairs. Based on newspapers, various types of secondary sources are being published in the world which has considerable reference value. Some of the types of sources are as follows:

- i) Indexing service based on individual newspapers. Example: *The New York Times Index*. New York: New York Times, 1851-.
- ii) Indexing service based on many newspapers. Example: *Canadian Index*. Toronto: Micromedia, 1993- .
- iii) News digests. Example: *Keesing's Record of World Events*. London: Longman, 1987-.

All such sources can be evaluated using the checking elements given under Section 4.2.

4.4.6 Primary Periodicals

Checking elements discussed under Section 4.2 can be applied in this case also for the purpose of evaluation. However, they can be evaluated much better using bibliometric indicators like impact factor, immediacy index, etc. You will learn about these indicators while doing MLIS.

4.4.7 Reviewing Periodicals

There are two types of reviewing periodicals. Let us call them Type I and Type II. Type I publishes book reviews. These periodicals can be evaluated using checklist given under Section 4.2. Type II publishes trend reports, state-of-the-art reports, progress reports, critical reviews, etc.

To a certain extent these periodicals can also be evaluated using the checklist described under Section 4.2. However, using bibliometric methods they can be evaluated much better. Sometimes expert opinion may be necessary before finally selecting such a periodical for a library.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answer given at the end of this Unit.

5) How will you evaluate a textbook?

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4.5 SUMMARY

In this Unit, we have dealt mainly with the evaluation of documentary reference sources. For evaluation, authorities have decided certain points which are to be checked while evaluating a book. The points that are generally applicable for all types of reference books, are, past record of the publisher, authority, scope, treatment, arrangement, special features, format, book reviews, limitations and conclusion. The writers of reference books have not considered book reviews as one of the elements of evaluation. This has been included here as book reviews at times help a lot in the evaluation of a book. All these have been discussed generally in the beginning in one section and then under each type of reference sources. Certain points like method of selection, method of compilation, items of information, etc. have been described at relevant places. The types of reference sources covered are: bibliographies including indexing and abstracting periodicals, dictionaries, encyclopaedias, yearbooks and almanacs, directories, geographical sources and biographical sources. In addition, handbooks and manuals, trade catalogues, statistical information sources, sources for current affairs have also been touched upon. Evaluation is usually discussed in books on reference service, where evaluation of reference books are only discussed. It has been thought that librarians of academic libraries are to purchase a large number of textbooks every year. Keeping this in view, evaluation of textbooks has been briefly discussed. Using bibliometric methods, primary periodicals and reviewing periodicals are evaluated. Bibliometric methods are beyond the scope of BLIS curriculum, hence only a brief mention about bibliometric evaluation has been made.

4.6 ANSWERS TO SELF CHECK EXERCISES

1) The authoritativeness of a reference book is usually judged on the basis of the qualifications, reputation, and experience of the author, compiler, and the editor responsible for the book, and the reputation, experience, and the past record of the publisher/corporate body. For example Encyclopaedia Britannica, Inc. is publishing *The Encyclopaedia Britannica* since 1768. The publisher is in existence for about 250 years. During this period it has brought out 15 official editions of the

Britannica and various versions of *Britannica* such as *Children's Britannica* and *Encyclopaedia Britannica India*. The 15th edition of the *Britannica*, brought out under the title *The New Encyclopaedia Britannica* in 1974 was in 30 volumes. All encyclopaedias brought out by this publisher are considered to be top grade encyclopaedias. Whenever a new encyclopaedia or any other reference book is brought out by this publisher, the librarians all over the world will naturally consider it a standard publication and would like to go for it.

- 2) In a letter-by-letter arrangement, a term composed of two or more words is considered as one word as if there is no gap in between. On the other hand, in a word-by-word arrangement each word of the term is considered separately. The following example clarifies the difference.

Letter-by-letter arrangement

airbase
airborne
air brake
air conditioning
aircraft
aircrew
air cushion

Word-by-word arrangement

air brake
air conditioning
air cushion
airbase
airborne
aircraft
aircrew

- 3) **Items of information** – An entry in an indexing periodical differs from document to document. For a journal article, an entry usually comprises of author/s, title of the article and other bibliographical details like year, volume number, issue number, page number(s), etc. In English language indexing periodicals, the language of the article is also mentioned if it is other than English. In case of a book, apart from author/s and collaborator/s, the title, edition, imprint, collation, etc. are mentioned. For patents and standards, bibliographical details apart, patent and standard numbers are also mentioned.

- 4) **Method of compilation** – A current biography (who is who) is compiled on the basis of filled in questionnaires received from the biographees. This authenticates the information given in the source as the information is given by the biographee herself/himself. This method has some drawbacks also since many biographees do not return the questionnaire resulting in serious gaps in the source. To reduce this, attempts are made to compile a biographical sketch gleaning data from secondary sources.

Compilation of retrospective biography (who was who) biography is difficult. For such a biography competent professionals/ biographers are assigned the job of writing biographies. They write biographies gleaning data from secondary sources including persons related to the biographee.

- 5) The first thing that should be checked in a textbook is whether the textbook covers the prescribed syllabus adequately. Apart from this, authors, publishers, the edition, and error-freeness are to be given greater emphasis because students know the textbooks by their authors. If a textbook is brought out by a renowned publisher, or a corporate body like NCERT, it is likely to be a good textbook. The number of editions

of a particular textbook that has been brought out in a particular span of time is also to be checked. It is a good indicator of the popularity of the textbook. It is better to take the help of a teacher to check the error-freeness of a textbook.

4.7 KEYWORDS

Biographee	:	One about whom a biography is written, the subject of a biography.
Collation	:	It comprises of pagination, illustration, size and series.
Diacritical Mark	:	It is a sign placed above or below a letter to indicate a different pronunciation of the letter. For example, ā is pronounced as आ . The bar above a is the diacritical mark.
Encyclopaedic Dictionary	:	A dictionary having some features of an encyclopaedia.
Frontispiece	:	An illustration that faces the title page of a book.
Headword	:	A word with which a separate entry is made in a reference work. For example, the phrase by heart will be found under the headword heart in a dictionary. Headwords in dictionaries are normally printed in bold letters.
Imprint	:	It includes place of publication, publisher and year of publication.
Inter-line Space	:	Space between two consecutive lines.
Inter-word Space	:	Space between two consecutive words.
Necrology	:	A list of persons who died during a particular period.

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Block

1

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Programme Design Committee

Prof. Uma Kanjilal (Chairperson)
Faculty of LIS, SOSS, IGNOU

Prof. B.K.Sen, Retired Scientist
NISCAIR, New Delhi

Prof. K.S. Raghavan, DRTC
Indian Statistical Institute, Bangalore

Prof. Krishan Kumar, Retired Professor
Dept. of LIS, University of Delhi, Delhi

Professor M.M. Kashyap, Retired Professor
Dept. of LIS, University of Delhi, Delhi

Professor R. Satyanarayana
Retired Professor, Faculty of LIS, SOSS, IGNOU

Dr. R. Sevukan
(Former Faculty Member) Faculty of LIS,
SOSS, IGNOU

Prof. S.B. Ghosh, Retired Professor
Faculty of LIS, SOSS, IGNOU

Prof. T. Viswanathan
Retired Director NISCAIR, New Delhi

Dr. Zuchamo Yanthan
Faculty of LIS, SOSS, IGNOU

Conveners:

Dr. Jaideep Sharma
Faculty of LIS, SOSS, IGNOU

Prof. Neena Talwar Kanungo
Faculty of LIS, SOSS, IGNOU

Programme Coordinators

Prof. Jaideep Sharma and Prof. Neena Talwar Kanungo

Course Coordinator

Prof. Neena Talwar Kanungo

Course Preparation Team

Unit No(s)
1-4

Unit Writer(s)
Professor B.K. Sen

Course Editor
Prof. Neena Talwar Kanungo

Print Production

Mr. Manjit Singh
Section Officer (Pub.), SOSS
IGNOU, New Delhi

Secretarial Assistance
Ms. Sunita Soni
SOSS, IGNOU

Cover Design
Ms. Ruchi Sethi
Web Designer
E-Gyankosh, IGNOU

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BLOCK 1 DOCUMENTARY SOURCES

Introduction

With the advent of printing from movable types in 1450s, the production of publications increased enormously giving rise to different types of publications such as books, pamphlets and periodicals. The hand-written documents like manuscripts, notes, and diaries continued to co-exist along with printed documents. All these formed the documentary sources of information. Non-documentary sources of information like the government and non-government offices, institutions and human beings continued as close allies of documentary sources. Documentary and non-documentary sources forms the entire gamut of information sources. In this Block we shall deal only with the documentary sources of information, non-documentary sources of information will be dealt with separately. Information sources may also be divided as published and unpublished sources. Published and unpublished sources can be further divided as primary, secondary and tertiary sources.

In **Unit 1** of this Block, first of all, published and unpublished sources are enumerated and then how different authors have tried to categorise the documents is discussed along with the criteria they have followed for categorisation. The characteristics of categorisation by each author are commented upon. Categorisation by different authors has given rise to certain discrepancies which have been discussed item by item, causes of the discrepancies are elaborated, and proper placement of the specific item is also suggested.

In **Unit 2**, primary sources comprising of research periodicals, technical reports, conference proceedings, patents, standards, theses, project reports, official publications, trade literature, laboratory notebooks, diaries, internal research reports, correspondence, personal files, etc. are defined, explained and discussed with examples. Some of the publications have been divided according to their types, and each type is discussed with definitions and explanations.

In **Unit 3**, secondary and tertiary sources are dealt with. Secondary sources comprise of bibliographies, secondary periodicals (abstracting, indexing, reviewing, and popular periodicals), and reference books such as encyclopaedias, dictionaries, handbooks, manuals, yearbooks, directories, formularies, and textbooks. All these are discussed with adequate examples. Tertiary sources include bibliography of bibliographies, directory of directories, library catalogues, and guides to information sources. All these have been discussed in some detail with examples whereby you get a fair idea about these sources.

Unit 4 deals with the criteria of evaluation for all these sources. It should be remembered that evaluation criteria vary from category to category. The criteria we use for evaluating a dictionary will not be same for a primary periodical.

Information Source and Information Resource

In the very beginning it is better to be clear about the concepts 'information source' and 'information resource'. The two terms 'source' and 'resource' have started creating confusion ever since the term 'information resource' has appeared on the scene. Prior to the emergence of this term, there was no

confusion about the term 'information source' as this term used to connote a document or non-document e.g. an institution that provided information. As such, an encyclopaedia, a specialist, etc. were the 'source' of information. Mostly librarians and information scientists deal with information sources. The term 'information resource' pertains to information and communication technologies, especially to information management. Sometimes, information management is referred to as 'information resources management'. Schneyman included five types of information resources for the purpose of information management. The resources are: systems support including computers and telecommunications, processing data, images, etc., conversion and transformation including reprographics, distribution and communication including network management and telecommunications, and finally retention, storage and retrieval which covers libraries, record centres, filing systems and internal and external databases (Feather and Sturges).

UNIT 5 HUMANS AS SOURCES OF INFORMATION

Structure

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- 5.9 Answers to Self Check Exercises
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5.0 OBJECTIVES

After going through this Unit, you will be able to:

- differentiate between human source and human resource;
- describe the core information professionals, who are engaged in generation, gathering, processing, dissemination, and many other activities related to information;

- identify peripheral information professionals as group separate from the core information professionals; and
- explain the role of human sources in writing a biography of a celebrity, or a report on an event.

5.1 INTRODUCTION

Every sensible human being is a source of information. S/he may be a child of five or nonagenarian of ninety-five, a charming lady or an incorrigible bore, a famous cricketer or an infamous footballer, a dare devil adventurer or a cautious wayfarer, a blind musician or a deaf mathematician, a high profile professor or an illiterate person, and all others irrespective of caste, creed, religion, race, gender, etc. There are professionals like information generators, information gatherers, information processors, information recorders, information disseminators, information retrievers, and information technologists who earn their livelihood basing information or information related activities and products. There are others who do not pertain to information profession but acts as sources of information. In this Unit you will be able to see how information professionals as well as information non-professionals are acting as important sources of information.

5.2 HUMAN SOURCE VS. HUMAN RESOURCE

In the field of library and information science we have different types of sources of information such as documentary source, non-documentary source, printed source, non-printed source. All these sources harbour information, and information can be obtained from them whenever necessary. Similarly all sensible human beings also possess information, and usually deliver the same when needed. Thus they become ‘human source’ of information. As you can see human source is a term belonging to library and information science.

You must have heard about human resource development, we have even a Ministry of Human Resource Development. The term ‘human resources’ has been defined as (i) “the people that staff and operate an organization” (Tracey); and (ii) “the personnel employed in an organization” (<http://en.wiktionary.org>). The term belongs to the field of management as well as economics. According to the definition, all the staff engaged in a library is human resource. In this Unit we are considering not only library staff but also non-library staff who by virtue of their experience, qualification, expertise, and knowledge have become source of information.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

1) Differentiate between the concepts ‘human source’ and ‘human resource’.

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5.3 CORE INFORMATION PROFESSIONALS

By core information professionals we mean those professionals whose principal functions are to generate, gather, process, record, disseminate, retrieve information, and provide various types of information services. All these professionals are being described below as:

5.3.1 Information Generators

Researchers, inventors, innovators, discoverers, thinkers, authors, planners, policy makers, decision makers, judges are some examples of generators of information. All these people know in and out of the information they have generated and thus they become good sources of information. Let us see how they generate information.

A **researcher** surveys, observes, thinks, hypothesises, designs and conducts experiments, records the results, and finally draws conclusions. Sometimes s/he surveys, tabulates the data, analyses the tabulated data. All these give rise to new information.

After a great deal of hard work, sometimes lasting for a number of years, an **inventor** develops a new machine, equipment, tool or the like. S/he discloses her/his invention through a patent, which contains details of the invention. The inventor continuously strives to enhance the productivity and efficiency of the machine. The success in her/his attempts, needless to say, gives rise to new information.

An **astronomer** while scanning the night sky with her/his telescope may encounter a comet not seen before. The moment s/he informs the media about her/his finding, information generates and the world comes to know about it. A **doctor** while investigating a new epidemic may chance upon a new virus. Doubtless it will generate new information.

The thinking of **philosophers** over the ages has given birth to a large number of philosophical systems all over the world. Philosophers developed their views after a great deal of thinking and made that known to people helping in the generation of new information.

The output of an **author's** mind can be seen in a variety of forms like books, articles, paintings, drawings, sculptures, etc. In many cases an author gleans information from various sources, weaves them together, adds something from her/his own thinking, experimentation or experience and brings out a book or an article. The new information content of the book may vary widely. For example, Ranganathan's *Prolegomena to Library Classification* harboured a huge amount of new information when it appeared for the first time.

A reputed **industrialist** planning a new enterprise or a new product, a multinational giant planning to start a joint venture in a developing country, an internationally renowned athlete planning to build a modern stadium, etc. all these generate information the moment a particular plan is disclosed. Quite often these type of information figure in mass media – locally, nationally and even internationally.

The decisions made by the **head of a state**, prime minister, or others in top positions almost always generate information of national and international significance, the moment the decision is made known. The decisions of the top executives of reputed industrial houses, business concerns, institutions and organisations also generate information of significance.

5.3.2 Information Gatherers

Reporters, correspondents, detectives, spies, police, compilers, enumerators, etc. are information gatherers by profession. All these people receive training for the job they do. Of course, there are many others in the society who gather information for various purposes. For example, a student gathers information to enrich her/his knowledge, a lawyer gathers information from her/his client to defend her/his case, a doctor gathers information from her/his patient to diagnose the disease, etc. However, we shall discuss under this category only those personnel whose profession is to gather information.

You know that information is generated through human activities. Whatever may be the case, a **reporter** is to collect information depending on its importance and reports it to the press along with photographs and other associated materials if that is possible. One moral responsibility that lies with the reporter is that the information s/he passes on to the press for wider dissemination should be authentic to the best of her/his knowledge. To establish the authenticity of the report, s/he has to check and crosscheck the information from various vital sources. Suppose, due to police firing some persons have been injured. When the reporter reaches the spot, s/he is likely to get different figures from different persons as to the number of persons injured and different views as to the cause of firing. To establish the actual number of persons injured, s/he may have to go to the nearby doctors and hospital(s) where the persons have received first aid or have been admitted for treatment. S/he may also visit the concerned police station to ascertain the number of persons injured and the cause of firing. S/he may also interview the injured people themselves, the people present at the scene, local political leaders, and other reliable sources to build up her/his entire report. Hence, for the information of a particular incident, a reporter proves to be a very good source of information.

‘A **correspondent** is a person employed by a news agency, periodical, or the like, to gather, report or contribute news, articles, etc. regularly from a distant place’ (Urdang: 302). Broadcasting agencies like BBC and CNN also appoint correspondents. From the definition, it is clear that a correspondent is also a reporter who reports from a distant place, usually a foreign country.

One of the important areas of journalism is investigative journalism. Here the **investigative journalist** engages herself/himself in unearthing such information as smacks of malpractices and corruption in the government machinery or elsewhere. Obviously, to unearth the information, the journalist acts very cautiously and gleans information very secretly bit by bit to build up the whole story. The disclosure of the information many a time has got a far-reaching effect. The downfall of President Nixon was the outcome of investigative journalism.

Crime detection is considered as one of the most important activities of **police**. In bigger police establishments, there are specialised police personnel to investigate crimes.

For crime detection, the police have to gather information from a number of sources by using various means. If one of the accomplices is nabbed, then the police tries to extract information about others from her/him employing various methods including interrogation. Apart from criminals, they question many people in search of clues. In addition, blood stains, pieces of cloth, strands of hair, cigarette ends, footprints, finger prints, etc. act as valuable sources of information as they form evidence. Those who analyse the aforesaid items are called **forensic scientists**.

The registers maintained by the police contain valuable information on crimes. These registers are still found to be useful for ferreting out valuable information about our freedom fighters.

As it has been pointed out earlier, a **detective** is usually a member of the police force. Sometimes, they may belong to private detective agencies as well. Their job, however, remains more or less the same. A **spy** on the other hand is 'a person employed by a government to obtain secret information or intelligence about another country' (Urdang: 1274). Spies employ various means and methods including various gadgets such as eavesdropping devices [a device used for secretly listening to conversation] to obtain required information. Thus, a police officer, a spy, a detective, possesses a great deal of information about criminals of the area they serve.

5.3.3 Compilers

Bibliographers, lexicographers, encyclopaedists and reviewers stand prominently among the set of **compilers**. Compilers are also gatherers of information. Take for example, a bibliographer gathers the bibliographical details of documents of her/his interest from numerous sources. Once the details are collected, s/he prepares a standard entry for each of the items. The entries are then organised in a helpful sequence which may be alphabetically author-wise, subject-wise, or year-wise. Thus a bibliographer becomes knowledgeable about the subject pertaining to the bibliography, and the sources from where data can be gathered.

A **lexicographer** first gathers words, phrases, idioms, proverbs, etc. of a language from written as well as spoken sources and then records the meaning and other details of each and every item. In many cases, s/he has to consult experts to fix the meaning of a particular word or phrase. In some cases s/he is to use her/his own judgment to decide the meaning of a word. Apart from this, s/he has to do many jobs such as the derivation and definition of a word to give final shape to a dictionary. Thus, a lexicographer becomes an excellent source of information on dictionary compilation and master of words.

The job of an **encyclopaedist** is far more laborious and time consuming than that of a lexicographer since an encyclopaedia includes thousands of articles of lengths varying from a few lines to scores of pages. For writing each article, the encyclopaedist gathers information from numerous sources, goes through each and every item thoroughly, and then writes down the article for the encyclopaedia covering each and every aspect. Till the middle of twentieth century, in some cases a single person brought out a multi-volume encyclopaedia spending her/his whole life. For example, Nagendra Nath Basu brought out his magnum opus called *Vishwa Kosh* in Bengali as well as in Hindi, both in twenty volumes!

Nowadays multi-volume encyclopaedias are usually brought out by renowned publishers where hundreds of authors contribute articles. Encyclopaedists by virtue of their knowledge gained during their work turn into a mine of information.

In this context by the word '**reviewer**' we mean a professional who authors state-of-the-art reviews, critical reviews, etc. These reviews are totally different from book reviews and depict the overall development of a narrow subject during a particular period, say, one or two years. For this purpose s/he undertakes a thorough search of relevant literature and compiles a comprehensive bibliography. Thereafter, s/he procures the full-text and in some cases abstracts of the documents. Having gone through the documents and getting a clear-cut understanding of the topic s/he jots down the review. This job updates her/his knowledge and makes her/him an up-to-date source of information on the field.

For bringing out reference sources like yearbooks, directories, books of general knowledge, biographies, gazetteers, etc. the information is gathered by the **compilers** from diverse sources using various methods. For the compilation of some reference sources like *Directory of Scientific Research Institutions in India*, and *Who's Who* the information is gathered by mailing questionnaires. For other sources, information is usually gathered from primary and secondary sources. The compilers of these categories of publications also become experts in the respective areas.

During census, conducted once in ten years in India, you must have noticed that a person visits your house and fills up a questionnaire asking the head or any other responsible person of the family a number of questions about the family members, their age, qualifications, occupations, etc. These people are called **enumerators**. The information gathered by these people is then processed using powerful computers to generate census reports from various angles. The enumerator becomes a good source of information about the area s/he has covered.

5.3.4 Information Processors

Under this category we shall discuss editors and their varieties, and also the information technologists especially software specialists who write programs for data processing.

When books, articles, reports, etc. are received for publication, in many cases plenty of inconsistencies, inaccuracies, redundancies, incompleteness, etc. are observed. To give final shape to the writing, editorial process becomes essential.

The editor while going through the writing, corrects spelling mistakes, capitalisation errors, wrong use of articles, incorrect use of words and punctuation marks, errors in syntax and paraphrasing, removes superfluous sentences, verbose, repetitions and inconsistencies, and fills up omissions. In many cases, the writing is sent back to the author with the corrections and remarks to elicit the author's consent. At this stage the author generally conveys her/his consent with minor alterations and additions. The writing thus attains its final shape and is sent for composition.

In big publishing houses, there are different types of editors such as **technical editors**, **style editors**, **language editors**, and the **general editors**. A technical editor is one who edits technical information. Many publishing houses have got

their own style of printing. For example, you will find in *Reader's Digest* that the first letter of an article is always printed with a big font. The numbers occurring in a sentence are spelt out if it is from one to ten, and written with figures if they are beyond ten. Just see the sentence "...when cancer patients who lacked family support wrote about their illness for 20 minutes a day, they reported less stress for up to six months" (*Reader's Digest*:161). You may note that in the sentence twenty has been written as 20, and the other number as six. This is because 20 is greater than ten, hence it is written in figures, six is less than ten, hence it is written in words. This is the house style of *Reader's Digest*. The style editor has to ensure that the publication conforms to the style of the house. Language editors are responsible to ensure correctness of the writing from linguistic point of view. Sometime back *European Journal of Vascular and Endovascular Surgery* needed an English language editor for ensuring the grammatical quality of articles accepted for publication in the printed journal (Internet). A general editor looks after almost every aspect of editing. These editors are knowledgeable in the art of editing. Moreover, they know the subjects thoroughly well they are dealing with. For example, the editor of a newspaper is an expert on current affairs.

A **programmer** is a computer professional who writes programs for computers. The data inputted in a computer is processed by the computer following the program that has been loaded into the computer for the purpose. Suppose, a library intends to retrieve books by the title, author(s), collaborator(s), subject, series, place of publication and publisher from the computerised catalogue. Here, the programmer will have to write programs in such a way whereby the computer will be able to process the information to provide the required answer. A programmer is an expert in programming. However, s/he gathers a good bit of knowledge about the activity for which s/he has written the program.

The expertise, which various types of editors and programmers possess, makes them important sources of information in the areas of their specialisation.

5.3.5 Information Recorders

The author and the reporter in most cases are found to be the first recorder of information. Inscribers, engravers, scribes, calligraphers, printers, data entry operators, typists, stenographers, composers, proofreaders, videographers, photographers, painters, sculptors, etc. are other professionals that belong to this category.

Recording of information through writing has been going on for thousands of years. The early man recorded information not with a set of letters as we do today, but with symbols and pictures. The famous cave pictures at Altamira in Spain and Lascaux in France daubed at least 20,000 years ago seem to convey some definite message such as "Send us more animals like these" [Odhams.41]. The oldest known writing found on clay tablets in Mesopotamia dates to 3,000 BC or earlier. They were the writings of Sumerians [Odhams 44]. Large number of seals found in Indus Valley also contains writings that date back to 2,000 BC or earlier.

In this category of professionals, all are sources of information relating to their activity and environment. However, some category of professionals, like printers, at times prove to be good sources of information. By virtue of their job they come in contact with many authors whereby they get acquainted with various

aspects of their personality, publications, lifestyles, etc. Thus, for biographers, printers become good sources of information. Take for example, wild life photographers. The area they cover for wild life photography is well known to them. They know the geography of the area as well as the various animals, plants, people, etc. found in the area.

All the recorders listed here may not be a good sources of information. An English typist or data entry operator can type a book say in Spanish language, because the script of both the languages is the same. But s/he won't know anything about the content of the Spanish book. Similarly a typist can easily type a book on nuclear physics without gaining practically any knowledge of the subject.

5.3.6 Information Disseminators

You can see a great variety of professionals in this category, and most of them are important sources of information. The professionals belonging to this category are: library professionals, documentalists, information officers, extension workers, publishers, representatives of firms, receptionists, consultants, marketing officers, broadcasting professionals, press professionals, advertisers, teachers, doctors, lawyers, and hawkers. In addition, all persons engaged in telecommunication activities are also indirectly related to information dissemination. All these people are knowledgeable about the activities they are involved in. Say, for example, a good reference librarian, knows thoroughly the collection of a library and the information contained in the books. As a result s/he can handle any query for information with ease.

Among the library professionals, a librarian, a reference librarian, compilers of accessions lists or documentation lists, etc. are the disseminators of information.

Librarians disseminate information in various ways. All librarians compile a catalogue of books and other documents available in the library. Using the catalogue s/he tells inquirers what books by an author are available in the library, books available on a particular subject or pertaining to a series, whether a book with a particular title is available in the library, etc. Many librarians bring out accession list of the library concerned from time to time. This list informs users about the books added to the library during a particular time. A reference librarian answers many queries of the users using the library collection. Often s/he also informs where a particular book or periodical may be available which is not there in her/his library collection.

A **documentalist** involves herself/himself in a number of activities like acquisition, recording, processing of documents and dissemination of information by way of supplying photocopies, computerised outputs, translations, bibliographies, and providing current awareness and selective dissemination of information services. At times, they also provide reference service as well. All these activities make her/him a good source of information.

Information officers, etc. In certain institutions, documentalists are designated as information officers, information scientists, etc. and they perform the same job as documentalists. However, in most cases, information officers are encountered in information centres/bureaus, enquiry offices, etc. of government ministries and departments. Many of our state governments like Maharashtra and Andhra Pradesh have their respective information centres in Delhi. Sometimes these units are called Public Relations Office or Reception and the officer

shouldering the responsibility of the office is called Public Relations Officer (PRO) or Receptionist. In various districts of our country, we have district information centres. Whatever may be the designation, the basic fact is that they are important sources of information and answer various queries posed by the public or any other person. Let us take a few examples.

A person sitting at the railway enquiry counter is a potential source of information as to the arrival and departure of various trains, fare between stations, and availability of seats/berths on a particular day at a particular train, etc. In big railway stations, the information about the arrival and departure of trains is updated almost every minute throughout the day.

The Information Officer of a State Information Centre provides information about business opportunities, educational facilities, important personages, tourism attractions, etc. of a state. In many cases they also supply a booklet usually containing a map of the state and description of important places, industry, sight-seeing places, etc.

A District Information Officer may provide you a booklet containing fairly good information about the district. S/he may also tell you about the facilities the district authorities can provide for the starting of an industry, a business, and so on.

A well dressed smart person sitting at the Reception Counter of a renowned hotel provides information to potential guests as to the availability of room/s and various other services provided by the hotel and the respective charges thereof through phone, e-mail, fax, etc.

The PRO of the Ministry of External Affairs is there to enlighten you about the various formalities to be fulfilled for obtaining a new passport, renewing an old one, etc.

Only a glimpse is being provided here about the plethora of information supplied by various information officers and their subordinates. The importance of these personnel as sources of information need not be overemphasised. You can well imagine the number and variety of persons engaged in the job and the type of information they are disseminating.

Extension Workers: We have not yet been able to eradicate illiteracy completely from our country. Still a large percentage of people cannot read or write. The number of such people is more in rural areas compared to urban areas. Print material will not be appropriate for imparting knowledge on healthy living, better methods of farming, low-cost housing, benefits and multiple methods of family planning to a large number of illiterate people. They can be taught all these to a certain extent through radio and television (TV) broadcasting. Unfortunately, many in our country, especially those living in the rural areas, cannot afford a radio set or a TV. As a result, the only option left to us is to deploy extension workers in the rural areas. Using lecture-and-demonstration method, they have been educating our rural folk for decades now. Carrying the message of high-yielding varieties of crops and demonstrating to them the method of cultivation have turned our food-deficit country of 1950s to a slightly food-surplus country of 1970s. This shows the effectiveness of extension workers in the dissemination

of information and varieties of information they possess. To villagers and other illiterate people they are proving to be a big source of information. There are various types of extension workers, for example, an agricultural extension worker is an intermediary who helps in the transfer of research results from the laboratory to the field. A public health extension worker disseminates information about methods of healthy living, family planning, etc.

Marketing Professionals: These professionals comprise of marketing executives, trade representatives, advertisers, hawkers, etc. A marketing executive is a person who is highly knowledgeable about the dynamism of the market. S/he knows the demand and supply position of various products and services, market trends, dynamic and sometimes volatile price situation of various commodities, customer psychology, formidable competitors, potential buyers, etc. Basing her/his knowledge on these s/he can visualise to a certain extent the future demand of a particular commodity or service, and further decide upon the marketing as well as advertising strategy in opportune time, and post the trade representatives at strategic positions.

A **trade representative** is a person who is employed by a firm for sales promotion and allied activities. Usually s/he is smart, speaks well, sometimes knows more than one language, has the capability of convincing people, and possesses basic knowledge about the products s/he is putting into market. Her/his activities, among others, include sales promotion, market survey, study of user reaction, identifying competitors in the field, locating prospective buyers, etc. This undoubtedly makes her/him a good source of information. Take for example, a medical representative. S/he covers a particular area and knows the names of all the doctors practising in the area, representatives of other companies operating there; the diseases people are suffering from, the medicines being prescribed by the doctors, medical facilities like hospitals, dispensaries, nursing homes, maternity centres, etc. existing there.

You might have noticed persons in buses, trains, weekly markets, and other busy places carrying some products and loudly announcing their benefits, qualities, prices, etc. These people are called **hawkers** and are usually employed by smaller forms for bringing their products to the notice of common people.

Recently **call centres** have emerged as a big disseminator of product and service information. Employees of the call centres contact the prospective customers through telephone and give them details about the products and services. It is like door to door dissemination of information, personalised, and hence, the effect in many cases is highly rewarding. Many foreign concerns, especially American, are taking the help of call centres in India to advertise their products and services in America itself to cut cost of advertising radically. Thus, people in call centres are becoming knowledgeable about American products and services.

By now, you must have realised that marketing executives, trade representatives, even hawkers are good sources of information for particular products. If you do not know how to advertise a product then the sources of information are advertising people.

Publishers: A publisher is usually a company that prints books, magazines, newspapers, etc. and make them available to the public at a cost. A regular publisher sends the book for review in newspapers, journals, etc. for review; advertises the book; sends representatives to libraries, displays the books in book fairs, etc. A publisher has the knowledge of the book market, the renowned authors whose books are sold in large numbers, the type of books which are sold more; and thus can decide which book is worthy of publishing and earning her/him profit.

Broadcasting Personnel: Newsreaders are the best examples of information disseminators. However, from the gathering of the news to its broadcast, apart from newsreaders, there are reporters, cameramen, editors, and others who give final shape to the news for broadcasting. Many of these people are also good sources of information on current affairs.

Consultants: A consultant is a professional who provides advice usually on payment basis. There are various categories of consultants such as legal consultants, engineering consultants, consulting physician, etc. In the case of litigation, we take the advice of a legal consultant. For setting up an air conditioning plant for an office building, a cinema hall, etc. we consult an engineer who is an expert in the matter. For our ailments, we consult a physician. In all cases we are to pay fees fixed by the consultants.

Teachers, doctors, lawyers and many others are also disseminators of information. We shall discuss some of them later.

5.3.7 Translators

Articles, news items, books, periodicals, patents, theses, etc. are appearing in numerous languages in the world such as English, Russian, German, French, Spanish, Chinese, Japanese, Hindi and Bengali. It is not possible for a person to learn all the languages. Hence, the need for translation or interpretation arises quite often. For getting a piece of writing translated we generally go to a translator. S/he informs us about the cost involved in translation and approximate time s/he will take for translating the piece. If s/he fails to undertake the job s/he may inform about another translator who can do the job. When oral translation is needed, we look for an interpreter. S/he also informs about her/his charges and availability. Some translators are highly knowledgeable about bilingual and multilingual dictionaries.

5.3.8 Information Condensers

Often information needs to be condensed as per the requirement of the user. Suppose, a minister has spoken about the information policy of a country for about an hour. A broadcasting agency is to report the speech of the minister in the news. Obviously, in 15-minute news, it is not possible to accommodate the one-hour-long speech of the minister. Hence, the editor has to put only the gist of the lecture in the news which can be read, say, in a minute or less. Similarly, a researcher may like to have the gist of an article published in a foreign language to ensure whether or not the article will be of any use to her/him. For these jobs we need persons who can condense the information. These persons are called abstractors. They know the art of abstracting, summarising, gist making, etc.

5.3.9 Information Retrievers

In this category we usually include those personnel who retrieve information on demand by searching reference books, databases, Internet, etc. We call these people reference librarians, database searchers, Internet searchers, etc. All these people are experts in their respective fields and good sources of information in the sense that they know where the information is available and can search out the information on demand.

5.3.10 Informetricians

Every moment information is being continuously generated in the world and is cumulating day by day. It is necessary, for various purposes, to know the rate of growth, decay, and many other properties of information. To study all these phenomena a new species of information professional has emerged called informetricians. They possess information about generation, growth, propagation, use and obsolescence of information, various laws governing these factors, the efficiency of information systems, services and products, and various types or relationship existing among subjects.

5.3.11 Information Preservers

Man since time immemorial has been trying to preserve information by various means. Even today man is discovering and inventing newer methods and media of preservation. These professionals are good sources of information about document preservation.

Self Check Exercise

Note: i) Write your answers in the space given below.

ii) Check your answers with the answers given at the end of this Unit.

2) Enumerate different species of information gatherers and describe the function of a reporter.

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3) Describe the function of a trade representative.

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- 4) Who are information disseminators? Explain how a librarian performs the function of an information disseminator.

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5.4 PERIPHERAL INFORMATION PROFESSIONALS

In this category we intend to include those who are usually not considered information professionals per se. But all of them are good sources of information. We are going to discuss some of them in the following sub-sections.

5.4.1 Lawyers

Form purchase of assets, to solving disputes, getting a society registered, and for various other purposes, we require legal help. Lawyers are the persons who provide us the necessary information. Like doctors, the lawyers also charge fees. There are various categories of lawyers. Some of them deal with civil cases like marriage registration, registration of journals, sales tax, income tax; legal procedure involved in the sale or purchase of properties, obtaining licenses for doing business, etc. Another category of lawyers deals with criminal cases such as cheating, theft, robbery, murder, etc. Depending on the crime the lawyer informs about the quantum of punishment, the possibility of winning a particular case, etc. There are patent attorneys who help the inventor in filing applications for patent, fighting cases relating to patents, etc. Lawyers collect information in the form of facts and compile petitions and prepare arguments.

5.4.2 Doctors

A person suffering from an ailment goes to a doctor for medicines whereby s/he is cured. The doctor first of all gathers information from the patient about the symptoms. Thereafter the doctor examines the patient. If the doctor can diagnose the disease, s/he informs the patient about the disease s/he is suffering from, prescribes medicines which the patient has to take or apply, tells her/him how many times and for how many days the medicines are to be taken, and also how the medicines are to be taken - by mouth or injection or they are simply to be applied on the affected area. For example, while prescribing antacid tablets like Digene for acidity, the doctor tells the patient to chew the tablet before swallowing. In case, the doctor cannot diagnose the disease, s/he asks the patient to get some pathological tests done. The results of the test help the doctor to diagnose the disease correctly. For health and diseases, doctors are the best source of information.

5.4.3 Teachers

Teachers possess information on the subject they teach, books and journals on the subject, institutions where the subject is taught within the country and abroad, other teachers on the subject, availability of scholarships, job opportunities, research facilities available within the country and abroad, etc. They also possess information about the students of their classes and many students whom they have taught earlier.

5.4.4 Experts

An expert is a person who possesses sound knowledge on a subject, technique, etc. On many occasions we need their help. For example, for appointing an information scientist in an organisation, we set up an interview board comprising of experts. They interview the candidates, judge their suitability for the post, and finally choose the best candidate depending on her/his knowledge, skill, qualification and experience. For classifying a book, many a times a classifier cannot decide the subject. In such a case, s/he usually takes the help of an expert who knows the subject.

5.4.5 Resource Persons

The connotation of the term 'resource person' varies depending on the context. Normally a resource person enriches a programme by virtue of her/his vast knowledge. S/he provides the main intellectual input to the course for which s/he is the resource person by delivering lectures, and enriching others lectures by her/his comments and suggestions.

5.4.6 Technological Gatekeepers

A technological gatekeeper is a well-informed person in a particular field. Usually, some scientists, technologists, and professionals in business, etc. have got a tendency (possibly inborn) to acquire information from various sources, to keep herself/himself abreast of the development in the field, and to disseminate the information to a person or group who may be interested in the information. There is no formal course to train a person as a technological gatekeeper. Almost automatically, they grow into a technological gatekeeper. According to Zagnoli [Internet 2] a technological gatekeeper should have:

- i) 'technical authority, a high standard of technical and scientific professionalism and a high level of verifiable performance (scientific publications, congress communications and internal relationships, etc.);
- ii) a formal role in the organization (often gatekeepers are coordinators of groups or project managers);
- iii) a proponent and constructive attitude to the general problems of the business; and
- iv) an open and interested attitude to innovation problems and to discussion with colleagues'.

5.4.7 Invisible College

In reality, an invisible college is not a college. Around 1645 A.D. a group of persons interested in natural philosophy and other parts of human learning started

meeting secretly at Gresham College and elsewhere in London under the name of the 'invisible college'. In these meetings, they used to discuss about their research activities, results obtained, new areas that can be researched, etc. The practice continues till today, of course, not in secret but in open meetings like national and international conferences where scholars belonging to the same discipline get acquainted with each other, come to know who is doing what, and discuss during tea time, lunch and dinner their areas of research, problems they are facing, latest findings, etc. This acquaintance often turns into friendship which continues when they exchange their reprints, correspond with one another through letters, talk over the phone, etc. In this way, nowadays invisible colleges are formed. Hence, we can now define an invisible college as a loosely formed association of like minded people who come together to share their experiences and knowledge. It is more or less like an area specific knowledge society.

5.4.8 Common People

Children – A growing child starts picking up information while exploring her/his house, meeting relatives, playing with toys, etc. By the time a child is three, s/he can tell where a particular toy s/he has kept. In the pre-school a child learns about her/his friends, teachers, toys and equipment for playing available in the school, school building, environ of the school, etc. S/he gives this information to parents and others. In this way even in pre-schools s/he becomes a source of information.

In the school a child gathers a great deal of information and can provide information about the location of the school, school compound, school uniforms for boys and girls, classmates, teachers, books, school library, and the subjects s/he are being taught, various events happening in the school, etc.

In the school-going age a child starts reading newspapers, listening to radio, viewing TV, meeting relatives, family friends, and persons of the locality, exploring the locality, and thus gathers a world of information. A child by virtue of being curious often gathers more information than an adult. All these make a child a very good source of information.

In many cases, the information given by an innocent child is considered highly trustworthy. For example, the Rohini Court Special Judge Manoj Jain 'relied almost solely on the eye-witness account of the six-year old [Aman Verma] to pass the verdict against his father' [Pooran Verma] for murdering Sangeeta Verma [Aman's mother] in a gruesome way in June 2008 (Bagga).

During user survey of school libraries, the children of the school provide all information required by the investigator.

Head of a family – During census operations and other surveys, usually the head of the family is consulted for various information. The information obtainable from her/him includes among others the name, age (date of birth, if available), sex, educational qualification, profession, marital status, health status, etc. of each family member. This apart, s/he can provide a lot of information such as, the house where the family lives, the amount of land and other property the family possesses, income the family generates, religion and caste of the family, religious ceremonies the family performs, holy places the family visits, relatives of the family and their respective locations, small scale industry the family is

engaged in, mode of communication as well as means of transport (cycles, scooters, etc.), of the family, costume of the family members, language the family speaks, sources of water and energy, doctors the family consults, hospitals the family visits, electronic gadgets the family uses (fridge, computer, radio, TV, VCR, etc.), crops the family cultivates, fruits the family grows, domestic animals including pets the family rears, food habit of the family, cultural programmes as well as sports and games the family takes part or views on TV, literary activities of the family (someone writing poems or composing songs), and also the history and genealogy of the family.

Village head – Possesses information about libraries or reading rooms (if any), non-government organisations working in the village; newspapers the villagers read, religions the villagers follow, religious and other festivals they organise, shrines the village has, castes of the village people, political affiliation of the villagers, panchayats, financial status of the villagers, availability of banks and loan providing institutions, household industries and small scale industries, development plans being executed, social welfare activities of the villagers, families falling below the poverty line, educational facilities available in the village and nearby areas, educational status of the village people, most educated person in the village; existence of post office, roads and transport facilities, folklores, the marriage customs, adults (both male and female) looking for marriage, languages and dialects the villagers speak, names of plants and animals in the local language/s, common diseases the villagers suffer from, availability of health facilities in the village and nearby areas, herbal drugs the villagers use, family planning methods being adopted by families, status of agricultural land, irrigation facilities, agricultural implements used, crops and vegetables grown throughout the year, fertilisers and pesticides used, forest and forest produce (if any), fruits and flowers grown, domestic animals reared, milk and milk products generated households, pisciculture, sericulture, beekeeping activities (if any), food and drink habit, garments they make and wear; status of housing (buildings, tin sheds, thatched houses, etc.), cultural activities they perform (music, dance, dramas, etc.), literature they generate (some villagers even those who are illiterate compose poems and songs, create short stories, jokes, etc. which form folk literature); archaeological site (if any), and also the history of the village.

The help of village head is often sought by government officials to prepare a list of families falling below the poverty lines, the family planning methods the villagers are adopting, polling booth for the village voters at the time of election, and various other information pertaining to the village. When house to house survey is not needed, the village head can provide the general information about the village.

Priest – A priest is an important person in a society. Usually s/he possesses the almanac (*panchang*) which provides plethora of information about the date and time of various religious festivals, ceremonies like marriage and *mundan*, auspicious time and inauspicious time of everyday, forecast for the year of each zodiac sign (*rashi*), list of items necessary for performing various *pujas* and other religious ceremonies, dates and times of solar and lunar eclipses, etc. In many cases s/he is a horoscope reader as well. By going through the horoscope of a person the priest tells about her/his future. Some priest maintain a good collection of almanacs using which s/he can tell the corresponding dates of two different eras, say Samvat and Gregorian era. Suppose your horoscope shows

your date of birth in Samvat era. If you are interested in knowing the corresponding date according to Gregorian calendar (the English calendar we use follows Gregorian calendar), a priest can help you.

Postman – Possesses information about every household and adult person of the area that falls under her/his jurisdiction. S/he also knows the names of all many adult persons of the locality. Sometimes police and strangers go to the postman to locate a particular person or household. Many a times police requires information from the postman as to the place or person wherefrom a particular person receives letters or money orders.

Police – Possess information about the law and order situation of the area which they serve and also information about every household. They are also aware about the criminals and criminal history of the area that falls under their jurisdiction. Biographers get a good deal of information from the police about celebrities who had spent sometime in jail while fighting for freedom or any other cause.

Matchmaker – In many countries of the world, arranged marriages are still prevalent where match makers are generally found. They possess information about brides and bridegrooms. Usually they keep in their records the photograph, information regarding height, age, complexion, qualification, employment, salary, family history, caste, religion, *gotra*, etc. of the bride and bridegroom. What they maintain can be termed as a small manually compiled or electronically generated database. They provide the information on payment basis. For obtaining information from a matchmaker one has to provide her/him the expected profile of a bride or bridegroom. If there is a match between the given profile and the profile within the ‘database’, the inquirer is informed.

Receptionist – Usually receptionists are found in commercial organisations like hotels, industrial establishments, banks, insurance companies, and airlines offices. They are also to be seen in many government and non-government offices. Usually they are smart, good looking, well-mannered, and fluent in conversation. Often they present the first information about an organisation. They possess substantial information about the organisation, its employees, the names and phone numbers of the head of the organisation, senior executives, junior executives, and others, history, objectives, functions, and achievements of the organisation, testing and other facilities (if any) the organisation has, products of the organisation (if any), publications of the organisation (if any), etc.

Self Check Exercise

Note: i) Write your answers in the space given below.

ii) Check your answers with the answer given at the end of this Unit.

5) Explain how a teacher performs the function of a disseminator of information.

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6) Who are technological gatekeepers? Briefly explain.

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5.5 BIOGRAPHY OF A CELEBRITY

Information is usually obtained from such human sources as parents (if alive), brother/s, sister/s, son/s, daughter/s, relatives, friends, co-workers, personal secretaries, and aides. For a freedom fighter's biography, jailors at times become a potential source of information. This apart, usual help is taken from librarians, information scientists, etc.

5.6 EVENTS

Everyday countless events are taking place in the world such as meetings, conferences, festivals, fairs, exhibitions, games, births, deaths, and so on. In addition, there are events which had happened in the past, and there are many others that will take place in future. To gather information on many of these events human sources in many cases will be the best source and in some cases the only source.

5.6.1 Accidents and Disasters

Various types of accidents and disasters take place everyday on the earth. Information regarding these is usually gathered from eyewitnesses or the survivors. Some examples are given below:

Swine flu – In April 2009, people in Mexico were afflicted with a new disease called swine flu. In medical history this was the first time that humans became the victim of this disease. The deadly disease, caused by a virus called H1N1, spread across the world rapidly creating panic amongst people.

To generate a full-length **report** on the disease, the reporters of *Reader's Digest* interviewed a survivor (Julie Cesar Ruiz Ocampo), a nurse, paramedic Armando Gonzalez, and Ricardo Quizano, the scientist who isolated the virus.

Titanic Disaster – The British luxury passenger liner called *Titanic* sank on 15 April 1912 in its maiden voyage from Southampton, England to New York, USA after hitting an iceberg. The liner was carrying 2200 people, of which more than 1500 perished. It is the survivors who provided the entire information about the disaster.

5.7 SURVEY

Poll Prediction – Every time an election is held in India, various news channels predict the poll results in advance. For doing this the media people are to interview thousands of voters throughout the length and breadth of the country.

Opinion Survey – Many newspapers conduct an opinion survey everyday. The newspaper put a question which the readers answer. From the answer it becomes clear how the people are considering the issue.

Survey for a Research Work – Many researchers including LIS professionals follow survey method for their research work. Often, they prepare a questionnaire and distribute the same to the persons from whom information is being sought. Sometimes the research workers are to interview the persons also to elicit information. In this case also information is elicited from human sources only.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answer given at the end of this Unit.

7) For writing a biographical sketch of a person, whom would you consult for information?

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5.8 SUMMARY

In this Unit first of all an attempt has been made to differentiate between the concepts ‘human source’ and ‘human resource’. All sensible human beings are sources of information. Some are directly involved with information such as information generators, information gatherers, compilers, information processors, information recorders, information disseminators and many others. They have been termed as ‘core information professionals’. Apart from these there are others such as lawyers, doctors, teachers, experts and resource persons in various fields, technological gatekeepers, invisible college members, and finally commoners who also act as good sources of information. These people have been termed as ‘peripheral information professionals’. All these sources have been described to present before you the entire panorama of human sources. The categories of information sources that are to be consulted while writing a biography of a celebrity, preparing a report of an event, or conducting a survey have also been highlighted.

5.9 ANSWERS TO SELF CHECK EXERCISES

1) The term ‘human source’ belongs to library and information science, and ‘human resource’ to economics and management. Human sources mean human beings as sources of information and human resources mean employees of an organisation. The employees of a library or any other

organisation are human resources and all sensible human beings in the world are human sources of information.

- 2) Reporters, correspondents, detectives, spies, police, compilers, enumerators, etc. are information gatherers by profession.

A reporter collects all possible information relating to an event depending on its importance and reports it to the press along with photographs and other associated materials if that is possible. One moral responsibility that lies with the reporter is that the information s/he passes on to the press for wider dissemination should be authentic to the best of her/his knowledge. To establish the authenticity of the report, s/he has to check and crosscheck the information from various vital sources. Suppose, due to police firing some persons have been injured. When the reporter reaches the spot, s/he is likely to get different figures from different persons as to the number of persons injured and different views as to the cause of firing. To establish the actual number of persons injured, s/he may have to go to the nearby doctors and hospital(s) where the persons have received first aid or have been admitted for treatment. S/he may also visit the concerned police station to ascertain the number of persons injured and the cause of firing. S/he may also interview the injured people themselves, the people present at the scene, local political leaders, and other reliable sources to build up her/his entire report.

- 3) A trade representative is employed by a firm for sales promotion and allied activities. Usually s/he is smart, speaks well, sometimes knows more than one language, has the capability of convincing people, and possesses basic knowledge about the products s/he is putting into market. Her/his activities, among others, include sales promotion, market survey, study of user reaction, identifying competitors in the field, locating prospective buyers, etc. This undoubtedly makes her/him a good source of information. Take, for example, a medical representative. Usually s/he possesses the degree of B. Pharm. and is knowledgeable about all medicines usually used for treatment. S/he covers a particular area and knows the names of all the doctors practising in the area, representatives of other companies operating there, the diseases people are suffering from, the medicines being prescribed by the doctors, medical facilities like hospitals, dispensaries, nursing homes, maternity centres, etc. existing there.
- 4) The professionals belonging to this category are: library professionals, documentalists, information officers, extension workers, publishers, trade representatives, receptionists, consultants, marketing officers, broadcasting professionals, press professionals, advertisers, teachers, doctors, lawyers, and hawkers.

Librarians disseminate information in various ways. All librarians compile a catalogue of books and other documents available in the library. Using the catalogue they tell inquirers what books by an author are available in the library, books available on a particular subject or pertaining to a series, whether a book with a particular title is available in the library, etc. Many librarians bring out accession list of the library concerned from time to time. This list informs users about the books added to the library during a particular time. A reference librarian answers many queries of the users using the library

collection. Often s/he also informs where a particular book or periodical may be available which is not there in the library collection.

- 5) A teacher is an expert on the subject s/he teaches. The same information s/he disseminates to her/his students in the class. S/he also knows about books and journals on her/his subject, institutions where her/his subject is taught within the country and abroad, other teachers on her/his subject, availability of scholarships, job opportunities, research facilities available within the country and abroad, etc. On inquiry, s/he disseminates these information.
- 6) A technological gatekeeper is a well-informed person in a particular field. Usually, some scientists, technologists, and professionals in business, etc. have got a tendency (possibly inborn) to acquire information from various sources, to keep themselves abreast of the development in their field, and to disseminate the information to a person or group who may be interested in the information. There is no formal course to train a person as a technological gatekeeper. Almost automatically, they grow into a technological gatekeeper.
- 7) Information is usually gathered from such human sources as parents (if alive), spouse, brother/s, sister/s, son/s, daughter/s, relatives, friends, co-workers, personal secretaries, and aides. For a freedom fighter's biography, jailors at times become a potential source of information. This apart, usual help is taken from librarians, information scientists, etc.

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UNIT 6 INSTITUTIONS AS SOURCES OF INFORMATION

Structure

- 6.0 Objectives
- 6.1 Introduction
- 6.2 Government Ministries and Departments
- 6.3 International Agencies
- 6.4 R&D Organisations
- 6.5 Academic Institutions
- 6.6 Learned Societies
- 6.7 Publishing Houses
- 6.8 Press
- 6.9 Broadcasting Stations
- 6.10 Museums
- 6.11 Archives
- 6.12 Non-Governmental Organisations
- 6.13 Summary
- 6.14 Answers to Self Check Exercises
- 6.15 Keywords
- 6.16 References and Further Reading

6.0 OBJECTIVES

After reading this Unit, you will be able to:

- describe the different types of premier institutions in different sectors;
- explain the products, services, publications, activities, facilities, achievements, programmes, important persons, address, history, etc. of different types of institutions; and
- highlight the importance of institutions as an important source of information.

6.1 INTRODUCTION

Among the many non-documentary sources of information, institutions are a major source of information. An institution is a large important organisation that has a purpose. A university for example is an educational institution and a bank is a financial institution. In addition to the people who manage and run the institution, other components such as its various resources including files, documents and the organisational website cumulatively make institution a rich source of information. Many large libraries are information institutions whose primary objective is to acquire, organise and fulfil information needs of users. Apart from libraries and information centres, there are numerous other organisations which have varied objectives. Such organisations may be research

institutes, commercial organisations, international bodies involved in developmental work, government departments, etc. In this Unit we shall discuss these institutions that act as sources of information.

6.2 GOVERNMENT MINISTRIES AND DEPARTMENTS

The various ministries of the government are authentic sources of primary data and information. The executive, legislature, judiciary, states, union territories and districts of the Indian government have a structured mechanism for carrying out its many activities and disseminating much needed information through its various institutions and organisations. The list of ministries is given below in Table 6.1.

Table 6.1: List of Ministries of Govt. of India

<ul style="list-style-type: none"> • Ministry of Agriculture • Ministry of Chemicals and Fertilizers • Ministry of Civil Aviation • Ministry of Coal • Ministry of Commerce and Industry • Ministry of Communications and Information Technology • Ministry of Consumer Affairs, Food and Public Distribution • Ministry of Corporate Affairs • Ministry of Culture • Ministry of Defence • Ministry of Development of North Eastern Region • Ministry of Earth Sciences • Ministry of Environment and Forests • Ministry of External Affairs • Ministry of Finance • Ministry of Food Processing Industries • Ministry of Health and Family Welfare • Ministry of Heavy Industries and Public Enterprises • Ministry of Home Affairs • Ministry of Housing and Urban Poverty Alleviation • Ministry of Human Resource Development • Ministry of Information and Broadcasting • Ministry of Labour and Employment • Ministry of Law and Justice 	<ul style="list-style-type: none"> • Ministry of Micro, Small and Medium Enterprises • Ministry of Mines • Ministry of Minority Affairs • Ministry of New and Renewable Energy • Ministry of Overseas Indian Affairs • Ministry of Panchayati Raj • Ministry of Parliamentary Affairs • Ministry of Personnel, Public Grievances and Pensions • Ministry of Petroleum and Natural Gas • Ministry of Planning • Ministry of Power • Ministry of Railways • Ministry of Road Transport and Highways • Ministry of Rural Development • Ministry of Science and Technology • Ministry of Shipping • Ministry of Social Justice and Empowerment • Ministry of Statistics and Programme Implementation • Ministry of Steel • Ministry of Textiles • Ministry of Tourism • Ministry of Tribal Affairs • Ministry of Urban Development • Ministry of Water Resources • Ministry of Women and Child Development • Ministry of Youth Affairs and Sports
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The policies announced by the government from time to time are available to the information seeker through the various government ministries and departments. Welfare-oriented activities of many ministries that require outreach or wide provisioning of information have offices at district and even the rural levels. Let us take the example of one of the ministries, the Ministry of Human Resource Development. The Ministry has two departments, the Department of School Education and Literacy and Department of Higher Education. The speeches and announcements of the ministers and other important officials of the Ministry are important sources of information. So are the numerous documents and files in the Ministry. The files are a valuable source when the Ministry has to formulate plans and policies. The Ministry also gives information to students who travel abroad for higher studies. These and other information are disseminated through its various departments and bureaus. The website of the Ministry is also a very rich source of information.

As another specific example, the Ministry of Agriculture has an Agricultural Planning and Information Bank (APIB) for the East Khasi Hills District of Meghalaya that is a single window access to knowledge related to agriculture and allied sectors useful for the farmers, extension personnel and planners.

The government ministries and departments have their organisational presence in almost all sectors, be it banking, financial, insurance, cooperatives, cultural, educational, health, public sector, scientific research, sports, tourism, hospitality, etc. Ministry of Information and Broadcasting, Ministry of Statistics and Programme Implementation, Ministry of Human Resource Development, Ministry of Science and Technology and Ministry of Communications and Information Technology are some of the notable ministries that have highly organised mechanisms for information provisioning.

In the recent years, the Right to Information Act 2005 (RTI) that mandates timely response to citizen requests for government information has broken new grounds in providing information to the citizens. It is “an Act to provide for setting out the practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, the constitution of a Central Information Commission and State Information Commissions and for matters connected therewith or incidental thereto.”

6.3 INTERNATIONAL AGENCIES

There are many international agencies that are involved in developmental programmes and have presence across the globe, especially in the developing countries.

The United Nations (UN) with its several programmes, research and training institutes, other UN entities such as the United Nations University and many subsidiary bodies and commissions as given in Table 6.2 is a rich source of information in numerous areas. Particularly, the United Nations Educational, Scientific and Cultural Organisation (UNESCO), founded in 1945 is a specialised agency of United Nations that promotes international cooperation among its 193 Member States and six Associate Members in the fields of education, science, culture and communication. UNESCO serves as a clearing house – for the dissemination and sharing of information and knowledge- while helping Member States to build their human and institutional capacities in diverse fields.

Table 6.2: UNO and its Main Bodies, Research and Training Institutes, Programmes and Funds and Specialised Agencies

Institutions as Sources of Information

Main Bodies	Programmes and Funds
<ul style="list-style-type: none"> • General Assembly • Security Council • Economic and Social Council • Trusteeship Council • International Court of Justice • Secretariat • Repertory of Practice of United Nations Organs 	<ul style="list-style-type: none"> • International Trade Centre (ITC) • Office of the United Nations High Commissioner for Refugees (UNHCR) • United Nations Children’s Fund (UNICEF) • United Nations Conference on Trade and Development (UNCTAD) • United Nations Development Programme (UNDP) • United Nations Capital Development Fund (UNCDF) • United Nations Volunteers (UNV) • United Nations Drug Control Programme (UNDCP) • United Nations Environment Programme (UNEP) • United Nations Human Settlements Programme (UN-HABITAT) • United Nations Population Fund (UNFPA) • United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) • United Nations World Food Programme (WFP)
<p>Research and Training Institutes</p> <ul style="list-style-type: none"> • United Nations Institute for Disarmament Research (UNIDIR) • United Nations Institute for Training and Research (UNITAR) • United Nations Interregional Crime and Justice Research Institute (UNICRI) • United Nations Research Institute for Social Development (UNRISD) 	<p>Specialised Agencies</p> <ul style="list-style-type: none"> • Food and Agriculture Organization of the United Nations (FAO) • International Civil Aviation Organization (ICAO) • International Fund for Agricultural Development (IFAD) • International Labour Organization (ILO) • International Maritime Organization (IMO) • International Monetary Fund (IMF) • International Telecommunication Union (ITU) • United Nations Educational, Scientific and Cultural Organization (UNESCO) • United Nations Industrial Development Organization (UNIDO) • Universal Postal Union (UPU) • World Bank Group <ul style="list-style-type: none"> ○ International Bank for Reconstruction and Development (IBRD) ○ International Centre for Settlement of Investment Disputes (ICSID) ○ International Development Association (IDA) ○ International Finance Corporation (IFC) ○ Multilateral Investment Guarantee Agency (MIGA) • World Health Organization (WHO) • World Intellectual Property Organization (WIPO) • World Meteorological Organization (WMO) • World Tourism Organization (UNWTO)

The World Health Organization (WHO) is another institution within the United Nations system which is the directing and coordinating authority on health. It is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries and monitoring and assessing health trends. The WHO is a valuable source on global health information, data and statistics. The organisation brings out several publications and reports, many of which are available free of cost. Some key publications of WHO include *The World Health Report*, *World Health Statistics*, *International Travel and Health*, *International Health Regulations*, *The International Classification of Diseases* and *International Pharmacopoeia*.

The Food and Agriculture Organization (FAO) of the United Nations leads international efforts to defeat hunger. Serving both developed and developing countries, FAO acts as a neutral forum where all nations meet as equals to negotiate agreements and debate policy. Importantly, FAO is also a source of knowledge and information. FAO helps developing countries and countries in transition, modernise and improve agriculture, forestry and fisheries practices and ensure good nutrition for all. Publications are central to FAO’s work as a knowledge organisation. More than 300 titles per year are published by FAO in multiple languages, on topics such as hunger and food security, commodity markets, climate change, nutrition, fisheries, forests, rural livelihoods, etc. FAO’s most important publications present comprehensive and objective information and analysis on the current global state of food and agriculture, fisheries and aquaculture, forests, agricultural commodity markets and hunger. These titles are issued regularly to inform public, debate and policy making at national and international levels. Some of these publications are: *The State of Food and Agriculture (SOFA)*, *The State of World Fisheries and Aquaculture (SOFIA)*, *State of the World’s Forests (SOFO)*, *The State of Food Insecurity in the World (SOFI)* and *The State of Agricultural Commodity Markets (SOCO)*.

Asian Development Bank (ADB) – a multilateral finance institution that promotes economic and social progress in the Asia-Pacific region, The International Development Research Centre (IDRC) – a public corporation created by the Canadian government to help communities in the developing world find solutions to social, economic, and environmental problems they face, South Asian Association for Regional Cooperation (SAARC) – an organisation of South Asian nations dedicated to economic, technological, social, and cultural development emphasising collective self-reliance and Association of South Eastern Asian Nations (ASEAN) – a geo-political and economic organisation of 10 countries located in Southeast Asia are some other agencies that are important sources of information.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

- 1) Enumerate the some of the important international agencies that are sources of information. Highlight the role of UNESCO as a vital source of information.

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6.4 R&D ORGANISATIONS

There are several research and development (R&D) organisations in the country under the aegis of many government departments such as the Department of Science and Technology (DST), Department of Biotechnology (DBT), Council of Scientific and Industrial Research (CSIR), Indian Council of Medical Research (ICMR), Indian Council of Agricultural Research (ICAR), and Defence Research and Development Organisation (DRDO). There are also many private R&D organisations. Many of the laboratories of these umbrella organisations are not only well known but have been recognised as important sources of information in specific areas. In the case of CSIR, many of the laboratories' libraries and information centres function as national information centres. The erstwhile National Information System for Science and Technology (NISSAT) had facilitated formation of 14 national centres dealing with specialised sectors. These information centres were built around existing information resources and facilities. The centres of erstwhile NISSAT are given in Table 6.3.

Table 6.3: National Information Centres

	National Information Centre	Institution/Library	CSIR/vs. Non-CSIR
1.	NICLAI – National Information Centre on Leather and Allied Industries	Central Leather Research Institute	CSIR
2.	NICFOS – National Information Centre on Food Science	Central Food Technological Research Institute	CSIR
3.	NICMAP – National Information Centre for Machine Tools and Allied Products	Central Manufacturing Technology Institute	Non-CSIR
4.	NICRYS – National Information Centre for Crystallography	University of Madras	Non-CSIR
5.	NICDAP – National Information Centre for Drugs and Pharmaceuticals	Central Drug Research Institute	CSIR
6.	NICTAS – National Information Centre for Textiles and Allied Subjects	Ahmedabad Textile Industry's Research Association	Non-CSIR
7.	NICHEM – National Information Centre for Chemicals and Allied Industries	National Chemical Laboratory	CSIR
8.	NICAC – National Information Centre for Advanced Ceramics	Central Glass and Ceramics Research Institute	CSIR
9.	NCB – National Centre for Bibliometrics	Indian National Scientific Documentation Centre	CSIR
10.	NICDROM – National Information Centre for CD-ROMs	National Aeronautical Laboratory	CSIR
11.	NICMAN – National Information Centre on Management Science	Indian Institute of Management, Ahmedabad	Non-CSIR
12.	NICMAT – National Information Centre on Tea Manufacturing and Marketing	Tea Board	Non-CSIR
13.	NICMAS – National Information Centre for Marine and Aquatic Sciences	National Institute of Oceanography	CSIR
14.	NCPC – National Centre for Publications on CD-ROM	Foundation for Innovation of Technology Transfer	Non-CSIR

From Table 6.3 it can be seen that out of the 14 national information centres involved in NISSAT, eight were set up with the CSIR libraries. With the discontinuance of the NISSAT programme, some of the centres such as NCB, NICRYS, NCPC, NICMAT, NICAC don't seem to be functional anymore as envisaged. However, some others such as NICMAS, NICLAI, NICFOS, NICDAP and NICTAS still continue as national information centres in specific areas.

A typical R&D organisation is an information consumer as well as information generator. This characteristic of an R&D organisation makes it an important source of information on two accounts. As the R&D institutes are consumers of information, the institutes usually have rich libraries and information centres that is a valuable source of information in a given field. By virtue of the research and development activities that are being carried out, the R&D organisations are important sources of primary information. Of course, the findings of research activities that are carried out usually get reported in documentary sources such as conference proceedings, journals or patents, nevertheless, for an information seeker the organisation can provide authentic and current information on an area of research pursued by the scientists therein.

It should also be remembered that most R&D institutions hold conferences and seminars which are important platforms for knowledge sharing, discussions and networking among the scientists and researchers. Many research institutions also have the concept of 'open day' or 'open house' wherein the general public are invited to exhibitions and demonstration of the R&D institutes' various facilities and technologies which in turn itself is an information gathering and enriching experience.

6.5 ACADEMIC INSTITUTIONS

Schools, universities, colleges and other specialised academic institutions not only impart knowledge but also play an important role in moulding the lives of youngsters for their future careers and also being a part of a good citizenry. Academic institutions, particularly the higher education institutions such as universities are sources of various kinds of information.

As academic institutions would be conducting several courses, information on the courses and programmes offered is the one of the many different kind of information that is provided. Centres or departments in the academic institutions that deal with placements of students, public relations, industry partnership, commercialisation of technologies and alumni are some of the areas on which the academic institution disseminates information. The academic institutions also have well-stocked libraries that are an important source of information in itself. Many academic institutions even have museums that complement the institutions in providing information.

The Nalanda University in India was the oldest university system of education in the world. India now has over 400 universities including central, state, deemed and private universities. Some of the prominent universities in India include the University of Delhi, Jawaharlal Nehru University, Banaras Hindu University, University of Madras, University of Mumbai, etc.

6.6 LEARNED SOCIETIES

A learned society is an organisation that exists to promote an academic discipline or group of disciplines. Most learned societies are non-profit organisations. Their activities typically include holding regular conferences for the presentation and discussion of new research results and publishing or sponsoring academic journals in their discipline. Some also act as professional bodies, regulating the activities of their members in the public interest or the collective interest of the membership of the society. Many times, the formation of a society is an important step in the emergence of a new discipline or sub-discipline.

Historically, the learned societies have played a very important role in furthering research and most vitally, serving as a body for information dissemination and knowledge sharing. One of the finest examples of a renowned learned society is the Royal Society of London. The Royal Society is the world's oldest scientific academy in continuous existence, and has been at the forefront of enquiry and discovery since its foundation in 1660. Throughout its history, the Society has promoted excellence in science through its Fellowship and Foreign Membership, which has included Isaac Newton, Charles Darwin, Ernest Rutherford, Albert Einstein, Dorothy Hodgkin, Francis Crick, James Watson, and Stephen Hawking. The credit for the publication of one of the earliest journals in the year 1665, the *Philosophical Transactions* goes to the Royal Society.

Every country has learned societies and associations in many academic disciplines. American Association for the Advancement of Science (AAAS), and American Chemical Society (ACS) are also among renowned learned societies.

India also has a number of learned societies in different disciplines. The Asiatic Society, The Geological Society of India, and The Indian Physical Society are some of the learned societies. The Asiatic Society was founded in the year 1784 by Sir William Jones (1746-1794) who began his work with a dream that visualised a Centre for Asian Studies including almost everything concerning man and nature within the geographical limits of the continent. The library of The Asiatic Society has about 1,49,000 volumes, particularly rich in works on Indology and Asiatic Lore, and in standard philological and scientific serials. The printed books in this department range in date from the latter half of the 15th century A.D. and one of its special features consists in the many items of rare works, otherwise unavailable, or scarcely available, including books printed in India in the late 18th and early 19th centuries. The total number of manuscripts in 26 scripts and languages are 47,000 (approx). The total numbers of journals are about 80,000. The Museum of the Asiatic Society has a large collection of paintings, manuscripts, sculptures, bronzes, coins, and inscriptions.

Given the nature, scope, objectives and functions of some of the learned societies, it can be well understood that they are precious sources of historical as well as recent information in a given discipline.

Self Check Exercise

- Note:** i) Write your answer in the space given below.
 ii) Check your answer with the answers given at the end of this Unit.
- 2) ‘Learned societies are an indispensable source of information.’ Explain.

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6.7 PUBLISHING HOUSES

Publishing houses are in the information business by way of publishing a variety of documentary sources, predominantly books and of course others such as maps, atlases and other documents. Publishing by itself is a process of production and dissemination of literature or information. Traditionally, publishing referred to printed materials. However, with the advent of ICT applications, especially the Internet, publishing is being redefined.

Publishing can be done by an individual, such as an author himself or herself. However, there are large publishing houses that publish a variety of materials including books and periodicals. By virtue of being in the information business, the publishing houses are a vital source of information.

Types of publishing include the newspaper, periodical, book, directory and academic publishing. Academic publishing distributes academic research and scholarship. Most academic works are published in the form of journal articles, books or theses. The part of academic written output that is not formally published but merely printed or posted is often called the “grey literature”. Most scientific and scholarly journals, and many academic and scholarly books, though not all, are based on some form of peer review or editorial refereeing to qualify texts for publication. Peer review quality and selectivity standards vary greatly from journal to journal, publisher to publisher, and field to field.

Elsevier and Springer are among the major publishers that bring out a number of scientific periodicals and books. Most of the major publishers are now making available their resources online which can be accessed by users through different payment modes.

6.8 PRESS

Like the publishing house, the press or the print news media are also institutions in the information business, although with the difference being that the press and print news media focuses on current news and events. Newspapers are a

valuable documentary source of current information. In addition to the general newspapers, sports, business, trade, science and other such narrow areas also have newspapers and news magazines that aim to disseminate information to the users.

Press also play an important role in archiving information. Such archived information is of great value to the information seekers including students, researchers, investigators, film makers, authors, etc.

6.9 BROADCASTING STATIONS

Broadcasting stations include the radio and television stations that broadcast programmes for entertainment and news. In the present times, the television, in particular, has become an integral of part of one's life as a source of entertainment and general awareness. From modest beginnings, radio and television stations in India have proliferated so much that India is one of the countries that have the highest number of news channels. Today, many broadcasting stations, including several private ones, air programmes, many of which have enormous information value.

Other than entertainment, the broadcasting stations are also being used to support education though the various radio and television programmes. For example, IGNOU's Gyan Vani and Gyan Darshan are educational broadcasting stations on radio and television respectively. The regional radio programmes of India, promotes the tradition and culture of the respective state through discussions with the experts. These Indian radio programmes often invite social activists and experts to their studios to discuss various issues, and enlighten the audience of the same.

6.10 MUSEUMS

A museum is a building or institution which houses a collection of artifacts. Museums collect and care for objects of scientific, artistic, or historical importance and make them available for public viewing through exhibits that may be permanent or temporary. Most large museums are located in major cities throughout the world and more local ones exist in smaller cities, towns and even the countryside. Early museums began as the private collections of wealthy individuals, families or institutions of art and rare or curious natural objects and artifacts.

There are museums all over the world. The museums of ancient times, such as the Museum of Alexandria, would be equivalent to a modern graduate institute. The modern meaning of the word can be traced to the Museum of Pergamon in Anatolia, which displayed artwork.

Unlike the press and broadcasting houses that help to serve current information, the museums are organisations that are a major source of ancient and historical information. There are different kinds of museums on different areas such as science museum and rail museum. The museums store and display artefacts, relics and other ancient material and also give information regarding the same for the benefit of the information seekers.

There are a number of museums in India. The National Museum, New Delhi is the prime museum in the country. The blue-print for establishing the National Museum in Delhi had been prepared by the Gwyer Committee set up by the Government of India in 1946. When an Exhibition of Indian Art consisting of selected artefacts from various museums of India, sponsored by the Royal Academy (London) with the cooperation of the Government of India and Britain, was on display in the galleries of Burlington House, London during 1947-48, it was decided to display the same collection under a single roof in Delhi before the return of exhibits to their respective museums. Accordingly, the exhibition was held in the state rooms of the Rashtrapati Bhawan, New Delhi in 1949, and it turned out to be a great success. In turn, the event proved responsible for the creation of the National Museum.

On 15th August, 1949, the National Museum was formally inaugurated by the Governor-General of India, Shri R.C. Rajagopalachari, and it was announced that till a permanent building for housing the National Museum was constructed, the Museum would continue to function in the Rashtrapati Bhawan. The Government also felt to retain the exhibits on show to form the holdings of the National Museum and the plan was sent to all the participants of London exhibition. The National Museum received several gifts but artifacts were collected mainly through its Art Purchase Committee. In the meanwhile, the foundation of the present building was laid by Pt. J.L. Nehru, Prime Minister of India, on 12th May, 1955 and the new building where works of art were displayed on scientific lines, was handed over to Museum authorities in June, 1960. The Museum was formally thrown open to the public on December 18, 1960. And it is now within the administrative control of and fully financed by the Department of Culture, Ministry of Human Resource Development, Government of India.

The Museum has in its possession approximately 2,00,000 works of exquisite art of diverse nature, both Indian and foreign, and its holdings cover a time span of more than five thousand years of India's cultural heritage. The chronological display of selected art objects in the various galleries, screening of educational films related to art and culture, guided tours, gallery talks by the experts, special lectures and training programmes, facilities for photography and access to the reserve collection and library for the study, and advice on identification of art objects are all information providing activities of the Museum.

The National Museum conducts training courses on care of paintings and illustrated manuscripts and organises exhibitions from time to time. Since its inception, the National Museum has been bringing out various publications for the people from all walks of life. There are books for children, for common visitors and for the scholars interested in the study of art, architecture, painting, sculptures, history, religion, culture, etc. Besides bringing out art publications on Indian art and culture, the National Museum also brings out a quarterly newsletter, a research journal, research publications, guide books, gallery sheets, brochures on exhibitions and galleries, catalogues, monographs, activity books, picture postcard, reproductions and other finding aids required by the scholars and general public.

Self Check Exercise

- Note:** i) Write your answer in the space given below.
ii) Check your answer with the answers given at the end of this Unit.
3) What are the activities of a museum that make it an information provider?

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6.11 ARCHIVES

Archives, like museums are storehouses of documents that have great historical value. An archive is a collection of historical records. Archives consist of records which have been selected for permanent or long-term preservation on grounds of their enduring cultural, historical or evidentiary value. Archival records are normally unpublished and almost always unique, unlike books or magazines for which many identical copies exist. Archives are quite distinct from libraries with regard to their functions and organisation, although archival collections can often be found within library buildings as well.

The National Archives of India is the repository of the non-current records of the Government of India and is holding them in trust for the use of administrators and scholars. It is an Attached Office of the Department of Culture under the Ministry of Tourism and Culture. It was set up in March 1891 in Calcutta (Kolkata) as the Imperial Record Department and subsequent to the transfer of the National Capital from Calcutta to New Delhi in 1911. The records were made available for bonafide research in 1939 and by 1947 all pre 1902 records were available for consultation. After independence, the Imperial Records Department was rechristened as National Archives of India. In 1947, the Departmental Journal *The Indian Archives* came into existence which contains research papers on source material of modern Indian history, conservation of documents, records-management, reprographics, archival awareness and all other allied aspects of functional archives.

National Archives of India is the nodal agency of Government of India for the implementation of the Public Records Act, 1993 and the Public Records Rules, 1997 made under the Act. The Act regulates the management, administration and preservation of all public records of the Central Government and the Union Territory administrations.

The National Archives of India is responsible for not only keeping in safe custody, the records of the various ministries/ departments of the Government of India, but is also engaged in devising suitable mechanism to streamline the management of their records in a systematic manner so that they can be used by administrators and scholars at ease. It also advises the state governments, custodial institutions, etc. in proper upkeep and management of their records. Preservation, reprographic services, reference service and training programmes on archives and records management are provided by the National Archives of India.

The National Film Archive of India is yet another example of an archive that aims to safeguard the heritage of Indian cinema for posterity and act as a centre for dissemination of a healthy film culture in the country. Promotion of film scholarship and research on various aspects of cinema also form part of its Charter. Familiarising foreign audiences with Indian Cinema and to make it more visible across the globe is another declared objective of the Archive. Many newspaper houses and other organisations also set up archives.

6.12 NON-GOVERNMENTAL ORGANISATIONS

According to Peter Willetts, “Non-governmental organization is defined as an independent voluntary association of people acting together on a continuous basis, for some common purpose, other than achieving government office, making money or illegal activities”. Further, it is legally constituted and operates independently from any government thus does not have government status. Some NGOs are funded totally or partially by governments, and such NGOs maintain their non-governmental status by excluding government representatives from membership in the organisation. Elaborating on Willetts definition, it must be remembered that most NGOs pursue some wider social aim that has political aspects, but that are not overtly political organisations such as political parties. Sometimes NGOs are also known as “civil society organisations”, “non-profit organisations” or referred to by other names.

In India, even before independence, there were a number of civil society organisations. On the basis of a civil society brief prepared by the Asian Development Bank (ADB) the Government of India established the Central Social Welfare Board in 1953 to promote social welfare activities and support people’s participation programmes through NGOs. Following this, there has been a body of professional NGOs in India. International NGOs entered India in significant numbers to provide drought relief during two consecutive agricultural seasons, 1965–1966 and 1966–1967. Many of them established permanent local operations thereafter. Moreover, foreign funds began flowing to domestic NGOs in India, changing the character of civil society once more.

During the 1970s, India witnessed a rapid increase in and diversification of the NGO sector as a response to the national political scenario and increasing concern about poverty and marginalisation. Both welfare and empowerment oriented organisations emerged during this period, and the issues of development, civil liberties, education, environment, health, and livelihood all became the focus of attention. With community participation as a defined component in a number of social sector projects during the 1970s and 1980s, NGOs began to be formally recognised as development partners of the state. Their work was increasingly characterised by grassroots interventions, advocacy at various levels, and mobilisation of the marginalised to protect their rights.

According to the ADB brief, as of 2009 there were 1.5 million NGOs work in India (i.e., non-profit, voluntary citizens’ groups organised on a local, national, or international level). This includes temples, churches, mosques, *gurdwaras* (Sikh place of worship), sports associations, hospitals, educational institutions, and *ganeshotsav mandals* (temporary structures set up to house Ganesh festival celebrations). Most NGOs in India are small and dependent on volunteers. The ADB brief also reports that according to a survey conducted by Society for

Participatory Research in Asia (PRIA), 73.4% of NGOs have one or no paid staff, although across the country, more than 19 million persons work as volunteers or paid staff at an NGO. The PRIA survey also revealed that 26.5% of NGOs are engaged in religious activities, while 21.3% work in the area of community and/or social service. Reportedly, about one in five NGOs works in education, while 17.9% are active in the fields of sports and culture. Only 6.6% work in the health sector.

To further, its activities and functions, all NGOs irrespective of their areas of work create information materials which range from simple brochures to elaborate reports. With many NGOs receiving grants from funding agencies for executing project, the NGOs have to prepare project reports which are a valuable source of primary information. All NGOs bring out one or the other information product, including directories, yearbooks, proceedings, etc.

NGO types by level of operation include:

- a) community-based organisations that arise out of people's own initiatives, e.g. sports clubs, women's organisations;
- b) religious or educational organisations;
- c) national or international NGOs, or bilateral or international agencies, and others independent of outside help;
- d) citywide organisations such as the Rotary or Lion's Club;
- e) national NGOs include organisations such as the Red Cross, YMCAs/ YWCAs; and
- f) professional organisations such as The Energy Resources Institute (TERI), Pratham.

There are many NGOs working towards the welfare and rights of children. *Child in Need Institute (CINI)*, India is a leading NGO founded in Kolkata in 1974. Through its field programmes, training and research, the focus of the NGO has been on health of women and children, child nutrition and development, adolescent issues and mainstreaming street children through education. *Child Rights and You (CRY)* is another prominent NGO that catalyses change in the lives of underprivileged children in India by restoring their rights.

There are also many NGOs focussing on the welfare of women. *Centre for Social Research* is a non-governmental organisation whose mission is to empower the women and girls of India, guarantee their fundamental rights, and increase understanding of social issues from a gender perspective. The NGO operates on local, national and regional levels in an effort to enhance the capacities of individuals, communities and institutions for creating a humane, equitable and gender-just society. *Sapna* is another NGO that among other activities, is also engaged in women's empowerment.

Centre for Science and Environment is an NGO that researches into, lobbies for and communicates the urgency of development that is both sustainable and equitable. The efforts of the Centre are built around five programmes that include Communication for Awareness, Research and Advocacy, Education and Training, Knowledge Portal and Pollution Monitoring. *Kalpavriksh* is an NGO that works on environmental awareness, campaigns, litigation, research, and other areas.

All the NGOs have a strong information base and have information communication in its area of work as a mandate. They bring out reports and other publications such as magazine that are a source of information. Many NGOs work on unique projects and activities, and consequently the information products based on their activities are a primary source of information.

6.13 SUMMARY

Institutions as a source of information have been discussed in this Unit. As can be understood, there are different kinds of institutions and each of them has different functions. Nevertheless, they are an important source of information that meets the information requirement of different types of information seekers. While the documentary sources are valuable, the importance of institutions as a vital non-documentary source of information cannot be overlooked.

6.14 ANSWERS TO SELF CHECK EXERCISES

- 1) UNESCO, WHO, FAO, and IDRC are some of the important international agencies. United Nations Educational, Scientific and Cultural Organization (UNESCO), founded in 1945 is a specialised agency of United Nations that promotes international cooperation among its 193 Member States and six Associate Members in the fields of education, science, culture and communication. UNESCO serves as a clearing house – for the dissemination and sharing of information and knowledge - while helping Member States to build their human and institutional capacities in diverse fields.
- 2) A learned society is an organisation that exists to promote an academic discipline or group of disciplines. Activities of learned societies include holding regular conferences for the presentation and discussion of new research results and publishing or sponsoring academic journals in their respective disciplines. Some also act as professional bodies, regulating the activities of their members in the public interest or the collective interest of the membership of the society. Several societies bring out information sources such as journals and abstracting services. The general nature of activities of the learned society, its knowledgeable members and the information resource base make a learned society an indispensable source of information.
- 3) A museum is a building or institution which houses a collection of artifacts. Museums collect and take care of objects of scientific, artistic, or historical importance and make them available for public viewing through exhibits that may be permanent or temporary. Museums undertake several activities that make them an important information source. This includes, display of objects, arts and artifacts along with its information; screening of educational films; guided tours; talks by the experts; special lectures and training programmes; facilities for photography; access to the reserve collection; library for the study; and advice on identification of art objects. These are all information providing activities of the museum.

6.15 KEYWORDS

- ACS** : American Chemical Society (ACS) is a premier learned society that publishes the important abstracting service, *Chemical Abstracts*.
- Archive** : An archive is a collection of historical records.
- IASLIC** : Indian Association of Special Libraries and Information Centres (IASLIC) is a learned society that has many library professionals of special libraries and information centres as members.
- Museum** : A museum is a building or institution which houses a collection of artifacts.
- Right to Information Act** : An Act that mandates timely response to citizens' requests for government information.
- UNESCO** : United Nations Educational, Scientific and Cultural Organization (UNESCO) is a specialised agency of United Nations that promotes international cooperation in the fields of education, science, culture and communication.
- WHO** : World Health Organization (WHO) is an institution providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries and monitoring and assessing health trends.

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UNIT 7 MEDIA AS SOURCES OF INFORMATION

Structure

- 7.0 Objectives
- 7.1 Introduction
- 7.2 Media
- 7.3 Mass Media
 - 7.3.1 Characteristics, Scope and Functions
 - 7.3.2 Positive Influences
 - 7.3.3 Negative Influences
- 7.4 Components of Mass Media
 - 7.4.1 Print Media
 - 7.4.2 Radio Broadcasting
 - 7.4.3 Television
 - 7.4.4 Recordings on such as CD, DVD, etc.
 - 7.4.5 Motion Films
- 7.5 Accessibility and Availability
- 7.6 Advertisements
- 7.7 Public Relations
- 7.8 Indian Scenario
- 7.9 ICT and Mass Media
- 7.10 Media Persons as Sources of Information
- 7.11 Summary
- 7.12 Answers to Self Check Exercises
- 7.13 Keywords
- 7.14 References and Further Reading

7.0 OBJECTIVES

After reading this Unit, you will be able to:

- discuss media as an instrument of social transformation;
- describe mass media, their components, scope and functions;
- explain the influence of mass media on the society;
- identify the various sources of accessibility to and availability of mass media information such as printed sources, Internet, mobile phones;
- highlight the role and functions of advertisements and public relations being an integral part of mass media;
- describe the Indian mass media scenario and their all round impact;
- state the importance of ICT in mass media; and
- explain how media persons can be vital sources of information.

7.1 INTRODUCTION

This Block deals with non-documentary sources of information. Under this category of sources, this Unit introduces you to mass media, which includes both print and electronic sources. Media themselves, as most powerful technological forces, are the principal instruments of changes in modern society; they impact every field of human activities. Mass media are means of communication such as newspapers, radio, TV through which most people get their news, information and entertainment. They are powerful means of communication for shaping public opinion and determine public policy of government, business and industry and other institutions. They purvey every natural phenomenon and practically all human events and activities.

In this Unit, you will get an exposure to all components of mass media, which will include print and electronic media. In today's context, 'mass' includes every section of the society, irrespective of their status or knowledge perceptions. Hence, mass media impact every section of society in one-way or the other. We will understand the scope, functions and activities of newspapers, radio broadcasting, TV, motion films, and also recordings, which carry stored information in CDs and DVDs. All these activities are through well-established institutions, managed by qualified and experienced professionals.

Mass media generate a huge volume and variety of information and knowledge, which are vital sources for contemporary and historical studies. Accessibility to this treasury of information and knowledge in printed and/or in electronic form is available through a variety of secondary products and services which are organised and stored in libraries and information centres.

A normal feature today to access mass media information is through the Internet, and websites. Mobile phones also have become another effective media to provide accessibility to and availability of information as the Internet does. All mass media are inexorably intertwined with advertisements and involve public relation activities.

Advances in IT are continuously being applied in all the programmes of mass media namely, print, radio broadcasting, TV, motion films and in every other form of electronic media. Indian mass media has a fine record of history. Currently they have expanded phenomenally in all directions. An overview of the Indian scenario is presented in this Unit. Persons associated with mass media are intellectual, managerial and technical people having a variety of skills and experiences. In the following sections of this Unit, we will make a detailed study of all these aspects mentioned above.

7.2 MEDIA

In this Unit, media refer to the mass media communication such as newspapers, magazines, radio, television, recordings of audio-visual aids like CD, DVD, etc. which are vital sources of information of mass communication. The impact of media has totally transformed human life in modern societies. They are not just the carriers of information and knowledge *per se* but also the means by which they have been communicated are the main cause of the sea changes in society, which is heading towards a 'Knowledge Society'. However, in this Unit, we are confining ourselves only with mass media communication.

In this context, it is appropriate to recall the slogan, “Medium is the Message” coined by Marshall McLuhan. This message implies that the carrier of communication whether human voice, image or text – influences the message, the sender, the audience. Today, every human intellectual output can be carried through a complex, integrated, intermixed and interactive system resulting in the integration of data, text, image, voice by the application of advances in ICT that are the root cause of societal changes. We are confining ourselves in this Unit to mass media, and their ramifications as important information sources.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

1) How does media influence communication and cause changes in society as conceived by McLuhan?

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7.3 MASS MEDIA

Mass media is defined “as the institutions of public communication that have as their physical channel of transmission a mass medium – television, radio, motion pictures, newspapers, books, music and recordings. It is these institutions and organisations that use print and electronic devices to produce contents for use of audiences. When mass medium becomes the channels in mass communication, they bring three characteristics to the process namely:

- 1) A complex technology becomes involved;
- 2) The velocity of the process increases in order to reach a huge audience; and
- 3) The amplitude increases because the potential to be read, heard or viewed, is powerful.” (Hiebert 1988)

Mass communication is the process whereby mass-produced messages are transmitted to large, anonymous and heterogeneous audiences. The word ‘mass’ refers to people in a large number. The large number, usually, indicates or implies mostly to the lower strata of society who are unlettered or ignorant in many ways. But in today’s context, ‘mass’ includes every section of the society, irrespective of their status or knowledge perceptions. Apart from laypersons, they include a wide audience of scholars, professionals, scientists, artists, musicians, in fact, every group, young and old. Mass media serve the interests of individuals and groups. It is so because today mass media offer services informing people about current events, and every significant natural phenomenon and such other information of common public interest.

Mass media generate a vast amount of information and knowledge. Apart from the volume generated, the variety, every subject of human interest, programmes mirroring life of societies, reporting every natural phenomena, etc. make the generated information a virtual treasure. In fact, mass communication appears to be giving a running commentary of human events and activities that are continuously recorded to make them invaluable sources for studying the contemporary life of a society and are worthy of preservation for historical studies.

Self Check Exercise

Note: i) Write your answers in the space given below.

ii) Check your answers with the answers given at the end of this Unit.

2) What does mass mean in today's context of mass communication?

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3) Why is information and knowledge generated by mass media worth preservation?

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7.3.1 Characteristics, Scope and Functions

Mass media offer a current awareness service, e.g. instantaneous service, like reporting of current events and activities by radio and television. Radio and television are faster means of communication than the print media such as newspapers. They are inextricably so interwoven with modern society that one cannot survive without the other. They are purveyors of information; providers of pleasure and enjoyment; changers of perception and behaviour.

The newspaper industry is in the private sector and enjoys considerable freedom. It is regarded as the *Fourth Estate* that shapes, influences, and indirectly govern public affairs in a democratic set-up, although it has no constitutional authority to control the affairs of a state.

There are instances in recent years where mass media, including the press, have played a vital role in delivering justice. There have been a number of examples wherein the mass media have been instrumental in creating public opinion about several criminal cases, which has led to speedy justice. Thus, media play an important role in publicising cases which require public attention. All media are expensive and need huge organisations to collect, process, formulate and disseminate information, views, entertainment to enormous, scattered, heterogeneous audiences simultaneously.

They encompass almost all conceivable subjects to include everything of interest to the audiences such as news of current events and activities, art and music, language and literature, science and technology, business and industry, travels and tourism, transport and communication, computers and telecommunication and so forth.

Information contained in mass media has very important archival value, as they are invaluable primary sources for recording contemporary history. Their functions are to inform, educate, instruct, motivate, persuade, influence, mould or shape, entertain and sell information to large audiences. They generally absorb intellectuals and researchers and persons of academic perceptions and scholarship, besides expert technologists, technicians and managers and professionals.

Self Check Exercise

Note: i) Write your answers in the space given below.

ii) Check your answers with the answers given at the end of this Unit.

4) What are the characteristics of mass media?

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5) State the type of persons involved in mass media.

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7.3.2 Positive Influences

Information disseminated by mass media has a direct impact on society. An account of its extensive reach, particularly to urban audiences, mass media have become so central to society that it is inconceivable that without mass media today, societies can function. They inform and shape social life, particularly the younger generation, to develop into good and responsible citizens. Their impact and influence is positive if they are able to fulfil the information and entertainment needs of people in accordance with the norms of social values and culture.

By and large, the information disseminated by mass media and their programmes is positive. They are pro-communal harmony, anti-environmental pollution, support national integration, anti-drug addiction, advocate health care and safety, demonstrate benefits of yogic exercises for healthy life, create peace for economic prosperity, anti-terrorism and social evils, generally educative and instructive, giving helpful guidance to children and young adults, etc. As a matter of policy and principle, information dissemination and the programmes of mass media conform to government regulations, code of ethics and legal norms.

7.3.3 Negative Influences

The foremost importance in reporting is that the information reported is collected from authentic and credible sources, and nothing should ever be misinterpreted. But this principle is quite often overlooked.

The very nature of mass media being persuasive, may result in the media transcending ethical codes within which they are expected to perform and may become biased, manipulative and propagandist. It is not uncommon for a political party or an agency to manipulate reports in their favour, which would indicate political control. Biased reporting can occur to obtain a favourable result. A journalist or a reporter may bring her/his personal preference on an issue to support a political party. A particular event or celebrity may receive undue importance and set youths to incorrect practices. It may present ostentatious lifestyle, which may inculcate wrong ideals amongst youngsters.

Unnecessary sensationalism of an event of daily life may magnify its importance creating fear and panic among the public. Wrong interpretation of news may even blow up things out of proportion and create unrest or even violence at any time and place and pose a law and order problem. At times, a particular event or news item may receive too much attention because of the lack of important news to report. This would again present unnecessary and avoidable tension amongst the public.

As long as the mass media give what people need or want, they remain a potent force in society. But the moment they, with acquired power and control, give what they think people want, they become manipulative and start working towards influencing the minds of people, leading to indoctrination. This applies to every programme they present. Therefore, if mass media are to become credible instruments of social change, they have to function with restraints and responsibility in accordance with established regulations, codes, conventions and practices.

We have studied, so far, the general aspects of mass media and their ramifications, indicating their value as important sources of information.

Self Check Exercise

- Note:** i) Write your answer in the space given below.
 ii) Check your answer with the answers given at the end of this Unit.
 6) Briefly state the positive norms of mass media.

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7.4 COMPONENTS OF MASS MEDIA

In this section we shall study the components of mass media in detail. Mass media, both print and electronic, comprise predominantly the following:

- Print Media
 - Radio Broadcasting
 - Television
 - Recordings on such as CD, DVD, etc.
 - Motion Films

7.4.1 Print Media

Print media of mass communication comprises of newspapers, popular magazines and periodicals, trade journals, posters, leaflets, books, in particular paperbacks and other printed materials. Of these, newspapers, magazines and periodicals are most extensively used.

Two notable developments in the Indian context witnessed in newspaper industry are commercialisation and the introduction of information and communication technologies. Beginning from the fifties there has been a rapid growth of newspaper industry to withstand the challenges and fierce competition from the newer electronic media, particularly, radio and television. They have adopted the latest information and communication technology in their production process, to speed up their production and circulation and improve their physical get up. This is required to face the competition of the electronic media. On account of commercialisation, the competition among the newspapers themselves has been stiff which has not only aided their sales but also improved the quality of production.

Daily newspapers are the most predominant ones among the print media; they have large circulation and wide audiences. In India, newspapers are published in most of the regional languages and they also have very large circulation. Some of the top newspaper agencies publish their dailies from different cities in multiple editions to focus attention on regional news, events and activities. Sunday editions carry weekly magazines, special advertisements, and other supplements.

Scope, Coverage and Functions

Large newspapers have their own mechanisms to get news through their own reporters from different parts of the country and also from foreign countries, in addition to their contracts with news agencies, (national and international), for the supply of news and information. Almost all newspapers have their websites to get instantaneous news round the clock. They are also accessible through the Internet.

Everyday the dailies publish one or more supplements on specific topics such as education and training, economics, industry, business and trade, science and technology, sports and games, art, entertainment, and music. There are also newspapers exclusively specialising in economics, sports and games, films, TV programmes, music, business and trade, employment, government memoranda and orders and the like.

The print media, newspapers in particular, have the greatest advantage that they can be used with ease and convenience. Newspaper can be easily carried and can be read anywhere, at anytime.

Generally, the daily newspapers carry news, commentaries and analysis on political, economic, social topics on current events, personalities, feature articles of subjects of current topical interests, general information on weather, business information, share market data and analysis, local programmes and events, sports and games, films and such other topics of public interest. Editorial on current specific topics are a daily feature, except on Sundays, which have a very special value as they express views and comments in consonance with the general policy of the newspaper.

Weekly editions of newspapers carry feature articles on various topics of public interest contributed by well known journalists and column writers. Reviews of films, books, arts, paintings, music, etc. are also published. There are review articles which are contributed by specialists in the field and hence are very authentic.

For those who prefer light reading material, there is a great variety of jokes and humor, fun, cross-word puzzles, quizzes, comics and satire, including something that interests the children. We have already mentioned that newspapers as a mass media, function to inform, educate, instruct, motivate, influence, persuade, entertain, etc.

As sources of information, newspapers have the highest archival value as they form the primary sources for recording contemporary history. Modern libraries and information centres preserve them in microforms and /or in digital form. They are virtually current awareness services, reporting current events and activities all round the world, carry news on every significant natural phenomenon and focus on a wide audience.

Among the mass media, newspapers have the highest credibility, among the other mass media, in terms of authenticity, collecting news and information from dependable sources, comments and analysis current events contributed by persons of reputation and eminence in public affairs.

Self Check Exercise

Note: i) Write your answers in the space give below.

ii) Check your answers with the answers given at the end of this Unit.

7) What are the components of mass media?

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8) What do daily editions of newspapers usually carry?

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Constraints

Some of the constraints of newspapers are: 1) only literates can make use of them; 2) they are highly urban-based, nothing much of interest to rural folks; 3) prices of newspapers are not within the reach of the most economically weaker section of the society. As a result, their circulation suffers considerably. However one interesting factor is that, there is a practice in India among the economically weaker sections, a literate person reads newspaper columns aloud before a small group of six to eight persons, thus increasing the readability number of newspapers. This practice compensates for low circulation statistics improving the readability factor slightly.

Structure and Management of Newspaper Institutions

The newspapers institutions are well structured and well managed through a complex organisation and functioning. Usually the operations are divided into four major blocks, viz. news and editorials, administration, business, and production.

Although the most important of the four blocks is the editorial wing in our context, the other blocks are equally important. The business manager is in charge of promoting, selling, and proper distribution of newspapers. Advertisements are the vital lung of all mass media, without which mass media cannot function. A large share of the pages of newspaper carries various types of advertisements. The business manager is in charge of advertisements. The administration takes care of the maintenance function as well as finance and personnel management. The production block takes care of printing the newspaper and to maintain its physical quality.

As noted earlier, newspaper institutions have a well-qualified staff. They comprise of journalists with good academic and professional background and high proficiency in writing reports with speed and fine drafting quality. There are language and content editors, external column writers who write regularly, high level production staff and managers. These persons have special skills and constitute very good human information sources. Most of the large newspaper organisations have a library and an archival unit. Some of newspapers have a well organised indexing and retrieval systems of their own newspapers for internal use.

Application of Modern Printing Technology

As already mentioned, large newspapers have been applying computer-based printing technology for production. Computer typesetting, desktop publishing software for layout and page making, introducing colour and elegant presentation, transferring the set matter to sensitive metal plates and using these plates for printing are the modern means of production. Thus the production speed has been achieved, in a clean and spic and span office environment with much less noise and the printing block has a very different look from the earlier methods and days of printing. Modern means of transportation and distribution have also helped in speedy circulation.

Magazines and Periodicals

Another class of print media of mass communication is magazines and popular periodicals, which also reflect the functions and activities of societies all over the world. Magazines and periodicals are popular publications issued periodically, usually in paper cover, typically containing stories, essays, poems, etc. by many writers, they may be general, political, economic, social and other subjects of public interest or in specifically in a subject like business and trade, sports and games, music, cinema, religion and philosophy, etc. They can be specially oriented towards subjects of interests of women, children and men. Most often they are of light reading nature but periodicals like *Economist* carry writings of serious nature, which are even cited in learned periodicals. Typical examples in English are *Readers Digest*, *Life*, *Time Magazine*, *Fortune*, (US Publications) *Economist*, (England) *India Today*, *Outlook*, (Indian), etc. which are very popular and have wide circulations.

Magazines and periodicals comprise mostly of weeklies, monthlies but also include bi-monthlies, quarterlies. Special annual editions are not uncommon. These types of publications are in every Indian language and have regional orientation and widely read. They bring out festival editions, which may be their annual features. Many of the house journals and newsletters of institutions are also of this nature. These types of publications have increased phenomenally in recent decades and also have wide circulations and various types of audiences, as newspapers. They are also valuable source materials, for contemporary historical writings.

Modern printing technology is used in the production. They are physically quite attractive, printed colour photographs and pictures on glossy paper with beautiful outer covers. They are distributed through their agents in different parts of the country and usually displayed in news-stands where single issues can be bought. They are also carry advertisements which support their publication costs.

Many of these magazines and periodicals are indexed in secondary publications and are available in the electronic form also. Most of them have their websites and can be accessed through the Internet. They have archival value as newspapers are preserved in libraries and information centres in microforms and/or digitised forms.

Self Check Exercise

- Note:** i) Write your answer in the space given below.
ii) Check your answer with the answers given at the end of this Unit.
9) Why are periodicals and magazines considered useful information sources?

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7.4.2 Radio Broadcasting

Electronic media, comprising of radio, television, satellite TV, cable TV, motion films, recordings, etc. is distinctly different from print media, as it provides news and information instantaneously. It is essentially entertainment media but has many other features, which are both instructive and informative. It carries information across distances and to the masses that are geographically, culturally, intellectually and emotionally separated from one another. It is the fastest media much quicker than print media. Its impact on audiences is decisively much greater than print media. In this section, we shall discuss the characteristics, scope, coverage and impact of radio broadcasting. It is also a valuable sources of information of mass media as much as print media.

Characteristics, Scope and Functions of Radio Broadcasting

The radio is an aural medium; there are no visuals. It is a sightless medium. Its impact, therefore, is less than visual media, very much less than audio-visual media. Its success has to be achieved only through voice of the announcers, newsreaders, and performers in a play, music and sound effects. Notwithstanding these limitations, radio has been a success before the advent of television.

As sound and voice of participants in the various programmes of radio broadcasting are the physical aural media, persons with voices suitable for broadcasting are very carefully selected through audition tests. Radio listeners must be aware that, in the past, some of the best newsreaders, announcers, anchor persons of programmes, and such other participants who have excellent voice, articulation abilities and such other skills have left a lasting impressions.

The appeal and impact is achieved through voices suitable for microphones, delivery with voice modulations, accents and emphasis on words and phrases, tonal variations, sensible pauses. These are some of the essential skills required for good broadcasting. With good, artistic and musical sound effects, some of the radio programmes have been hits.

The language of the scripts is another important characteristic of radio programmes. The contents have to be user friendly, written by persons who have a good command over the language and written in an appealing style as required in different contexts.

A radio set or a transistor is far cheaper than a TV. The portable quality of transistors makes it possible to listen to radio programmes anywhere, at home, at work places, in office premises, at a picnic spot, at bedside, etc.

Radio is a medium of immediacy. It can report events almost instantaneously, as they happen. The reporting staff of radio station can reach the place of events immediately and start disseminating news of the event. It takes more time for TV crew to reach the spots of the events and set everything to take shots and operate. Radio is, therefore, much quicker in reporting such events.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

10) Describe why the radio broadcasting has been more successful vis-a-vis TV programmes.

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Scope, Coverage and Functions

The portable radio set has become a constant companion to farmers who listen to farm bulletins; workers for recreation; travelers for various information and such others. Because of low costs of radio transistors, broadcasting reaches quite far and wide, particularly to the poorer sections of people, living in remote places. Programmes of right mix of news, music, talks on specific issues public interests, running commentaries on sports and games events, etc. interspersed with well addressed commercials are quite successful in attracting listeners.

Radio stations broadcast news round the clock, give periodical summaries of news, reviews and analysis and critical comments on current events and activities, entertainment programmes of various public interests like music, serials, plays, several programmes of interest to special groups such as women, children, farmers, industrialists, and many others. Thus, broadcasting has entertained listeners for several decades from the beginning of twentieth century.

Like newspapers, radio as a mass media, functions to inform, educate, instruct, motivate, influence, persuade, entertain, etc. to the extent it can compete with other media, possibly with greater effect on the audience than print media.

Like advertisements sustain the newspaper industry; radio broadcasting also thrives on numerous aural advertisements which are quite attractive because of the sonorous voice of the speakers.

Structure and Management of Radio Broadcasting

There are three major components in the structure and organisation of radio viz., the local station, the networks and the programme execution, operations and presentation. There are a variety of radio networks and agencies providing an array of programme services, including music, sports, features, and commentaries. Like the newspaper, the structure of radio broadcasting organisation is complex, requiring a variety of expertise of several specialists and professionals, specialists in radio journalism.

Radio broadcasting services are offered mostly by private sectors. Until recently, in India, Akashvani was the only government sector involved in this business, but now private sectors are also offering broadcasting services, introducing the element of competition to market their services.

The personnel in radio broadcasting include producers, directors, programme specialists of different categories besides artists, musicians, scriptwriters, engineers and technologists, newsreaders and commentators. Invariably, it is teamwork and astute team management in terms of producing, best programmes. Many external experts and professionals contribute in programme planning, execution and production.

The use of satellites for programme distribution, multimedia access through the Internet and websites, the rise of broadcast technology particularly digital audio broadcasting and its widespread use not only have added to programme options but have also improved radio stations ability to give quality, besides controlling costs and stay in media business despite fierce competition from TV.

Archives of radio stations have stocked a very large number of recorded cassettes and CDs, of speeches of eminent persons, programme events, music, etc. providing invaluable source materials for contemporary and historical studies and organising a variety of useful programmes of past activities.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

11) State briefly the archival value of radio broadcasts.

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7.4.3 Television

Of the electronic media of mass communication, the most powerful and influential media having impact on society is the Television (TV). Borrowing certain features from the earlier media of communication like the theatrical stage, the film and the radio, it has amalgamated them into a new media with its own identify. For example, from stage it has borrowed movement, from the film the camera and from the radio the microphone, integrating all these into a unique medium, quite different from the other media, thoroughly telegenic i.e. most suitably attractive to be displayed on the screen. In nature, in idiom of expression and receptivity, arithmetic communication, it is distinctly different from the other media. This section deals with some of these matchless characteristic features of TV, its scope, coverage and functions.

Characteristic Features of TV

Television occupies a dominant position in our lives with its multi-dimensional attractive features. Despite its dominant position in our lives, it is still young, fast growing and developing with the rapidly advancing information and communication technology. TV's sweeping dimensions can be gauged by the lively pictures it brings with camera, man walking on the moon, visuals of planets, telecasts of living creatures under sea or ocean, magnificent stars in the sky. We are able to see live telecast of Gulf War, natural disasters like earthquake or tsunami, terrorists' attacks all over the world, world cup soccer or cricket played in any part of globe and other events and activities almost instantaneously. People who could never know or even imagine the affluence of western life, are able to witness through TV the amazingly rich life of people there. Eminent persons of the world, their public performances and speeches are heard daily by the ordinary folks of villages. Thus, TV impacts its audiences so strongly that it has led to many societal changes both desirable and undesirable.

Many of the TV programmes are highly informative, instructive, expands our perceptions and knowledge, and indeed very educative. These positive features could be used effectively to change the entire mode of learning, making people more knowledgeable and contribute to better living conditions. TV entertainment features are numerous and people are glued to TV to view soap operas, serials with various social, and cultural themes, music, classical and light, various types of dances, quiz programmes for young persons and many others. Interestingly, TV programmes are so attractive that have made people even neglect their important responsibilities and commitments to give exclusive time to watch TV. All age groups watch these programmes, without the distinction of gender, although every group has its own choices.

To keep well informed of current events and activities, there are round the clock news bulletins, news analysis, interviews, panel discussions on political, economic and social issues, live telecasts of various tournaments of games and sports. Thus, these kinds of programmes are endless, covering practically every subject of human interest. Like the newspapers and radio broadcasting, TV functions to inform, educate, instruct, motivate, influence, persuade, entertain, etc. with much greater force of impact on society than either newspapers or radio.

TV Channels

There are hundreds of TV channels, telecasting twenty four hours, seven days a week (24X7). In English language alone, there are scores of channels operating in India, with sub channels exclusively devoted to news, movies, serials, sports and games, etc. The programmes of these channels are listed in the daily newspapers for viewers to make their selective choices and prepare their schedule for watching them. Besides these English channels, there are language channels almost in every Indian language, more than one, in fact, making it bewildering for the viewers to choose from to make their watching schedules. These language channels also have their sub channels devoted exclusively to news, serials, motion films, etc. Apart from these types of channel distribution, there are English channels specialising in world news, wildlife, cartoons, fashions, life style, movies, sports and games, real estate, etc. Some of the popular channels of this class are NDTV, BBC, National Geographic, CNN, ESPN, Zee TV, Sony TV, and such others.

Commercialisation of TV is in its zenith with advertisements forming a major share of the time of programmes, in fact, in every TV show, including news, nearly fifty per cent of its time is given to advertisements. Some of the live telecasts such as Soccer Leagues, World Cup Tournaments, Cricket Twenty 20, One Day Internationals are money spinners for some of the TV channels. As a result of commercialisation of TV, there is a fierce competition among channels. Until recently Doordarshan had the monopoly of TV in India but now a number of private channels, English and language ones, besides the international channels, have come up, posing a severe challenge to Doordarshan to compete in the market.

Cable TV

Cable TV is another dimension of TV media with advances in ICT. Satellite and fiber optics communication have opened up to viewers to a number of internal and external TV channels. Cable TV is operated by linking the viewers' TV sets through cables to a common antenna. It is operated through a dish antenna and from a control room. The dish antenna, placed in a particular angle, can catch signals from broadcasting services like Doordarshan or foreign services like Star TV, CNN, BBC, MTV, Prime Sports, etc. These broadcasts can be relayed through cable to individual customers of a cable operator. Cable operators also provide what is generally called 'domestic TV'. In this service, they show films and other programmes according to the demands of their customers. The customers are charged for laying the cable and also a monthly fee. The fee or rent would depend on the cost of providing the service, quality of the service, number of channels made available to customers and such others.

Cable TV has become so popular among viewers that along with video cassettes, it is increasingly being used by political parties, especially during elections. Industrialists, business persons and professionals like medical doctors, architects, consultants and such others also have started using these media.

Non-Broadcast TV Channels

In the international context, there are also non-broadcast television channels. Educational institutions were among the first users of non-broadcast television, using video to communicate both internally and externally. Business and industry

are major users of non-broadcast video. Some of the other institutions in non-broadcasting TV are government agencies, social service agencies, professional organisations, production houses, medical and health organisations, religious groups. The Red Cross has studios in Washington D.C. (USA) where it produces a variety of tapes on such topics as blood donation and disaster relief. Hospitals, clinics, medical schools, and individual physicians use these video programmes in numerous ways. Plastic-surgery technology is documented by a hospital in Springfield, Illinois (USA) for distribution to other hospitals and surgeons. Despite increasing competition and criticism, television today is a huge, complex, expensive, continuous and competitive medium. It is society's mass entertainer, mass informer, mass persuader, and mass educator. It is a universal medium.

TV Archives

The information and knowledge generated by TV is a veritable source of information for all kinds of contemporary writings such as political and economic analysis, consolidation of many current events and activities, trend reports in many fields, etc. Archives of TV channels, TV networks like Doordarshan and others are mine of information source for contemporary and historical studies.

The kind of expertise, special knowledge and skills required to produce captivating, informative, instructive and knowledgeable TV programmes can be easily imagined. Designers, developers, scriptwriters, technicians and technologists, artists, musicians, photographic artists, camerapersons and numerous other specialists involved in TV are invaluable resource persons.

7.4.4 Recordings on such as CD, DVD, etc.

Recordings here refer to audio, video and audio-visual reproductions on magnetic tapes or discs as well as on laser tapes. They are all part of the home entertainment environment which gives consumers direct control over what, where, when they view or listen to them.

Among the many record media of mass communication, are the video cassettes, CD-ROMs and DVDs (Digital Versatile/Video Discs) that are most influential. They are highly user friendly and closely linked with individual and group use. Most of these audio-visual media are designed with great care and the audio support enhances their value to a very great extent.

The production of multimedia CD-ROMs and DVDs is a complex and intricate affair. Many types of specialists are necessary to produce a good video programme either for entertainment, news commentaries or analysis, learning kits, course materials for distance education and many others. Screen scriptwriters, design and development experts, production and marketing experts and a host of others are normally involved in the production of audio-visual items.

The technologies applied are varied and complex. The complexity increases particularly with the multimedia used for producing audio-visuals. The marketing of these types of media is again a work of specialists. They are commercial ventures of high investment in terms of finance, manpower of quality and production.

CD-ROMs and DVDs are extremely valuable for archival purposes as sources of information. They occupy very little space. Reference materials like encyclopaedias and other types of reference works are preserved in these media and stocked in libraries. There are also private or commercial video libraries that supply CDs and DVDs on hire, especially films.

It is said that the media is changing fast and will be more powerful in the future than it has been in the past, mainly because it puts control and time in the hands of the consumer.

Self Check Exercise

- Note:** i) Write your answer in the space given below,
ii) Check your answer with the answers given at the end of this Unit.
- 12) Why are TV channels, cable TV, recordings are so powerful in influencing society as compared to other media of mass communication?

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7.4.5 Motion Films

Motion films are an important medium of popular entertainment because of their wide mass appeal and influence on society. Combined with TV, films constitute the most powerful media that impacts every section of the audience in all possible ways. In India, with all its cultural and linguistic diversities and the problems of illiteracy, films are the most powerful of all media, cutting across the linguistic and cultural diversities with a universal emotional language. Commercial cinema is all charming and romantic and fanciful. The usual ingredients are songs, group dances, crime, fights, melodrama and comedy, all bordering on imagination and unreality. The idea of film makers, in general, is to prepare a show of popular entertainment to ensure financial success and box office hit.

Characteristic Features of Motion Films

Although every mass media is a team effort, a film is the most collaborative medium of much bigger magnitude than any other media. The huge financial investment, the number of persons involved, time required for shooting a film, complexity in production and distribution make it totally different from other media.

Hundred of persons collaborate to make a film in its production process. The group includes producer, director, story writer, dialogue writer, actors both male and female, specialist persons in various aspects such as art, music, dance, fights, illumination, sound, costumes, make-up, scene set up, cameras, etc. in making a film.

Thus a motion film is a product of interaction between technical and artistic persons. It uses many devices like cameras with several lenses, microphones, dubbing machines, editing or cutting machines, projectors, mixers, sound tracks, trolleys to mount cameras, celluloid, laboratory equipment, etc. The combined work of artists and technicians result in a sophisticated film of quality.

The director of a film is central to the success of a film. The director's artistic, aesthetic and technical skills will determine the quality of the film both in terms of its production and actors' performances. Some of the celebrated among film directors, to mention just a few are Hitchcock, Cecil D'Mello, in the international context and Satyajit Ray, Bimal Roy, Balachander, Mani Ratnam in the Indian context.

Apart from the entertainment value of films, it has also become an art medium today, just as painting, sculpture, architecture, drama, poetry and music. It has become, in fact, a discipline in its own right, in which scholars and intellectuals participate in its growth and development. Film training institutes have developed, treating film production as an academic and professional discipline.

Today films are considered an effective medium for development. Films can contribute modernising a traditional society into a modern society by helping to change the attitudes of people relating to work, gender, religion, customs, harmonious relationship among communities, beliefs, etc. Films can promote national integration by producing well thought out and relevant themes, proper direction and performance of artists.

Scope, Coverage and Functions of Functions of Motion Films

The scope of film production includes almost all subjects of human interest. Films have a universal acclaim and are a versatile means of communication. They include not only feature films for entertainment but also documentaries and newsreels. Feature films range from the sublime to the ridiculous to represent films of artistic and aesthetic tastes appealing to sophisticated intellectuals but also not so artistic ones to cater to the tastes of ordinary folks for fun and entertainment. In the Indian context, the coverage of films comprise mythological, religious, war, social, historical, patriotic, romantic, political, humorous themes, catering to the tastes of different kinds of audiences. With photographic tricks, camera lenses, shots from various angles, sound and light effects, music and dialogues, fight sequences, films create enchanting and exhilarating experiences and appeal emotionally to the audiences. Social and political films reflect contemporary events and activities of real life. Like the newspapers, radio broadcasting, TV, films also function to entertain, inform, educate, instruct, motivate, influence, persuade but with far more greater impact on the audiences than any other media.

Millions of cine goers simultaneously watch a film from different parts of the country, in cities, in towns and villages, as any number of copies of films can be made. A film can be transferred from celluloid to video cassette. The video cassette can be played at home through the video cassette recorder (VCR). The cable TV operators can transmit the film through a TV channel and a large number of their customers can view the film. So, a film can be viewed by a large number from different places at the same time. A film can also be seen again and again, any number of times. The inevitable result of watching films at home using VCR has reduced the number of people watching films in cinema halls which has naturally hit film's incomes.

Documentary Films

Documentary films have been universally recognised as another category of art films. A number of documentary films have been produced in India by the Films Division of the Government of India on themes of cultural interests and technical and informative films on different subjects. Documentary films have been produced on development projects and achievements, on persons of eminence in political, social, and cultural fields. Reputed producers and directors have brought out documentaries and short films on current issues of public interest, even in areas of controversial nature. Many of these documentaries have been screened at international film festivals and have been received well.

Film Industry

Although the film industry employs thousands of people, makes huge financial investments and yields lakhs of rupees to the government, it is still not recognised as an industry and not subject to the laws of industry. However there are a number of employees unions, guilds, associations which take care of their respective interests. The film industry is totally in the private sector with considerable freedom but subject to the censorship of the Central Board of Film Certification.

The Film Institute/Film and Television Institute of India houses the National Film Archives of India which stocks a number of Indian and foreign films. The training courses conducted by the institute have designed courses on the lines of the reputed French Film School in Paris. The students get a thorough grounding in the techniques of film production and also in the history and aesthetics of cinema. The National Film Archives is a great source of information and knowledge on all aspects of films which certainly is a great treasure for contemporary and historical studies on Indian social life and culture.

To sum up, national and international films, documentaries and short films are important components of mass media. They involve latest technology and an array of persons of various categories of technologists and technicians and intellectuals, actors and actresses, with supporting casts, camera persons, make-up artists, sound and illumination experts, lyricists, musicians and music directors, orchestra artists, editors, production experts, directors and a host of other categories of specialists. Excellent studios exist for indoor shooting. Outdoor shooting experts constitute another group of persons involved. The financial outlays in these types of media are almost astronomical and the market is highly competitive. Educational and training institutes and National Film Archives provide the necessary infrastructure for manpower development and supporting resources.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

13) What are the special features of films that make them different from other forms of mass media?

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7.5 ACCESSIBILITY AND AVAILABILITY

From the foregoing account, it is quite evident that mass media generate enormous amount of information and knowledge that are invaluable and versatile sources of information for contemporary and historical studies. Newspapers carry quite a lot of ephemeral information that may not be of much value. But nearly fifty per cent of information published in newspapers is worth preserving and useful for different studies. Similarly, magazines and periodicals also carry valuable information that is worth preserving.

Radio and television channels produce almost a running commentary on the life of the people in a variety of subjects. With the plethora of channels and vested interest of some of the channels, the information generated may lack credibility for preservation because of biased and distorted views. None the less, they broadcast a variety of programmes that reflect contemporary life of people and valuable to preserve at least in part. Live telecasts of current events and activities are of great value.

Films, as described earlier, are a mirror of contemporary life. They are produced in large numbers in India. The National Films Archives stock them for posterity. The films produced in the earlier decades of the twentieth century compared with current films will show the gulf of difference between the two in terms of the life of the people in every aspect then and now and advances in technology.

Therefore accessibility to and availability of mass media information and knowledge is an important national responsibility. Although there is no bibliographical control at the national level on the mass of information generated, many libraries and archives stock these materials and service them to scholars, researchers and students. Newspapers are preserved in microforms or digital forms in national libraries, university libraries and research libraries. Considering their value as records of contemporary human life, many countries have legal regulations for depositing books and newspapers and also motion films. Indian Delivery of Books and Newspapers Act has the provision for depositing books, periodicals and newspapers in the National Library, Kolkata, and three other libraries namely, Central Library, Mumbai, Connemara Public Library, Chennai and Delhi Public Library.

Newspapers like New York Times, London Times and some of the Indian newspapers like The Hindu, The Times of India and others have their own indexes in their archives. Newspaper clipping service is provided by some libraries and information centres for their internal users on specific topics.

Internet

The main focus of interest today is on the Internet for access to and availability of information and knowledge on any subject. Mass media is no exception. The Internet, as we all know, is a network of networks. Specifically, it is worldwide, publicly accessible, interconnected computer networks that transmit data using the standard Internet Protocol (IP). It consists of millions of smaller domestic, academic, business, mass media and governmental networks which together carry various information and services, such as electronic mail, online chat, file transfer, and the interlinked web pages and other documents of the World Wide Web. It enables distance learning through its new pattern of flexibility, contributing to reshaping of the knowledge environment and issues of access within it.

Contrary to common usage, the Internet and the World Wide Web (WWW) are not synonymous. The Internet is the system of interconnected computer networks; the Web is the contents or the interconnected documents, linked by hyperlinks and Universal Reference Locators (URLs). The WWW is accessible through the Internet, along with many other services including e-mail, file sharing and other such facilities.

The Internet is so versatile that it is fast becoming the centre of mass media. Every mass media, the newspapers, magazines and periodicals, radio broadcasting, television channels, motion films, etc. are accessible through the Internet. The Internet provides access to all primary information as well as secondary and/or tertiary information in the print or electronic media. Almost every newspaper Indian or foreign, national and international magazines and periodicals have their own web pages.

The limitations are that access to the Internet is restricted only to those who have access to computers with broadband facilities for using it for their information and knowledge, apart from barriers of illiteracy in India. This barrier is referred to as *Digital Divide* which practically denies the opportunity to access information to a major section of the community because of economic constraints or illiteracy.

Self Check Exercise

- Note:** i) Write your answer in the space given below.
- ii) Check your answer with the answers given at the end of this Unit.

14) What are the limitations of the Internet?

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Mobile Phones

Developments in information and communication technologies (ICTs) while creating digital divide, offer the means of improving information delivery also to a large proportion of illiterate or semi-literate and marginalised communities. In fact, mobile phones are seen to bridge the digital divide in developed as well as developing countries. (Neelameghan,2009).

Mobile phones or cell phones are long-range, electronic devices used for voice or data communication over a network of specialised base stations known as cell sites. In addition to the standard voice function of a mobile phone, current mobile phones support many additional services and accessories such as Short Message Service (SMS) for text messaging, e-mail, access to the Internet and many more. Similar to the Internet, mobile phone is also an interactive media has a wide reach. Practically all the Internet services and applications that exist or to have similar facilities on mobile phones. Many mobile media experts claim that mobile phones have several unique benefits that make it a more powerful media than either TV or the Internet. Mobile phones have the best audience accuracy and

are the only mass media with a built-in payment channel available to every user. Mobile phones are called the seventh mass medium with print, recordings, cinema, radio, TV and computer being the first six. Sometimes it is called the fourth screen, counting cinema, TV and computer screen as the first three or the third screen counting only TV and computer screens.

Prof. Neelameghan in his article on Mobile Phones discusses the role of ICT in networking among people at local, national and global levels, supporting the formation of communities of common interests and practices, sharing and exchanging information through mutual collaboration for common good. He cites research projects conducted in Karnataka which enables illiterates and marginalised communities to get information on their village professions through mobile phone facilities such as SMS and other communication techniques.

It is a common sight in cities and towns or even in villages to note how popular mobile phones are used among small traders and craftsmen in exchanging information in their respective trading and vocational activities. With all its current versatile facilities, and continuing research in wireless technologies, mobile phones would be a much more viable source of communication among farmers in villages, small traders and vocational communities and may break the barrier of marginalising the economically weaker communities and to a certain extent sorting out the problem of illiteracy through vernacular languages.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

15) What are the features of mobile phones that make it a unique physical media for inter communication?

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7.6 ADVERTISEMENTS

Advertising is defined as a paid dissemination of information through a variety of mass communication media to motivate a desired action. Advertisements are not free, they are to be paid for. Space is bought in the newspapers, magazines and periodicals in the print media or in recordings like CDs or DVDs, or time is bought in radio, TV and on the Internet. Through this payment for space or time, information is disseminated. This is not information for communicating information *per se* but for the process of selling or helping to sell commodities and services or gaining acceptance to ideas that may set people to think or act in a desired manner.

Modern advertising has emerged as the handmaid of industry. It is an outgrowth of mass production, mass market, mass distribution and mass communication. It keeps trade and commerce moving and helps the growth of the economy by creating demand for mass-produced goods and services.

Advertisements are very much an integral part of mass media and intimately connected with them today, basically for the following reasons because they:

- provide substantial financial support to mass media and *vice-versa*; the one cannot survive without the other;
- are viewed by many as a significant and rapidly developing industry, its practitioners facing challenges for creative and imaginative thinking to find out new and innovative methods and techniques to expand for occupying a major share of space in print media and time in radio and TV; and
- are a pervasive part of modern culture, a medium, among other things, for the construction of our images as well as of the society, mass media being the only most powerful and versatile avenue to achieve these objectives.

Advertising, publicity, propaganda marketing, public relations are near synonyms with their own shade of differences in meanings. Information disseminated through these methods, may occasionally be distorted, exaggerated, over emphasised but their objectives are to persuade, influence, motivate and/or they can get people to react favorably with regard to buying or selling a product or a service. The objectives of present mass media do not clash with business advertisements as they have a common commercial intent and motive in finding a market for their products and services. Advertisements have a larger share, in mass media, whether print or electronic, particularly in TV programmes, which demands most imaginative and innovative advertising methods for capturing the minds of people to react favorably towards a product or service. As advertisements are part of any programme in TV, radio, and in print media, which earns them a heavy revenue they have to be viewed or listened to compulsorily. The messages contained in advertisements are forms of communication that involve creativity, persuasion and impact. Advertisements carry impersonal messages which are controlled by a sponsor. By controlled we mean that the sponsor who pays for the messages of advertisements, determines the content.

Most of the advertisements are consumer-oriented. But the advertisements of trade, business-to-business, corporate houses are major part of the advertising industry. International advertisements are becoming increasingly important as more and more companies are engaging in global marketing through the Internet and web pages.

Advertisements have the following goals:

- Advertisers are advertising to help their customers to market their products and services;
- Advertising agents are specialised companies that plan and execute advertising campaign for most advertisers. Their work includes creation of advertisements, media planning and research; and
- Advertising media carry advertisements to consumers and mass media are dependent on advertising revenue.

Advertisements are conceived, given preliminary shape, altered and then finally executed. The entire work is a long process that includes situation analysis, setting objectives, evolve strategies and work out evaluation. The situation analysis includes research, leading to a definition of the advertiser’s problem. The objectives of advertisements can range from creating an awareness to urging purchase, motivate and influence to accept a product or a service. Strategies and tactics are actions needed to achieve the objectives. Evaluation is the process of assessing whether or not the campaign achieved its expected goals.

Advertising agencies choose the media through which advertisements can be featured. Newspapers, magazines and periodicals and such other print media, give over 50 per cent of their pages to advertisements. This is particularly so in newspapers those have a huge circulation. Motions films, CDs and DVDs, video and audio cassettes, radio and TV and all other audio-video media provide a proportionately long time for advertisements.

It can be discerned that advertisements invariably require a variety of abilities and skills of the highest quality. Among these, some of the more important ones are imagination and creativity, ability to grasp consumer psychology, especially to design a directed action packed visuals and write effective short scripts to carry the desired messages, choose the right media which would influence or motivate the viewers to buy a product or a service, assess the impact of the advertisements, etc. In the case of audios and videos, duration of advertisements, the appropriate time of presentation, etc. are some of the important considerations. The advertisements for consumer markets will have to be constantly changed to attract attention of the viewers. These specialised types of work are nowadays generally entrusted to advertising agencies, which are carried out by separate departments wherein specialised persons are employed. The converging computer, communication and multimedia technologies are facilitators to the best advertisements.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

16) Why are advertisements an integral part of mass media?

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7.7 PUBLIC RELATIONS

According to the Institute of Public Relations, “Public Relations is the deliberate planned and sustained effort to establish and maintain mutual understanding between organization and its public. It is necessary, for the organization concerned to understand the public and relate the organization’s activities to public interest.”

Today every human activity is invariably organised through institutions. Many of these institutions are massive, such as a corporate enterprises, mass media establishments, both print and electronic, government affairs, etc. and involve in relations with a variety of persons or groups at various levels, with different interests and motivations, with varying economic, educational and cultural backgrounds. The contact organisations also have their own specific goals to achieve and have to conjure up an image to be successful in their endeavors. It is the Public Relation (PR) professionals that build an image for the organisation and sustain it. In this process public relations personnel will have to maintain the best of relations with the media. These involve media meetings at appropriate time, press releases of various types, preparation of special brochures, programmes, for TV and broadcasting, interviews with VIPs, design production of documentaries and so on. In turn, the media have also to maintain the best of relations with their contact organisations, in particular with advertising agencies to generate revenue, and with also their audiences to build their image and also to protect their interests.

For mass media to be successful in their enterprise, it is necessary for them to conduct research programmes to assess their audiences, the messages they spread and the impact of these messages on their different categories of audiences. The PR persons also can involve themselves in these activities. While advertisements promote marketing of goods and services, PR persons prepare the ground for such activities. Obviously, PR activities are vital and necessary for mass media.

Self Check Exercise

Note: i) Write your answers in the space given below.

ii) Check your answers with the answers given at the end of this Unit.

17) What is 'Public Relations'?

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18) Why is Public Relation necessary to mass media?

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7.8 INDIAN SCENARIO

In the Indian scenario, all the different mass media are functioning and operating quite well, generating valuable information and knowledge sources for contemporary and historical studies. All the characteristics and attributes described in the sections and the sub sections of this Unit on mass media are relevant in the Indian scenario without any exception.

Newspaper Media

Indian newspapers, magazines and periodicals have a good record in mass communication ever since they started functioning, in 2009 the total number of registered Indian language and English newspapers and periodicals were 73,146; 8,475 dailies, 383 tri/bi weeklies, 24,544 weeklies, 9,458 fortnightlies, 22,124 monthlies, 4,864 quarterlies and 653 annuals and 2,645 of other periodicity. The largest number of newspapers and periodicals registered were in Hindi, 29,094, the second largest in any language were in English (10,530) (India 2011).

The distribution figures of both Indian and English periodicals are also quite impressive, in fact they are increasing. All these newspapers have adopted modern methods of printing technology and their physical get-up, with colour photographs is quite attractive. Many of the English newspapers have multiple editions published from different metropolitan cities with daily supplements and weekly magazines.

The Press Information Bureau is the nodal agency of the Indian Central Government, that disseminates information on government policies, programme initiatives, and achievements. The Bureau disseminates information through press releases, press notes, feature articles, backgrounders, press briefings, photographs, press conferences, and interviews. The Feedback Cell of the Special Services of the Bureau has a Press Clippings Unit that caters to the requirements of the various ministries. A centralised press clipping service indexes the clippings with keywords with a search mechanism. Some of the university and research libraries stock newspaper files, and have selective newspaper clipping service. Some of the larger newspapers have their library and archives which may have their newspaper indexes for internal use.

Radio Broadcasting

The Broadcasting media, which started with All India Radio (now Akashvani) as a governmental agency in 1920s, has expanded considerably over the years with several areas of information service of public interest. About 100 private channels have been established by the Broadcasting Sector, making it both public and private broadcasting service. Akashvani has stations throughout the country in all the Indian languages, broadcasting news, music, other cultural and educational programmes. Akashvani news is also available on the Internet.

The Akashvani archives at New Delhi and in all its regional centres have a collection of CDs and audio cassettes which is a mine of information on various subjects which are invaluable source of information on current affairs, culture and many subjects of historical value.

TV Channels

Doordarsan has five national channels, eleven Regional Language Satellite channels, eleven Regional State Networks, 24 Regional News Units. Doordarsan has contributed significantly towards the acceleration of socio-economic change, promotion of national integration and stimulation of scientific temper in the country. Being a Public Service Broadcaster, its mandate is to carry through its programmes messages on population control and family welfare, preservation of environment and ecological balance, highlighting the need for social welfare measures for women, children and the less privileged. It is also mandated to promote games and sports and the artistic and cultural heritage of the country.

Doordarsan's monopoly was broken in 1992, when private channels infiltrated into the Indian boundaries through CNN, Star Plus, Zee TV, BBC, Sony International TV, MT, Discovery channel and a host of others. In addition, a number of Indian private channels in almost all the Indian languages and in English were launched. Today there are channels in every segment like music, entertainment, documentary, news, education, sports, comedy business, spiritual, regional and many others. Besides these channels, cable TV is another significant development. Cable operators offer a wide choice of channels and also CDs and DVDs of subscribers' choice of films, etc. The bewildering number of TV channels, generating a huge volume and variety of information, is overwhelmingly large. This poses a serious problem for preserving and retaining them in archives. More reliable and authentic would perhaps be those that are generated by Doordarsan and preserved in its archives.

Films

Indian cinema is almost a century old. Today, the Indian film industry produces more films than any other country. Indian films are very popular in West Asian countries, Pakistan and in many other countries. It remains the cheapest medium of entertainment for the masses. It is in the private sector.

We have described the importance, value and impact on the people of films as sources of information for historical and contemporary studies in some details in the earlier section on films in this Unit.

Film archives are invaluable and vital sources of information on Indian culture society, economy and political life. The Films Library of the Films Division of the Ministry of Information and Broadcasting is a treasure of valuable archival material of India's contemporary history, its heritage and artistic traditions. The total collection of film library, approximately 1.9 lakh items containing original picture negatives, a variety of positives and negatives prints. These items are stored in DVDs and also available in digitised form. The Films Library services are in great demand by film makers throughout the world. It contributes to the vital footage for the production of films besides bringing revenue through footage sale.

Films Division publicise and communicate support to the library collections, through documentaries, news magazines of video films for important campaigns like communal harmony, national integration, eradication of untouchability, family welfare programmes, etc.

The National Film Archives of India (NFAI) was established in 1964 as a media under the Ministry of Information and Broadcasting. The primary center of NFAI is to safeguard the heritage of Indian culture for posterity and act as a centre for dissemination of a healthy culture in the country. Promotion of scholarship and research on various aspects of cinema also form part of the objectives. Familiarising foreign audiences with Indian cinema and to make it more viable across the globe is another declared function of the NFAI.

Apart from its collection of Indian and foreign films, it has acquired over 30,000 film scripts, both Indian and foreign. Besides this, the archive library has a well stocked collection of approximately 25,000 books on cinema published across the globe. More than 100 Indian and foreign journals on cinema are available in the library.

Self Check Exercise

- Note: i) Write your answers in the space given below.
- ii) Check your answers with the answers given at the end of this Unit

19) Write a short note on the Indian mass media.

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20) Briefly discuss the importance and the national function performed by the Films Library and the National Films Archives of India.

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7.9 ICT AND MASS MEDIA

Research and innovation in information and communication technologies (ICTs) and mass media grow in tandem. Advances in ICT give unlimited scope for expansion in mass media in terms of round-the-clock programmes, innovation in design and development of new programmes, world-wide dissemination and transmission, etc. In short, ICT has facilitated a number of developments with far reaching implications for mass media. Every component of mass media, the print, broadcasting, TV and recording media use it with great effect and advantage.

The main focus today is on the Internet as a new, social sphere, facilitating new forms of economic, political and cultural exchange. It is multi-functional and cross-sectoral. It incorporates the World Wide Web and the e-mail. It involves

market, government, education, media and every societal sector. It is multimedia integrating visual, audio and textual material. It enables advances in distant learning, through a new pattern of flexibility, contributing to reshaping the knowledge environment and issues of access within it.

Commenting on the future trends, a media specialist observes, “the early twenty first century *mediascope* is significantly different from 50 years previously. Traditional media has shown resilience in adapting to a changing environment and in utilizing new technologies. For mass consumers the result is greater variety and expanding choice in the ways they access information and entertainment. The expansion and varied means of delivery have stimulated demand for content development for new media. A key question about converging and increasingly interactive media is whether users will gain access to genuinely novel and more varied forms of content – or whether there will be ‘more of the same.’ The pressures of commercialism suggest that innovation and experimentation will be circumscribed by profit-making imperatives.”

7.10 MEDIA PERSONS AS SOURCES OF INFORMATION

From the foregoing account of mass media and its components, it is possible to understand the usefulness of media specialists as vital resource persons in the areas of their specialisation. Some of the important factors that govern mass media processes are:

- Mass media operate in a highly commercial and competitive environment;
- This enjoins quality assurance on the products and services created/generated by mass media;
- Newspapers, periodicals, TV and radio programmes and many other media products of mass media have to operate within a strict time frame;
- This important factor necessitates that some of the media persons have to perform at great speed without compromising on quality; this accentuates their source credibility;
- The time element necessitates the media persons to keep their information ready for use at a short notice;
- Media work is a teamwork and every participant in them should fit into the team at the right place, as the output is a common objective;and
- Media persons’ expertise, experience and knowledge never get properly recorded and hence is not easily available.

Many groups of specialists are functioning in mass media, both print and electronic media. The institutions managing and operating these media may have to be contacted to get the assistance of media specialists as resource persons for any service.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

21) Why are experts involved in mass media considered as invaluable resource persons?

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7.11 SUMMARY

This Unit attempts to give an exposure to information and knowledge generated by mass media as vital sources for contemporary and historical studies. Information and communication technologies offer unlimited opportunities for mass media to produce a variety of services, providing access to current events and activities. Mass media constitute both print media such as newspapers and periodicals, and electronic media that are radio, TV, recordings on audio and video CDs and DVDs, films, etc.

The electronic media, in particular, is very powerful in generating a host of programmes on every conceivable subject of human interest. The contents and messages of these media have tremendous impact on the people and are instrumental in changing the society in a number of ways. Media technologies are the primary cause for the changes in society because they permit multifarious presentations that appeal to the audiences. All these aspects of mass media that include their characteristics, scope, coverage, impact, influence and related aspects are discussed in this Unit. Advertisements and Public Relations (PR) are integral parts of mass media today. The ‘why and how’ of advertisements and PRs are functioning in mass media area described. In mass media a number of group of specialists contribute to the various programmes and activities. These specialists have very special skills and knowledge and can be highly useful as resource persons. The Indian mass media scenario is also presented to give a quick exposure.

7.12 ANSWERS TO SELF CHECK EXERCISES

1) According to McLuhan “Medium is the Message”. It implies that the carrier of communication whether human voice, image or text, digital – influences the message, the sender, the audience. Today, every human intellectual output can be carried through a complex, integrated, intermixed and interactive system resulting in the integration of data, text, image, voice with a single digital information environment by the application of advances in ICT that are the root cause of societal changes.

2) In today’s context, ‘mass’ includes every section of the society, irrespective of their status or knowledge perceptions. Apart from laypersons, they include a wide audience of scholars, professionals, scientists, artists, musicians, in

fact, every group, young and old. Mass media serve the interests of individuals and groups. It is so because today mass media offer services informing people about current events, and every significant natural phenomenon and such other information of common public interest.

- 3) Mass media generate a vast amount of information and knowledge. Apart from the volume generated, the variety, every subject of human interest, programmes mirroring life of societies, reporting every natural phenomena, etc. make the generated information a virtual treasure. In fact, mass communication appears to be giving a running commentary of human events and activities, which are continuously recorded to make them invaluable sources for studying the contemporary life of a society worthy of preservation for historical studies.
- 4) Mass media offer a current awareness service, e.g. instantaneous service, like reporting of current events and activities by radio and television. Radio and television are faster means of communication than the print media such as newspapers. They are so inextricably interwoven with modern society that one cannot survive without the other. They are purveyors of information; providers of pleasure and enjoyment; changers of perception and behaviour.
- 5) Mass media generally absorb intellectuals and researchers and persons of academic perceptions and scholarship, journalists, besides experts, technologists, technicians and managers and professionals.
- 6) The norms should be that information disseminated by mass media and their programmes is to be positive. They should be pro-communal harmony, anti-environmental pollution, support national integration, anti-drug addiction, advocate health care and safety, demonstrate benefits of yogic exercises for healthy life, create peace for economic prosperity, anti-terrorism and social evils, generally educative and instructive, giving helpful guidance to children and young adults, etc. If mass media are to become credible instruments of social change, they have to function with restraints and responsibility in accordance with established regulations, codes, conventions and practices.
- 7) The components of mass media are:
 - Print Media
 - Radio Broadcasting
 - Television
 - Recordings on such as CD, DVD, etc.
 - Motion Films
- 8) Generally, the daily newspapers carry news, commentaries and analysis on political, economic, social topics on current events, personalities, feature articles of subjects of current topical interests, general information on weather, business information, share market data and analysis, local programmes and events, sports and games, films and such other topics of public interest. Editorial on current specific topics are a daily feature, except on Sundays, which have a very special value as they express views and comments in consonance with the general policy of the newspaper.

- 9) Periodicals and magazines carry feature articles of lasting value, depicting social issues, contributed by eminent writers. They are in almost all Indian languages with wide circulations. There are also special periodicals on health, music, business and trade, sports and games, religion and spirituality and in many other subjects of public interest. Their archival value is much more than newspapers. Therefore they are indexed in secondary periodicals, besides being stored and preserved in libraries. These are some of the reasons for their preservation in libraries.
- 10) Radio broadcasting is able to survive the competition of TV for the following reasons:
- Radio has larger audience reach than TV because the transistor set can be carried to any place for listening, even to remote places.
 - Radio sets are much cheaper than TV sets which poor people can afford.
 - Radio stations broadcast programmes for every occupational group like farmers, traders, groups of students, women, children and youth, of their respective interests.
 - Radio stations running commentary of events in sports and games which could be listened to from anywhere.
 - Radio broadcast news, music and such other programmes round the clock.
- 11) Recordings refer to audio, video and audio-visual reproductions on magnetic tapes or discs and on laser tapes. They are all part of home archives of radio stations. The home archives of radio stations have stocked a very large number of recorded cassettes and CDs, of speeches of eminent persons, programme events, music, etc. These sources provide invaluable source materials for contemporary and historical studies.
- 12) Television channels, cable TV and recordings are audio-visual media that are so captivating that make people glue to them. Round the clock programmes, choice of channels, suitable timings to watch the recordings, choice of CDs and DVDs for people through cable operators are some of the attractive features of these media. Live telecasts of events and activities through TV channels keep people informed instantaneously, irrespective of their happenings anywhere in the world. So many specialised TV channels operate on various subjects operate round-the-clock giving incomparable opportunities to know about things. No wonder that this electronic form is much more powerful in influencing people than the other forms.
- 13) Films are on all themes of public interest, highly imaginative and mostly unreal. They deal with various aspects that appeal to the masses. Advances in ICT help in bringing most thrilling shows, which can be seen in theaters as well as in TV channels, cable TV, or at home through CDs, etc. All these factors make the films quite different from other forms of mass media.
- 14) The limitations are that access to the Internet is restricted only to those who have access to computers with broadband facilities for using it for their information and knowledge, apart from barriers of illiteracy in India. This

barrier is referred to as *Digital Divide* which practically denies the opportunity to access information to a major section of the community because of economic constraints or illiteracy.

- 15) Mobile phones or cell phones are long-range, electronic devices used for voice or data communication over a network of specialised base stations known as cell sites. In addition to the standard voice function of a mobile phone, current mobile phones support many additional services and accessories such as Short Message Service (SMS) for text messaging, e-mail, access to the Internet and many more. Similar to the Internet, mobile phone is also an interactive media and has a wide reach. Practically all the Internet services and applications that exist have similar facilities on mobile phones.
- 16) Advertisements provide substantial support to all mass media and vice versa. They are so intimately connected to each other that they cannot be separated. As a result, advertising companies are highly research oriented and supported by the corporate sector to initiate highly imaginative advertisements to sell their product and services. The mass media is the best medium for them to publish their products and services which occupy a major share of pages in print media and shown during prime time by TV channels. No programme, either on TV or radio broadcasting is advertisement free.
- 17) Public Relations is deliberate, planned and sustained effort to establish and maintain mutual understanding between the organisation and the public.
- 18) Mass media has to maintain the best of relations with advertising agencies that provide massive support to mass media finances. Apart from this vital necessity, mass media has to constantly assess the impact of their programmes on the audiences. Their message may have to be revised or adjusted to be in tune with the audiences preference. The PR officers will play a vital role in establishing the best relations with all those concerned.
- 19) In the Indian scenario, all the components of mass media function quite well. The newspapers and periodicals are the oldest, followed by films, radio, recordings and TV channels. The media have tremendous influence on the society and it is well reflected in the life of the people. They have both positive and negative influence on the society. While the print media is operating within many constraints, radio and TV have greater penetrations in the society.
- 20) Both Films Library of the Films Division and The National Films Archives of India have large and fine collections of Indian and international films which form a great treasure about Indian culture and Indian art. They offer a variety of services, making use of their collections.
 - 21) • Mass media operate in a highly commercial and competitive environment;
 - This enjoins quality assurance on the products and services created/generated by mass media;
 - Newspapers, periodicals, TV and radio programmes and many other media product of mass media have to operate within a strict time frame;

- This important factor necessitates that some of the media persons have to perform at great speed without compromising on quality; this accentuates their source credibility;
- The time element necessitates the media persons to keep their information ready for use at a short notice;
- Media work is a teamwork and every participant in them should fit into the team at the right place, the output is a common objective;
- Media persons' expertise, experience and knowledge never get properly recorded and hence is not easily available.

7.13 KEYWORDS

Forth Estate : The mass media other than the constitutional powers, like the legislative, executive and the judiciary of a state that wields influence in the political affairs of a country in protecting and safeguarding the rights and interests of the people of the country.

Masses : In today's context, 'mass' includes every section of the society, irrespective of their status or knowledge perceptions. Apart from laypersons, they include a wide audience of scholars, professionals, scientists, artists, musicians, in fact, every group, young and old.

Mass Media : Mass media is defined "as the institutions of public communication that have as their physical channel of transmission a mass medium – television, radio, motion pictures, newspapers, books, music and recordings".

Media Persons : A host of specialists and experts of different professions functioning in mass media.

Multimedia : Seamless integration of text, image and sound in a digital environment.

Recordings : Recordings here refer to audio, video and audio-visual reproductions on magnetic tapes or discs and on laser tapes.

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BLOCK 3 INFORMATION SERVICES

Introduction

In Block 3 of this course, we will discuss about the variety of information services which libraries and information centres are providing to meet the information needs of various categories of users. This Block consists of the following 3 units:

Unit 8 Information Services: An Overview

Unit 9 Types of Services: Reference Service, CAS, etc.

Unit 10 Literature Search and Database Services

Unit 8 begins with the concept of information, its meaning and how it differs from other terms like data and knowledge. Then a brief account of the process of generation of information is provided. The information that is generated is required by various groups of people at different levels for various purposes. The Unit discusses the information needs of different groups of people and the purpose(s) for which information is required by them. Four types of information needs are identified viz. current, exhaustive, everyday, and catching-up information needs. This Unit provides an overview of various information services provided by the libraries and information centres to meet these information needs. Responsive information services such as reference service, referral service, literature search and compilation of subject bibliographies and document delivery service are described, followed by anticipatory information services like current awareness services, indexing and abstracting services and value-added services. The Internet and the World Wide Web have revolutionised the ways of accessing and sharing information. This Unit discusses how libraries are taking initiative in using this technology to offer customised web-based information services to the library users.

Unit 9 deals with the details of reference and information services offered by libraries and information centres. This Unit traces the development of reference and information services, bringing out the differences between them. Different aspects of reference service viz. need, function, type and its organisation and management are discussed. The advancement in ICT has led to the provision of virtual reference service by the libraries. It also discusses how libraries are using this technology to provide virtual reference service. An insight is provided on the use of the Internet as a reference tool along with its advantages as well as limitations. Amongst information services, different types of current awareness services (CAS) including selective dissemination of information (SDI) services, indexing and abstracting services and value-added services are described. Current awareness services and SDI services are two important services offered by the libraries since long. This Unit discusses the recent trends in the provision of these services using ICT. The advent of e-resources has introduced a new aspect of CAS. Libraries can now deliver links to full-text journals and articles within journals. With this facility the researcher can get access to full-text journal on her/his personal computer and get it printed on her/his desk-top. Many libraries have joined e-journal consortia to have access to computerised databases as well as access to full-text e-journals for their users. This Unit further discusses various electronic CASs offered by the present day libraries like new books alerts, table-of-content alerts, citation alerts, subject alerts, web page alerts, conference alerts, etc.

UNIT 8 INFORMATION SERVICES: AN OVERVIEW

Structure

- 8.0 Objectives
- 8.1 Introduction
- 8.2 Information and Knowledge – Definition
- 8.3 Need for Information
- 8.4 Types of Information Needs
 - 8.4.1 Current Information Needs
 - 8.4.2 Exhaustive Information Needs
 - 8.4.3 Everyday Information Needs
 - 8.4.4 Catching-up Information Needs
- 8.5 Library and Information Services
 - 8.5.1 Responsive Information Services
 - 8.5.2 Anticipatory Information Services
 - 8.5.3 Web-based or Internet-based Services
- 8.6 Summary
- 8.7 Answers to Self Check Exercises
- 8.8 Keywords
- 8.9 References and Further Reading

8.0 OBJECTIVES

This Unit discusses the concepts of data, information and knowledge, need for information and types of user's information needs. It also provides an overview of different types of services offered by the libraries and information centres. Further, it elaborates the impact of Information and Communication Technologies (ICTs) on the library and information services and explains how libraries and information centres can cope with this changing environment.

After reading this Unit, you will be able to:

- explain the concepts of data, information and knowledge;
- identify the information needs of different groups of users;
- categorise the types of information needs;
- explain the types of services library can offer to meet these information needs; and
- discuss the influence of information technology on the provision of information services.

8.1 INTRODUCTION

We are living in the information age. Information is crucial for all our day-to-day activities. It is generated from all kinds of human activities and achievements. Both individuals and organisations are involved in the creation of information.

R&D organisations, for instance, carry out research and generate new information. Government organisations through their diverse activities, such as governance, administration, census and surveys, generate new information. Individuals, like researchers, inventors, innovators, discoverers, thinkers, authors, planners and policy makers, judges, etc. are all involved in the task of generating information. The information, thus generated, is processed and recorded in a variety of sources and formats, and is made available for public use. Large amount of information is created every year in the form of print, films, electronic and optical storage media and is disseminated through various channels like print, telephone, radio, television and Internet. Printed information is available in a variety of **primary sources** (like periodicals, theses, research reports, patents, standards, etc.), **secondary sources** (like indexing and abstracting periodicals, books, dictionaries, encyclopaedias, handbooks, etc.) and **tertiary sources** (like directories, bibliography of bibliographies, guide books, etc.). Electronic information is available for all the print versions in the form of **e-resources**, such as e-books, e-journals, etc. Libraries systematically collect, process, store and disseminate this recorded knowledge and information to their users. In this Unit you will study about information, need for information, and types of services libraries are generally providing to meet these information needs.

8.2 INFORMATION AND KNOWLEDGE – DEFINITION

According to Oxford English Dictionary the first known historical meaning of word ‘information’ in English was “act of informing, or giving form or shape to the mind, as in education, instruction or training.”

Online Dictionary of Library and Information Science defines information and knowledge as follows:

Information – “**Data** presented in a readily comprehensible form to which **meaning** has been attributed within the context of its use. In a more dynamic sense, **information** is a message conveyed by the use of a medium of **communication** or expression. Whether, a specific message is information or not depends in part on the subjective perception of person receiving it. More correctly, all the facts, conclusions, ideas and creative works of human intellect and imagination, that have been communicated formally or informally, in any form is information.”

Knowledge – “**Information** that has been comprehended and evaluated in the light of experience and incorporated into the knower’s intellectual understanding of a subject. In other words **knowledge** is the **information**, one has acquired through learning or experience.”

Communication – Communication is a process of transferring **information** from one entity to another. Communication is commonly defined as “the interchange of thoughts, opinions or information by speech, writing or signs.” Communication can be perceived as a two-way process in which there is exchange of thoughts, feelings or ideas towards mutually accepted goal or direction (en.wikipedia.org).

Telecommunication – The transfer of **information** from one physical location to another by electronic means. The term telecommunication refers to both analog

and digital communication, including voice and video. Data communication refers only to digital communication.

The above definitions illustrate that information is a term with many meanings depending on context and is closely related to such concepts as meaning, knowledge, instruction, data, and communication. In terms of communication, information is a message that is received and understood. In terms of data, it can be defined as a collection of facts from which conclusions can be drawn. There are many other aspects of information, since it is knowledge acquired through study, experience or instruction.

Even though information and data are used interchangeably, they are actually different. Data are sets of unrelated information or facts and as such of no use until they are properly evaluated. Upon evaluation, once there is significant relation between data and they show some relevance, then they are converted into information. Now the same data can be used for different purposes. Thus, when the data convey some information, they are useful and considered to be information.

We all know that knowledge is information that one has acquired through learning and experience. At times, knowledge and information are used synonymously. For instance, we refer to a library, a storehouse of knowledge, because it stores documents which contain information and knowledge.

In nutshell, we can say, data (which are one or more pieces of information or facts or observations), when processed, manipulated and organised into a meaningful guide to form the basis for further action, study or research, are known as information whereas knowledge refers to practical use of information. While information can be transported, stored and shared without any difficulty, same cannot be said about knowledge. For instance, a scientist conducts a scientific experiment and prepares a detailed report explaining the findings of her/his experiment. Now, a third person reading the results will have information about the experiment, but the person who conducted the experiment will have knowledge about it. Thus, information becomes knowledge when it is analysed, linked to other information and compared to what is already known.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

1) Distinguish between data, information and knowledge.

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8.3 NEED FOR INFORMATION

Information is crucial for all our activities. We need it for education, research, employment, entertainment, healthcare, problem solving and life long learning. Information is a vital resource for socio-economic development of a country. Accessibility of latest scientific, technical, developmental and commercial information, gives a country economic, technological and political advantage over other countries.

Everybody needs information for some purpose or other. Students need information to supplement their textbooks studies and for project work; teachers need information for teaching and research; professionals (doctors, engineers, lawyers, consultants, etc.) need information to pursue their careers efficiently and planners and policy makers need information to frame policies and plans as well as to take correct decisions. Researchers (scientists, technologists, social scientists, etc.) need information to keep up-to-date in their area of research, to find out new areas of research, to avoid duplication of research efforts and to solve any problem they encounter while carrying out research. Researchers are the most extensive users of information and knowledge. As a matter of fact, most of the earlier library and information services were designed keeping in view their information requirements.

8.4 TYPES OF INFORMATION NEEDS

A large number of user surveys have been conducted to find out information requirements of different categories of library users. Such studies show, information needs vary from person to person, and a particular person may have different needs at different points in time, depending upon her/his nature of work, place of work, etc. These surveys, in general, have identified four types of information needs of users which are: current information needs, exhaustive information needs, everyday information needs, and catching-up information needs.

8.4.1 Current Information Needs

When users need information to keep themselves up-to-date with the latest developments in their area of interest on a regular basis, the need is known as current information need. Here, users do not need specific information, but need to regularly keep themselves abreast of information not only in their own area of interest but also of developments that may affect their work. For instance, people in the corporate sector need to know on regular basis, about the market and their competitors, latest innovations in the product development and how to do business.

8.4.2 Exhaustive Information Needs

When user wants to have information on a particular subject as exhaustive as possible, the need is known as exhaustive information need. This need is an occasional one and is expected mainly from the researchers. A researcher, before starting research on a particular topic, surveys the literature published in that area as comprehensively as possible, with a view to select new area for her/his research as well as to avoid duplication of research effort. The exhaustive

information need also arises when the researcher is reporting her/his research findings, in order to compare her/his research results with the results of earlier studies.

8.4.3 Everyday Information Needs

This need is for a specific piece of information which users require, generally in their day-to-day work related activities. For instance, a scientist working on an experiment wants to know melting or boiling point of a particular compound. This need is basically for factual information which may range from how to spell a word or find a telephone number of an industry or to know the name and address of a managing director of a corporate house.

8.4.4 Catching-up Information Needs

This need arises when a user, who is not conversant with a particular subject field, requires an account of overall development of that subject in short and most comprehensible form. This type of need is grouped as catching-up information need. It arises when a scientist or technologist conducts research on a multidisciplinary project. S/he may be an expert in one of the disciplines, but to catch-up with other disciplines, which fall within the purview of the current project, s/he requires a brief overview of those disciplines in simple and understandable form.

Apart from the four types of information needs mentioned above, there are two more types of information needs of users which a good library system can fulfil. These needs are **General Reading Needs** and a **Need for Informal Information** which help users to improve the work they do. Both these needs, when fulfilled, help in personal development of the user.

Libraries form a vital part of world's system of information storage and retrieval. Libraries of all types, like academic, public or special libraries, acquire, organise, store, retrieve and disseminate information according to the needs of users. They make available through books, journals, films, recordings and other media, the knowledge that has been accumulated through ages. People from all walks of life including students, teachers, researchers, professionals, business executives, government officials use library resources to meet their information requirements.

Self Check Exercise

Note: i) Write your answers in the space given below.

ii) Check your answers with the answers given at the end of this Unit.

2) Distinguish between 'Everyday Information Need' and 'Current Information Need'.

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- 3) Differentiate between ‘Exhaustive Information Need’ and ‘Catching-up Information Need’.

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8.5 LIBRARY AND INFORMATION SERVICES

Libraries build their collections tailored to the needs and goals of the organisation they serve. Viewed historically, the library’s role of making materials available ranks among the most important contributions ever made to human culture and technology. Libraries have long stored materials that enable ideas, knowledge and experiences to be passed on from generation to generation. Without this line of communication, cultural and technological developments would not be as advanced as they are today. In day-to-day life, the library materials serve as important resources in education, work and recreation of millions of people. To the students, the library is a place where they can find information that help them to carry out their school or college work. It is also a place where they can pursue knowledge outside their classrooms and beyond their textbooks. Professional people rely on materials in special library for information they need for their work. Before going to a court for a legal case, a lawyer may spend hours in a law library finding and studying cases to prepare for arguments. Doctors use medical libraries to obtain information they need in order to treat unusual and complicated cases. Many business executives also find materials in the library to be of great value for their work.

Present day libraries have extended library services far beyond making materials available. They offer many forms of assistance to library users, which can broadly be grouped as Reference and Information Services. These services promote the use of library material, connect the users with the library resources and meet the information requirements of the users. These services can be broadly divided into two groups:

- a) **Responsive Information Service:** The service that is provided in response to a specific request.
- b) **Anticipatory Information Service:** The service that is provided in anticipation of some need.

8.5.1 Responsive Information Services

Responsive information services (also known as *passive information services*) are provided in response to a request from the users. The request may come from the user in person, over the telephone, through correspondence, or via e-mail. Requests may be for finding general information about the library, its layout, how to become a member, how to use catalogue, or for finding answer to a particular question or getting a particular document from the library. These services can be broadly categorised as follows:

- 1) Provision of general information
- 2) Reference service
 - i) Ready reference service
 - ii) Long range reference service
- 3) Literature search and compiling a subject bibliography
- 4) Assistance in the use of library collection and library tools
- 5) Document delivery service
- 6) Referral service

1) **Provision of General Information**

General information is sought by a user, who visits the library for the first time. Such readers need directional guidance in the use of library such as general layout of the library, where current issues of periodicals are displayed or the location of reference and textbooks section of the library or where is the computer terminal for searching information on OPAC (Online Public Access Catalogue) of the library if there is one, etc. Such type of directional guidance is frequently provided by the libraries. Schools, college and university libraries normally offer 'user orientation' or 'user education' programmes for the new entrants. These programmes are organised for new students every year in the beginning of the academic session. The contents of these programmes cover: objectives of the library and its organisation, collections of the library and its location, catalogue of the library and how to use it, general rules and procedures of the library, lending and borrowing facilities, reference and information services, etc. User initiation programme may be in the form of a lecture by the librarian followed by a tour of the library. Some libraries prepare audio/visual kits for this purpose, other libraries distribute library brochures containing all the information. Whatever may be the format of these programmes, basic objective is the same i.e. to introduce the library and its services to the new user.

2) **Reference Service**

According to Ranganathan "Reference service is the process of establishing contact between a reader and his documents in a personal way". Reference service is also considered as a personal service which is provided in response to the request from the users. Requests may be for locating answers to fact finding questions, literature search for solving a research problem or for compiling a bibliography, or for general help. To provide the service the librarian may utilise the resources available in the library as well as available outside the library. Basic aim is to make the information available to the user as early as possible. Depending upon the requirement, librarian may give information or the document containing the information. Basic services under this category are ready reference service and long range reference service.

i) **Ready Reference Service or Short Range Reference Service**

This service is concerned with providing answers to fact finding questions, such as what, where, who, when, and how type. What is the population of India? Where is Nile River located? Who discovered telephone? When will next total solar eclipse occur? How many bones

are there in a human being? Where can I find a biography of Nobel Laureate Amartya Sen? The required information can be easily located in standard reference books like dictionaries, encyclopaedias, yearbooks, almanacs, gazetteers, biographical sources, etc. The time required to answer these queries is very short ranging from a few minutes to half an hour. Ninety per cent of such queries are simple to handle. That is why this service is known as ready reference service or short range reference service. Only 5 to 10 per cent of the queries may take hours of research to find the answer. Percentage of ready reference questions, handled by libraries differ from library to library. In one study it was found that 60 per cent of the questions asked in a public library were of ready reference type. Request for background information made up other 40 per cent of the queries. In academic and special libraries, such questions may range from 30 to 60 per cent of the total. Ready reference service is not limited to users, who visit the library to ask question. Many libraries offer remote assistance via telephone, e-mail. Librarians are also creating websites, answer archives and links to answers to “Frequently Asked Questions (FAQ).” These all are designed to anticipate user’s questions and help users to find information independently. Ready reference service satisfies everyday information needs of the users.

ii) **Long Range Reference Service**

This service is generally provided to a specialist who is seeking information for research work or to solve a particular problem. Information sought may be too specialised in nature, it may be too recent, it may be related to earlier period, or it may be in another language. This type of service is more common in special libraries. The request may come from a professor, a business executive, a professional, or R&D personnel. In long range reference service, information is searched in several sources like printed sources, electronic sources, organisations as well as informal sources. In case information is not available in local library the sources of other libraries are explored and material is borrowed on interlibrary loan. Since wide range of sources are consulted to provide this service, the time taken is much longer than the ready reference service. Moreover, in ready reference service data or facts are provided, while in long range reference service documents, periodicals or reports containing information are provided. Sometimes information selected from various sources is analysed, evaluated, synthesised and repackaged to suit the information requirement of the user.

3) **Literature Search and Compiling a Subject Bibliography**

Another very important responsive service offered by a library is to compile subject bibliographies on request. Sometimes such bibliographies are compiled on regular basis or in anticipation of user’s needs. At times bibliographies are compiled on special occasions, such as during seminars and workshops, to provide the latest literature on the subject. University and special libraries offer this service more frequently than the public library. Compilation of bibliography will be dealt in detail in **Unit 10** of this course. Long range reference service, literature search and bibliographies meet the current as well as exhaustive information needs of the users.

4) **Assistance in the Use of Library Collection and Library Tools**

Assistance in the use of library collection and library tools (such as catalogue including OPAC, reference books, online databases, etc.) is provided to the user so that s/he may be able to use the library more profitably. To provide this service it is important that the reference librarian should have positive attitude towards the profession. S/he should be friendly in nature and willing to help the user. S/he should be professionally competent to establish rapport with the user. Positive attitudes not only enhance the image of the library but also encourage the library user to approach the library staff without any hesitation and with confidence. Such services form part of promotional activities and encourage the use of library material as well as library services.

5) **Document Delivery Service**

Document Delivery Service (DDS) is concerned with the supply of document(s) to the users on demand, either in original or its copy in print or non-print form. Most of the information services such as current awareness service, selective dissemination of information (SDI) service, indexing and abstracting service, literature search service, etc. are aimed at guiding the user to the document where required information is available. On the other hand, DDS actually locates the required document and deliver it to the user. Earlier, DDS was mainly concerned with “lending” a document to the user for a specified period of time, if the publication is not available within the library, then borrowing it from other libraries on interlibrary loan and lending it to the user. With the introduction of xerography in mid 1950s and large scale use of photocopier in the libraries by 1970s, documents could be duplicated and given permanently to the users. The libraries started using photocopier for supply of copies of documents, particularly of journal articles and parts of books. The advent of ICTs (Information Communication Technologies) in 1980s, made it possible to store the documents in electronic form and send the same electronically over long distances via telecommunication networks almost instantly. Now, many libraries and information centres are using this technology for delivery of documents to their users. With the availability of full-text electronic journals and e-books on the Internet, many publishers and aggregators, have started offering online ordering and instantaneous delivery of the books and articles of journals. User can request an item directly from the publisher and receive the article at the location of her/his choice. At present, database producers, commercial online vendors, commercial publishers, and e-journal service providers are also offering DDS on payment basis. DDS is one of the back up services of the library.

6) **Referral Service**

When users are referred to the sources where the required information is available, the service is called referral service. Referral service does not provide users with the document or information needed by them, but directs them to the sources of information where required information will be available. The source may be either a document, an organisation or an individual. In traditional library services, the service is offered mainly from sources available in-house. In referral service the sources may vary from recorded sources of information to informal sources like individuals, specialists and experts from other organisations.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

4) What do you understand by responsive information services? Enumerate the types of services offered under this category.

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8.5.2 Anticipatory Information Services

Anticipatory information services are provided to library users in anticipation of their demands for such services. These services are also called *active information services*. The need for such services was felt mainly due to: i) Exponential growth of published literature, particularly in the field of science and technology; ii) Interdisciplinary nature of frontline areas of research, resulting in scattering of information in different disciplines; and iii) Publications of research results in different types of sources (like primary research periodicals, research reports, conference proceedings, dissertations, etc.), languages as well as in different formats (like print or electronic). As a consequence of the growth in volume, diversity, and complexity of information sources, scientists, technologists, researchers and managers faced problems in accessing information and in keeping themselves abreast of the latest developments in their fields of interest. To solve this problem, the libraries, particularly, scientific and technical libraries started providing information services to the users, mainly to the researchers. Now, not only S&T libraries, but all kinds of libraries and information/documentation centres, are offering some form of anticipatory information service, depending upon the needs of their clients. To provide these services, user’s information needs are assessed and then services are designed accordingly. Initially, the service is provided on trial basis and when response is satisfactory then the service is regularised. Generally, following types of anticipatory services are offered:

- i) Current Awareness Type
- ii) Condensation Type
- iii) Readers Advisory Service
- iv) Information Literacy Training

i) Current Awareness Type

To keep the users abreast of the current developments in their respective fields of interest current awareness types of services are offered to the users. This involves scanning the newly available documents in print as well as in non-print form, selecting items relevant to the needs of individual or group of users, recording them and disseminating to the users on a regular basis. Current awareness type of services meet the current information needs of the users. Types of services provided under this category are:

- Accession List/ Current Awareness List/ Documentation Bulletin
- Title Announcement Service/ Contents-by-Journal Service
- Selective Dissemination of Information
- Research-in-Progress Bulletin
- Newspaper Clipping Service

Accession list covers the latest books acquired by the library. Accession list is brought out either fortnightly or monthly. Some libraries regularly display the latest books in the library after accessioning. Current awareness list and documentation bulletin cover list of articles of latest journals or other sources of current information received by the library. In contents-by-journal service, content pages of the newly received journals are duplicated and circulated to the users for keeping them abreast of the latest articles published in their fields of interest. Sometimes currently received journals are circulated to the researchers. Selective dissemination of information service is a personalised current awareness service, where newly received items of information are matched with user's area of interest and only those items are selected and disseminated to the user which matches the user's interest. This service is normally a computerised service. Research-in-progress bulletin is another type of current awareness service which provides information on the on-going research projects in various research institutions in a country or in the world. Such type of publications are generally brought out by a parent body which funds or controls a group of research organisations like CSIR (Council of Scientific and Industrial Research), ICMR (Indian Council of Medical Research), ICAR (Indian Council of Agricultural Research), etc. In newspaper clipping service, libraries provide important news items of interest published in national and international newspapers and magazines, to the organisation periodically such as daily or weekly. Newspaper clipping service is quite common in media libraries and libraries of government departments, industrial organisations, and financial institutions.

ii) **Condensation Type**

In this type of service, contents of the documents are condensed or summarised along with bibliographical details of the document. This enables the user to identify the basic contents of the document quickly and determine its relevance to their interest. At times, a well prepared abstract serves as a substitute for the document. The types of services under this category are indexing services, abstracting services, digest services and other value-added services. Basic process involved in indexing and abstracting service is 'analysis of information'. In indexing service it is 'analysis of the subject' and in abstracting service it is 'analysis of the contents.' In both these services no critical evaluation is carried out of the basic contents of the documents. The resultant product is factual, non-critical or non-evaluative. In digest service, information is collected from various sources, it is properly evaluated, analysed and consolidated to prepare a digest. Analysis and consolidation of information is done keeping in view the specialised requirements of the users. Different types of digests are prepared, tailored to the needs of different categories of users e.g. users at managerial, supervisory, technician or operator level. Abstracting, indexing, and digests services meet current as well as exhaustive information needs of the users whereas some value-added services like state-of-the-art reports, reviews, market reports, etc. meet the catching-up information needs of the users. You will study in detail about these services in **Unit 9** of this course.

iii) **Readers Advisory Service**

This service deals with providing reading guidance to individuals. Aim of this service is to motivate the readers to use the library and inculcate good reading habits in them. School children require this kind of service very much. Such a service is more often offered in school and public library. This service helps the readers to select right books for educational and recreational purposes. This type of service meets general reading needs of the users and helps in personal development of the users.

iv) **Information Literacy Training**

Information literacy training has been known by many different names such as library orientation, user assistance, bibliographic instruction, user education, and information skills training. Library orientation is concerned with acquainting new users to the library, such as objectives of the library and its organisation, collection of the library and its location, general rules and procedures of the library and reference and information services of the library. User assistance refers to helping an individual rather than a group. Bibliographic instructions concentrate on mechanics of using particular resources. User education or information skills training connotes an educational activity, which is concerned with motivating the user and developing a skill in the user to find and search information independently for study, research and recreational purposes. Information literacy skills concentrate on cognitive and transferable skills such as problem solving, evaluation, and communication skills. Chartered Institute of Library and Information Professionals (United Kingdom), defines information literacy as:

‘Information literacy is knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in ethical manner.’

National Forum on Information Literacy, Inc. (U.S.A), defines it as:

‘Information literacy is the ability to know, when there is need for information, to be able to identify, locate, evaluate and effectively use that information for issue or problem in hand.’

An information literate should have the ability to:

- understand the need for information;
- identify resources available;
- find information;
- evaluate the results;
- work with or exploit the results;
- communicate and share the findings; and
- manage the findings.

UNESCO is strongly advocating the building of knowledge societies where the power of information and communication helps people to access the knowledge they need to improve their daily lives and achieve their full potential. In this context, information literacy is important as a means to empower people from all walks of life to seek, evaluate, use and create information effectively, to achieve their personal, social, occupational and educational goals. The rise of information

revolution has led to information becoming a producer of wealth. This revolution has increased the importance of being able to access and utilise information from a variety of sources including information published electronically. Various studies have shown that information literacy level of students entering higher education is low. They have basic knowledge of several simple tools and documents, but they lack understanding of other more specialised sources like scholarly journals, databases, thesaurus, etc. They also lack the knowledge of basic principles of copyright or to have a critical approach to information. Hence, information literacy training is mandatory if students are to perform at the expected level in higher education. Well planned information literacy training programmes ensure that each user is able to access and use all the available quality information efficiently and effectively regardless of its form, both in library and on the Internet.

Details of why information literacy is essential for library staff as well as for library users and types of information literacy programmes required to be conducted by the libraries for various categories of users, will be covered in **Unit 11** of this course.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

5) What factors led to the provision of 'anticipatory information services' by the libraries? Enumerate the types of services offered under this category.

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8.5.3 Web-based or Internet-based Services

Internet and the World Wide Web (WWW) have introduced new and powerful ways of finding and sharing information. Many people use the terms Internet and WWW interchangeably, but in fact the two terms are not synonymous. The Internet and the Web are two separate but related terms. The Internet is a collection of interlinked computer networks which when accessed from individual computer, gives user the ability to find information located on any computer linked to one of the networks. The Internet connects millions of computers together globally, forming a network in which any computer can communicate with any other computer as long as they are connected to the Internet. The information that travels over the Internet does so via a variety of languages called protocols.

The WWW or simply the Web is a way of accessing information over the medium of the Internet. The Web uses HTTP (Hyper Text Transfer Protocol) to transmit data. The Web also utilises browsers such as Internet Explorer or Netscape Navigator to access Web documents. HTTP defines how messages are formatted and transmitted, and what action web servers and browsers should take in response

to various commands. For example when you enter a URL (like <http://www.niscair.res.in/>) in your browser, this actually sends a command to the web server directing it to fetch and transmit the requested web page. The web documents are called web pages that are linked to each other via hyperlinks. Web pages are formatted in a mark up language called HTML (Hyper Text Markup Language) that supports links to other documents, as well as graphics, audio or video files. The Web is just one of the ways that information can be disseminated over the Internet. Thus, the Internet, not the Web, is used for e-mail, Usenet newsgroups, instant messaging and FTP (File Transfer Protocol).(<http://www.webopedia.com>).

The Internet and the Web technology has changed the way people communicate, interact, acquire and share knowledge. Growing number of people rely on the Internet for information they need. With further advancements in the Internet and communication technology Web 2.0 has evolved which provide dynamic, interactive and collaborative platform for the users to exchange information and knowledge. In Web 1.0 environment, users read what others wrote. However, now Web 2.0 facilitates users to express their views and publish them online through services like blogs and wikis. In other words, migration from Web 1.0 to Web 2.0 is essentially characterised by movement from “read-only” to ‘read-and-write web, (Arora 2009).

The users of today, particularly young people, are relying and accessing information very differently. They lead media saturated lives and use the Internet more than the libraries. They use portable devices and access information from homes, from workplace, from restaurants, indeed from anywhere. They think they can find all knowledge via Google or Yahoo. The Wikipedia provides free knowledge on every topic. With this information now being readily available from an individual’s own computer, the role that the library traditionally played in aspects of information provision is being questioned and doubts are cast about whether it has a future. In other words, users value convenience and do not have strong incentives to use library sources. It is high time that libraries need to think competitive environment around them and take initiative to take library sources to the user, since ease of access and principle of least effort play a part in the choice of information source. Earlier users built workflow around libraries. Now, libraries should build services around user workflow if they want to survive. Many libraries have taken initiative and are using available technologies to offer improved, customer driven services to their users.

The types of services offered are:

- i) **Library Website:** A Web presence is very important for the library to reach its users. With library’s website on the Internet, users can search library sources using OPAC (Online Public Access Catalogue) from anywhere and at anytime. They need not visit or wait for the opening and closing hours of the library. Users can reserve particular publication, make suggestions for purchase of a particular publication, online renew the borrowed books and many more things without visiting the library. Many libraries are offering reference services in an online mode where users can communicate with the librarian as they would do in face-to-face reference context. Many libraries offer online chat facility, provide links to OPAC of other libraries which are useful for their patrons. Libraries are also providing online access

to union catalogue of books, conference proceedings, theses and dissertations, etc. of the participating libraries which users can search remotely.

- ii) **Access to Databases:** An increasing number of bibliographic, numeric and full-text databases are available on the Internet. Indexing and abstracting databases like Chemical Abstracts, Biological Abstracts, Index Medicus, COMPENDEX, and INSPEC, etc. are all available on the Web with added functionality and features. Depending upon the needs of the users library can provide access to these databases. You will study in detail about these databases and their services in **Unit 10** of this course.
- iii) **Access to e-Journals:** Electronic journals or e-journals are those journals which are prepared and distributed electronically. Several traditional journals are now being published both in print as well as on the Web. Libraries are joining e-journal consortia to provide access to full-text e-journals to their clients. Some of the examples are JCCC@UGC-INFONET Consortium and CSIR e-Journal Consortium. You will study about these consortia in **Unit 10** of this course.
- iv) **Access to Courseware:** There is a wide variety of interactive multimedia courseware resources available on the Internet for learning as well for developing multimedia for teaching purposes. Depending upon the needs of its users, library may provide access to some of these coursewares. Some examples of courseware available on the Internet from India are:

e-Gyankosh: It is a National Digital Repository developed by Indira Gandhi National Open University (IGNOU). The repository supports learning resources in different formats such as self instructional study material, audio/visual programmes, and archives of radio and television based-live interactive sessions on the Web. The entire course material of different courses offered by the university has been digitised and made available to the students through e-Gyankosh. The repository offers anytime access to its collection to the academic community.

National Programme on Technology Enhanced Learning (NPTEL): Seven Indian Institutes of Technology (IITs) and Indian Institute of Sciences (IIS) have developed curricula-based video and web courses in different branches of engineering. The objective of NPTEL programme is to enhance the quality of engineering education in the country. In the first phase of the project, supplementary contents for 125 web courses in engineering/science and humanities have been developed. Each course contains materials that can be covered in 40 or more lectures. In addition 135 courses have been developed in video format. Here each course comprises about 40 or more lectures of one hour duration. Goggle and YouTube are supporting NPTEL distribution. Video lectures can be directly accessed at <http://youtube.com/iit>.

Nation Science Digital Library (NSDL): As a part of 10th Five Year Plan Network Project of Council of Scientific and Industrial Research, NSDL is providing free curriculum base contents to the undergraduate students of science in India on the Web. The course contents have been written and vetted by eminent faculty members from different universities and colleges.

8.6 SUMMARY

In this Unit, we have discussed the concept of data, information and knowledge. We have also explained variant nature of information, how it is generated and communicated and described the importance of information for individuals in every field of human activity be it education, research, entertainment, employment, problem solving or for life long learning. Different types of information needs of the users have been highlighted. We have described the types of services offered by the libraries and information centres to fulfil these needs. The Internet and the World Wide Web have revolutionised the ways of accessing and sharing information. The Unit also discusses how libraries are taking initiative in using this technology to offer customer driven improved services to their users.

8.7 ANSWERS TO SELF CHECK EXERCISES

- 1) **Data:** Even though information and data are used interchangeably, they are actually different. Data are sets of unrelated information, facts or statistics and as such of no use until they are properly evaluated. Upon evaluation, once there is significant relation between data and they show some relevance, then they are converted into information.

Knowledge: Information that has been comprehended and evaluated in the light of experience and incorporated into the knower's intellectual understanding of a subject. In other words **knowledge** is the **information**, one has acquired through learning or experience.

Information: Information is a term with many meanings depending on the context and is closely related to concepts such as knowledge, instruction, data, and communication. In terms of communication, information is a message received and understood. In terms of data, it can be defined as a collection of facts from which conclusion can be drawn. There are many other aspects of information, since it is knowledge acquired through study or experience or instruction.

In nutshell, we can say, data (which are one or more pieces of information or facts or observations), when processed, manipulated and organised into a meaningful guide to form a basis for further action, study or research, is known as information whereas knowledge refers to practical use of information. While information can be transported, stored or shared without any difficulty, same cannot be said about knowledge. For instance, a scientist conducts a scientific experiment and prepares a detailed report explaining the findings of her/his experiment. Now, a third person reading the results will have information about the experiment, but the person who conducted the experiment will have knowledge about it. Thus, information becomes knowledge when it is analysed, linked to other information and compared to what is already known.

- 2) When users want to keep themselves abreast of latest developments in their area of interest on regular basis, the need is known as current information need. Here, users do not need specific information but they keep track of the latest developments not only in their own area of interest but also in the related areas, whose development may affect their work. Everyday information need is need for specific piece of information which users require, generally in their day-to-day working.

- 3) When user wants to know all the information published on a subject area or a topic, the need is known as exhaustive need for information. This need is an occasional one and is required mainly by the researchers, for starting a research on a topic or while reporting their research findings, in order to compare their research results with earlier studies. This requires exhaustive search of published literature on that subject or topic whereas in catching-up information need one needs to have a brief overview of a subject or a topic in short and most comprehensible form. This need arises when a scientist or an engineer conducts a research on multidisciplinary project. S/he may be an expert in one of the disciplines, but is not conversant with other disciplines which fall within the purview of the current project. So, s/he needs to have a brief overview of those disciplines in short and convenient form to catch-up with the trends.
- 4) Responsive information services (also known as passive information services) are provided in response to the request from the users. The request may come from the user in person, over the telephone, through correspondence, or via e-mail or Internet. These services can be broadly categorised as follows:
 - i) Provision of general information
 - ii) Reference service
 - a) Ready reference service
 - b) Long range reference service
 - iii) Literature search and compiling a subject bibliography
 - iv) Assistance in the use of library collection and library tools
 - v) Document delivery service
 - vi) Referral service.
- 5) Anticipatory information services are provided to the library users in anticipation of their demands for such services. These services are also called active information services. The need for such services was felt mainly due to: i) Exponential growth of published literature, particularly in the field of science and technology; ii) Interdisciplinary nature of frontline areas of research, resulting in scattering of information in different disciplines; and iii) Publications of research results in different types of sources (like primary research periodicals, research reports, conference proceedings, dissertations, etc.), languages as well as in different formats (like print or electronic). Generally following types of services are offered under anticipatory information services:
 - i) Current Awareness Type
 - a) Accession List/ Current Awareness List/ Documentation Bulletin
 - b) Title Announcement Service/ Contents-by-Journal Service
 - c) Selective Dissemination of Information
 - d) Research-in-Progress Bulletin
 - e) Newspaper Clipping Service

- ii) Condensation Type
 - a) Abstracting Service
 - b) Indexing Service
 - c) Digest Service
- iii) Other Value-added Services
 - a) Readers Advisory Service
 - b) Information Literacy Training

8.8 KEYWORDS

- Blog** : Short for web log, a frequently updated website about a particular topic that contains dated entries in reverse chronological order i.e. with newest entries at the top.
- Consortium** : A consortium is an association of two or more individuals, companies, organisations or governments with the objectives of participating in a common activity or pooling their resources for a achieving a common goal.
- Google** : It is a web search engine owned by Google Inc. and is most used search engine on the web.
- Instant Messaging** : Instant Messaging is a form of real-time direct text-based communication between two or more people who are online simultaneously.
- Newsgroup** : A Newsgroup is a group of people who post messages about a single subject on a computer network.
- RSS** : Really Simple Syndication (RSS) is a format for publishing Web contents. It is used for sending timely information and updates to people who subscribe to it. For example, RSS feeds of Times of India Newspaper.
- Wikipedia** : It is a multilingual, web-based free content encyclopaedia. Wikipedia is written collaboratively by an international group of volunteers. There are more than 85,000 active contributors working on more than 14,000,000 articles in more than 260 languages.
- Wikis** : It is a website that allows multiple users to create, modify and organise Web contents in collaborative manner.

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UNIT 9 TYPES OF SERVICES: REFERENCE SERVICE, CAS, ETC.

Structure

- 9.0 Objectives
- 9.1 Introduction
- 9.2 Reference Service – Meaning and Definition
 - 9.2.1 Reference Service – Origin, Growth and Development
 - 9.2.2 Information Service – Origin, Growth and Development
 - 9.2.3 Reference Service vs. Information Service
- 9.3 Types of Services
- 9.4 Responsive Information Services
 - 9.4.1 Reference Service
- 9.5 Anticipatory Information Services
 - 9.5.1 Current Awareness Type
 - 9.5.2 Condensation Type
- 9.6 Organisation and Management of Reference and Information Service
- 9.7 Summary
- 9.8 Answers to Self Check Exercises
- 9.9 Keywords
- 9.10 References and Further Reading

9.0 OBJECTIVES

In Unit 8 of this Block you have learnt about the information needs of library users and types of services libraries are providing to fulfil these needs. In this Unit, you will learn about the reference and information services offered by libraries and information centres and the impact of information communication technology on the provision of these services.

After reading this Unit, you will be able to:

- discuss the development of reference and information service;
- differentiate between reference and information service;
- describe the importance of Internet as a reference tool;
- identify different types of current awareness services;
- discuss different types of condensation services like abstracts, digests and other value-added services; and
 - comprehend the impact of ICT and web technology on the provision of these services.

9.1 INTRODUCTION

The library functions that are common to all types of libraries are acquisition, organisation, storage, and retrieval of recorded public knowledge. Earlier, libraries were regarded as mere storehouse of knowledge and books were meant for

preservation. Librarians acted as mere custodians of this knowledge and had no role in promoting the use of library collection by the users. Users were expected to use the library on their own. Librarians concentrated more on the collection and maintenance of library material rather than promoting its use.

Now, present day modern libraries are considered as service institutions. They not only acquire, organise, store, retrieve and disseminate the library material but actively encourage and promote its use among the users. They offer many forms of assistance to library users, which can broadly be grouped as reference and information services. These services promote the use of library material, connect the users with the library resources and meet their information requirements.

In this Unit, you will study the origin, growth and development of reference and information services, the difference between them and range of services offered under each category.

9.2 REFERENCE SERVICE – MEANING AND DEFINITION

To provide a precise definition of reference service is rather difficult. However, let's discuss some of the formal definitions that have appeared in library science literature from time to time. According to American Library Association's Glossary of Library Terms, "Reference Service is that phase of library work which is directly concerned with assistance to readers seeking information and in using the resources of library in study and research." According to Margaret Hutchins "Reference work include the direct personal aid within the library to persons in search of information for whatever purpose, and also various other library activities especially aimed at making information as easily available as possible. Selecting and organizing materials with this end in view is an important part of reference work as their interpretation to the individual reader." Ranganathan defines it as "Personal service to each reader in helping him to find documents, answering his interest most pin-pointedly, exhaustively and expeditiously." He further says, "To provide the right book to the right reader, in the right personal way."

According to William Katz, The reference service, defined by function can be divided into two categories: direct and indirect.

Direct category includes:

- a) Reference and information service. Under this category personal assistance is provided to the user in pursuit of information.
- b) Formal and informal instructions are given in the use of library and information centres and their resources.

Indirect category includes:

- a) Selection of material needed for reference service.
- b) Reference administration i.e. organisation and administration of reference service.

- c) Interlibrary loan.
- d) Evaluation of reference section.
- e) Miscellaneous tasks such as photocopying, filing, checking in material, maintaining records and other tasks of reference department from budgeting to preparing reports and publicity material.

According to Grieg Aspnes “the ultimate theoretical (and practical) goal of any reference library or information center must be to supply its users with all the information and only the information, they need at the lowest possible cost.”

The above definitions suggest that the reference service in the library is any assistance provided by library staff to users seeking information. It covers direct services such as searching for information, providing directional guidance, helping in research, etc. and indirect services like selection and maintenance of reference material, preparation of guides and aids to the use of library material, etc.

9.2.1 Reference Service – Origin, Growth and Development

Though informal help to the users in the use of libraries has been provided by the libraries since long, the concept of organised reference service can be traced back to the end of 19th century in public libraries in USA. The public libraries were the first ones to initiate reference service in an organised manner. Main driving force behind this initiative was justification of public funds utilised by the public libraries. The public library financed by public funds had to justify its existence to those who supported it. The librarians therefore had real incentives to look for new ways to demonstrate the utility of their libraries to the authorities. These values they appraised in terms of library use and the services offered. In 1876, at the first conference of the American Library Association, Samuel S. Green, Librarian of Worcester, Massachusetts, Free Public Library presented a paper titled ‘Personal relations between librarians and readers’. He emphasised that furnishing readers with catalogue and reference tools was not sufficient and insisted that ‘interpreting these instruments to public by personal guidance must follow’.

By the end of 19th century and early 20th century the concept of reference service was gradually accepted and implemented by American libraries. The leading advocates of this concept along with Samuel S. Green were Poole, Winsor and Melvil Dewey. In 1883, the first full time reference position was established at Boston Public Library and in 1891 the term ‘reference work’ appeared for the first time in the index to the Library Journal.

In the years that followed, the libraries, public as well as academic, slowly set up reference department, established reference collection, designated one or more library staff to fulfil reference functions which included assisting users in the use of library collection, providing answers to fact finding questions and helping readers to make the best selection from the recorded knowledge.

In India, the credit for setting up full fledged reference service goes to S.R. Ranganathan in Madras University Library in 1930.

The emergence of reference service changed the role of a library from mere storehouse of knowledge to that of an educational institution and the role of a

librarian from mere custodian of recorded knowledge to that of a facilitator and promoter of the use of knowledge for the benefit of the library users.

Growth and subsequent development of reference service was based mainly on four objectives, namely, i) to assist the library users, ii) to develop the role of a library as an educational institution, iii) to help users to make best selection from the universe of recorded knowledge, and iv) to justify the existence of the library by demonstrating its use to the authorities who provided financial support.

Services covered under this category included assistance in the use of library and its tools, assistance in searching and locating documents, ready reference and long range reference service, literature search and compilation of bibliography, document delivery service, referral service, etc. Most of the services provided under this category were of responsive type i.e. the service provided in response to the request from the user.

9.2.2 Information Service – Origin, Growth and Development

Twentieth century witnessed the industrial revolution, tremendous increase in R&D activities in the areas of science and technology and special library movement. Increase in R&D activity resulted in exponential growth of recorded knowledge. Advent of computers and communication technologies, though, helped in organisation, storage, retrieval, and dissemination of information, but increased the complexity of information sources. Scientists and technologists, due to sheer amount of information and complexity of information sources, found it difficult to keep track of published knowledge in their respective fields. To solve this problem, libraries, particularly scientific and technical libraries, expanded the scope of reference service. These libraries not only provided reference service on demand, but started collecting and organising the latest published knowledge on users field of specialisation in anticipation, and bringing to their notice on a regular basis. This service was known as information service. Aim of the service was to keep users well informed and up-to-date in their field of specialisation. To begin with, the service was provided by one of the scientists of the research team of the laboratory, since s/he knew the research area as well as had the subject background. Later, library personnel started providing the service. Subsequently, particularly in special libraries, reference service broadened its scope from mere assistance in the location of books and journals and the provision of simple factual information from limited collection of reference books, to analysis, evaluation, reorganisation and repackaging of information drawn from a variety of sources in order to present it in a form which would be most useful to their users. The professionals in special library and information centres attached to R&D organisations had subject background as well as expertise in information searching. They started providing value-added services to their users. The availability of online bibliographic databases like MEDLARS/MEDLINE, Chemical Abstracts, Biological Abstracts, INSPEC, and many more in almost all disciplines of knowledge, made it possible for them to search these databases online and provide indepth services to their users. The information services which were provided covered current awareness services, abstracting services, value-added services like technical digests, etc. Most of the services provided under this category were anticipatory in nature.

9.2.3 Reference Service vs. Information Service

In literature the terms reference service and information service are used synonymously. Some experts refer them as two different kinds of services. The differences are enumerated as follows:

Sr. No	Reference Service	Information Service
1.	Traditional service	Non-traditional service
2	Emphasis to provide documents	Emphasis to provide information
3	User is given the material or directed to locate the material	Attempt is made to provide exact information
4	Aim is to instruct the user	Less concerned towards instructing the user
5	Service provided on demand	Service provided in anticipation
6	Passive service: library staff waits for the user to approach and make demand	Active service: library staff does not wait for the user to come but provide service to keep user well informed

Viewed historically, information service is an amplification of reference service and is concerned with providing information, rather than documents, to the users. Information services were developed mainly to meet the information needs of research scientists and technologists. Reference service is concerned with direct, personal assistance to the library users seeking information whereas information service is provided in anticipation of various needs of the users of library and information centres.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

- 1) What is reference service? Differentiate between reference service and information service.

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9.3 TYPES OF SERVICES

The reference and information services that libraries offer can be broadly categorised into two groups:

- a) Responsive Information Services: The service that is provided in response to a specific request by the user.
- b) Anticipatory Information Services: The service that is provided in anticipation of some need.

9.4 RESPONSIVE INFORMATION SERVICES

Types of Services:
Reference Service, CAS,
etc.

Responsive information services (also known as *passive information services*) are provided in response to the requests from the users. The request may come from the users in person, over the telephone, through correspondence, or via e-mail. The technology now allows users to submit their requests to the library at any time from any place in the world. In an effort to reach the users accessing the library via their computers, many libraries and library consortia are extending their reference service to include virtual reference. Virtual reference is a reference service initiated electronically, often in real time, where users employ computers or Internet technology to communicate with reference staff, without being physically present. Communication channels used frequently in virtual reference are chat, videoconferencing, Voice over IP, co-browsing, e-mail, and instant messaging.

Based upon the type of requests or queries, the services offered in the library can be broadly categorised as follows:

- Provision of general information
- Reference Service
 - Ready Reference Service
 - Long Range Reference Service
- Assistance in searching and locating documents
- Literature search and compiling a bibliography
- Assistance in the use of library tools such as catalogue including OPAC, reference books, online databases, etc.
- Document Delivery Service
- Referral Service

You have been already provided with an overview of the above mentioned services in Unit 8 of this course. In this Unit, we will elaborate only on some of these services such as ready reference service, long range reference service and impact of technology on these services.

9.4.1 Reference Service

Reference service is a personal service which is provided in response to the requests from the users. Requests may be for directional guidance, locating answers to fact finding questions, literature search for solving a research problem, or for general help. To provide the service, the librarian may utilise the resources available in the library as well as those available outside the library. Basic aim is to make the information available to the user as early as possible. Depending upon the requirement, librarian may give the information itself or the documents containing information.

i) Ready Reference Service or Short Range Reference Service

This service is concerned with providing answers to fact finding questions, such as what, where, who, when and how. The requested information can be easily located in standard reference books like dictionaries, encyclopaedias, yearbooks,

almanacs, directories, etc. Time taken to answer these queries is very short ranging from a few minutes to half an hour. That is why this service is known as ready reference service or short range reference service. Ninety per cent of these queries are simple to handle. Only five to ten per cent of the queries may take hours of search to find the answer.

Given below are some of the examples of type of queries and the reference sources where you can find the answers:

Sr. No.	Type of Queries	Corresponding Examples	Type of Reference Sources
1	Language e.g. meaning, spelling, pronunciation, etymology of words	How do I pronounce a word 'Schedule'? Is there a better word for 'nice'? Is 'juggernaut' an English word?	Language dictionaries, Thesauri.
2	Background information of a topic	When was world war II declared? Who were primary political personalities involved in the war? How did the war come to an end?	General encyclopaedia.
3	Trends	What developments took place in the field of 'Information Technology' last year?	Yearbook.
4	General facts, astronomical data, etc.	What is the Earth's distance from Sun? Dates of eclipses of the sun and moon in 2008. Major world events in the year 1909.	Almanac.
5	Places	What countries surround Austria? What is the present name of the country 'Burma'? Where is 'Sofia' located?	Geographical sources like Maps, Atlas, and Gazetteers.
6	People	What is the birth place of Sir C.V. Raman?	Biographical sources, Encyclopaedias.
7	Organisations	Names and addresses of scientific research institutions in India. Names and addresses of universities in India.	Directories.
8	Current events	News summary of terrorists attacks in Mumbai in 2008.	News digest services like Asian Recorder.
9	Statistical information	Domestic production of petroleum products in India in 2006.	Statistical sources, Government sources.
10	Facts, formulae, diagrams	Properties of pure aluminium.	Handbooks.
11	Activities	How to grow a 'Bonsai tree'?	Manuals.

ii) Internet as a Reference Tool

Though, standard reference books maintained by the reference department in the library provide answers to most of the ready reference types of queries but, the most enticing and omnipresent reference tool that has emerged in the twentieth century is the Internet. The usage of the Internet was limited till the advent of the World Wide Web or Web in 1990s. The emergence of the Web and Internet service providers (like America On Line and CompuServe in 1995), offering Internet services to masses, resulted in phenomenal increase in the Internet usage in the world. World's Internet usage statistics shows over 2 billion Internet users (<http://www.internetworldstats.com/>). According to a survey conducted by the Internet and Mobile Association of India, there are at present 46 million (as on September 2011) mobile Internet users in India as against 2 million Internet users in the year 2000 (<http://www.iamai.in>).

Most of the print reference sources are available online on the Internet. Online sources provide updated contents, more advanced search options, download and print options. Many reference sources provide free access to their contents on the Internet. For instance Infoplease.com (<http://www.infoplease.com>) provides free access to encyclopaedia, almanac, dictionary and biographies. Most of the publishers of reference books also offer online access to their publications on the Web to the libraries who purchase their publications. Online access charges differ from publisher to publisher.

Advantages of using Internet as a reference tool are as follows:

Easy access: The number of answers the Internet provides in fraction of a second is amazing. In normal search to get so many answers from diverse sources would take hours of effort. The Internet provides access to universe of information any time from anywhere.

Currency: The Internet resources are more up-to-date than their print versions. Print version of Statesman's Yearbook is published annually, while its online version updates its news column daily.

Multimedia: Apart from textual information, the Internet offers audio, visual and video information. Kids' online resources provide access to complete Merriam-Webster collegiate dictionary and thesaurus free and searchable with definitions and audio pronunciations (<http://www.merriam-webster.com>) (<http://www.kidsolr.com/reference>). In some areas of research audio/visual information adds to the process of learning. The Internet has the capability to provide textual, audio/visual and video information in hypermedia format where links are provided in the web pages to move from one format to another. Grolier Multimedia Encyclopedia online is one of the examples in this category.

Interactive: The Internet has the capability to be interactive. Discussion groups, e-mail, newsletters, on-going comments pages are possible so that information dialogue can be created. Q&A NJ in New Jersey, AskaLibrarian in Florida and AskNow in California are examples of interactive reference on the Internet.

Multiple users: Information through the net is accessible to multiple users at the same time whereas print source can be used only by a single user at a time.

Despite the above listed advantages, the Internet is still not considered a full-fledged reference source because of its inherent limitations which are as follows:

Limitations

Lack of quality control: Anyone can write anything, from anywhere in the world and leave it for any amount of time for any one to read on the Internet. In print publications on the other hand there is built in mechanism for quality control. For example, in scholarly journals each article is reviewed by peer group and edited thoroughly before it is published.

Burden of evaluation: Because of the lack of quality control, the onus of evaluating websites falls on the user herself/himself. Since user is accustomed to accept all printed material as valid information, using information available on the Internet without evaluation may lead to pitfalls.

Full-text information is not free: Full-text information, like full-text e-journals, is not always free for the Internet users. Quality research articles are mostly found in expensive subscription databases.

Volatility: With contents being added, modified, deleted constantly on the websites, make the websites volatile. It becomes imperative to constantly check the quality of website and its contents before using it for research purposes. At times some websites disappear suddenly or change their domain name making it difficult to trace them. This does not happen with print publications, their contents remain static and publication can be safely cited.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

2) Though the Internet is an omnipresent reference tool, why it is not considered a full-fledged reference source?

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iii) Long Range Reference Service

Long range reference service is generally provided to a specialist who is seeking information for research, for delivering a lecture or for solving particular problem. Information sought may be too specialised in nature, it may be too recent, it may be related to another period, or it may be in particular language. The request may come from a professor, a business executive, a government official, a decision maker, or R&D personnel. Depending upon the query, information may be searched in several sources including printed as well as electronic sources. At times, organisational and informal sources are also tapped to provide desired information. Since, to provide this type of service, wide range of sources are consulted, time taken to provide the service is much longer than the ready

reference service. That is why this service is known as long range reference service.

For a topic like 'Trends in the development of high temperature superconductors' the required information may be of highly specialised nature. Information sought may involve an opinion or point of view on a particular topic like 'Can Yoga be associated with religion?'. Information sought may require search in research periodicals, for a topic like 'Recent R&D efforts in combating global warming.' User may be requiring different views on a particular problem or a topic, like 'Repercussions of racially motivated attacks on Indian students in Australia' or 'Marxism vs. Communism.' Sometimes information sought may be too recent in nature for which informal sources may be consulted like experts in the field. At times, information sought may be in foreign language sources for which translation service is to be arranged. As the name indicates immediate answers cannot be provided in long range reference service. Depending upon the queries, it may take an hour or two to a week's time to provide information. In ready reference service data or facts are provided, while in long range reference service documents, periodicals, or reports containing information are provided. Sometimes information selected from various sources is analysed, evaluated, synthesised and repackaged to suit the information requirements of the particular user.

To handle such long range and at times, intricate reference questions, there are certain set procedures and practices which are generally followed so that the search for the query is in the right direction and collected information is acceptable to the user. The foremost and the most important step here is to have personal dialogue with the user. Personal interaction with the user is known as 'Reference Interview.' A reference interview will help to know the query thoroughly, the purpose for which information is sought, background of the user, and type of information sources required. The rest of the steps are similar to those followed in literature search, which you will be studying in detail in Unit 10 of this course.

iv) **Virtual Reference Service**

According to Machine Assisted Reference Section (MARS) of the Reference and User Services Association (RUSA) of the American Library Association, **Virtual Reference Service** is reference service initiated electronically, often in real-time, when users employ computers or other Internet technology to communicate with reference staff, without being present physically. Communication channel used frequently in virtual reference are chat, videoconferencing, Voice over IP, co-browsing, e-mail or instant messaging.

Virtual reference service is also referred as digital reference, e-reference, online reference and remote access reference. While telephonic reference service has long been accepted and practiced in the libraries to respond to remote users' requests, virtual reference service has been relatively a recent phenomenon.

The increasing availability of the Internet and electronic resources have been the major factors which lead to the implementation of virtual reference service that can be accessed electronically by remote users. Present day libraries are making available variety of electronic sources like online catalogues, indexes, abstracts, digitised collections, e-journals and full-text databases, through their websites. The availability of the electronic sources via remote access requires that users

should be assisted by the library to use these sources effectively. There has been a steady decline in the in-house use of library as more number of users are using personal computers with the Internet access from home, workplace or cyber café. This has prompted librarians to explore alternative approaches for interacting with their users. They have started offering virtual reference service.

The virtual reference service, in general sense, can be defined as delivery of reference service via the Internet to library users who are outside the physical confines of the library. Current primary modes of delivery for virtual reference service are e-mail, electronic forums and real-time chat communication. E-mail reference has been the most heavily used type of virtual reference service. Here, user sends the library an e-mail reference query, supplying whatever information s/he feels is necessary. The librarian may reply by e-mail, phone, fax or letter, etc. E-mail reference service suffers from a number of drawbacks which are as follows:

- E-mail does not offer instantaneous response as the Internet users normally expect from the the Web.
- It is difficult to conduct any kind of reference interview using e-mail. If question needs clarification, it may take three or more exchanges over a few days to find out what user really wants.
- E-mail reference places most of the burden of answering the question on the reference librarian whereas in in-house reference, the librarian works with the user to find the answer instead of doing all the work for her/him.

In real-time chat communication users and librarian send short written messages back and forth instantly. Chat software (like CompuServ' Instant Messenger) allows librarian to create a setting where interaction with the user is live (real-time) but limited to written exchange of information. Through a series of short messages librarian gets to know the user's requirement. Some chat programmes offer an open virtual reference room where one or more user can enter at a time and exchange messages with the librarian. **Advantages** of using chat online reference are as follows:

- It is like live reference. Librarian can talk to user directly.
- Librarian can conduct a reference interview on the spot by exchanging series of short messages to get better idea of what the user wants.
- It eliminates the problem of mishearing what is said.
- It is helpful for those with hearing or speaking impairment.
- User can save text of chat session and refer to it later.

Disadvantages of chat software are as follows:

- In chat reference, librarian can write and explain to the user to go to a specific address on the Web to find information, but can't actually take her/him there or be with her/him through a database search whereas it is possible with in-house reference service.
- More time consuming than voice communication, because librarian has to type everything out. Spelling and typing errors also might creep in.
- User might not have that much patience as s/he expects everything to be instant, efficient and convenient.

- If user logs off prematurely, it may not be immediately apparent to the librarian, specially if s/he is busy looking for required information in relevant sources.

Some of the limitations of the general chat softwares have been solved by '**Virtual Reference Softwares**'. These softwares are modification of 'Web-based Contact Centre Software' specifically designed to make online reference services easy, quick and cost effective. Currently more than 30 versions of virtual reference software are in use. The new softwares are constantly being introduced and existing products are being refined. Some of the commercial virtual reference softwares are QuestionPoint, Virtual Reference Toolkit, 24×7 Reference, Convey System, Docutek, etc.

These Virtual Reference Softwares, in addition to fully supported chat module offer many other facilities like:

- 24×7 technical support;
- Online training for librarians;
- Private and secure communication between users and librarians;
- Complete session transcripts, including URLs are e-mailed to both the user and librarians at the end of each session. A copy of the transcript is also stored in the system database for future reference and analysis;
- Queuing features which let users and librarians to know how many people are waiting to be helped;
- Push technologies allowing librarians to send web pages directly to users' desktops;
- Co-browsing facilities, allowing users and librarians to search through a database, catalogue or website simultaneously. This facility allows librarian to teach online more easily;
- Conference facilities allowing the librarian to conduct a group instruction;
- Customisation of software;
- Generating weekly statistical reports;
- Ability to transfer questions to the participating libraries in the network in real-time, for shared and collaborative virtual reference service; and
- Provide multilingual services e.g. QusetionPoint offers services in 20 languages.

Many libraries provide virtual reference service on stand alone basis. Some libraries provide this service on collaborative basis to ease the impact of software cost and staffing for extended hours. On an international level, Library of Congress and OCLC (Online Computer Library Center), Ohio launched collaborative virtual reference service using QuestionPoint software, as a pilot project in the year 2000. Presently, QuestionPoint service (formerly known as Collaborative Digital Reference Service), is one of the largest and most geographically distributed collaborative virtual reference service in the world. More than 260 libraries of all types in 21 countries are using QuestionPoint virtual reference service. There

are several benefits associated with collaboration. The first is the ability to offer virtual reference service on time share basis. For instance, an Australian/New Zealand – U.S. collaboration offers 24x7 service without staffing nights in either location. Because of 12 hours difference in the time zone, each location can cover the other’s night hours. Second is automatic building of a database of all questions and answers, thus providing re-use possibilities, and options for self service by users. QuestionPoint cooperative virtual reference supports multilingual reference transaction. It has Question and Answer knowledge base that is carefully reviewed and maintained by cooperative contributors.

As collaborative virtual reference services continue to evolve, the need was felt for some guidelines and standards for operating these services. Official guidelines and policies for collaborative virtual reference service have started appearing. The prominent groups involved in creating virtual reference guidelines are International Federation of Library Associations and Institutions (IFLA), Virtual Reference Desk (VRD), National Information Standards Organization (NISO), and Machine Assisted Reference Section (MARS) of Reference and User Services Association (RUSA) of American Library Association. In addition, the QuestionPoint service has issued member guidelines.

Virtual reference service offers users a convenient, high tech way to connect with library’s information professionals. This service is well suited for getting quick facts, verifying references to published sources, finding how to search for needed information in a database or on the Web or getting advice for in-depth searching.

Limitations of Virtual Reference Service

- The cost of the software is high;
- Once purchased, the reference staff has to be trained to use the software. Few reference librarians have experience with chat, instant messaging, web collaboration or any other methods of working live online;
 - More time required to answer the question than that in face-to-face reference service. The average chat question takes 10-15 minutes to answer; and
 - The queries that rely on in-depth consultations from a variety of sources prove difficult for librarian to communicate effectively through virtual reference service.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

3) What is virtual reference service?

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9.5 ANTICIPATORY INFORMATION SERVICES

Types of Services:
Reference Service, CAS,
etc.

Anticipatory information services are provided to library users in anticipation of demand for such services. These services are also called *active information services*. The need for such services was felt mainly due to: i) exponential growth of published literature, particularly in the field of science and technology; ii) interdisciplinary nature of frontline areas of research, resulting in scattering of information in different disciplines; and iii) publication of research results in different types of sources as well as in different formats. As a consequence of the growth in volume, diversity, and complexity of the information sources, scientists, technologists, researchers and managers faced problems in accessing information and in keeping themselves abreast of the latest developments in their areas of interest. To solve this problem, the libraries, particularly scientific and technical libraries, started providing information services to the users, particularly to the researchers. Now, not only S&T libraries, but all kinds of libraries and information/documentation centres, are offering some form of anticipatory information service, depending upon the needs of their clients.

To provide these services, user's information needs are assessed and then services are designed accordingly. Initially, the service is provided on trial basis and when response is satisfactory then service is regularised. The following types of services are offered:

- Current Awareness Type
- Condensation Type
- Readers Advisory Service
- Information Literacy
- Web-based or Internet-based services

You have been provided an overview of above mentioned services in Unit 8 of this course. In this section we will elaborate on current awareness type and condensation type of services.

9.5.1 Current Awareness Type

Current awareness type of services are provided to keep users abreast of current developments in their respective field of interest. This involves scanning newly available documents in print as well in non-print form, selecting items relevant to the needs of individual or group of users, recording and disseminating them to the users on regular basis. Current awareness service (CAS) is an ongoing service that enables one to monitor new information on regular basis. Current awareness type of services meets the current information needs of the users.

Characteristics of Current Awareness Service

- The purpose of this service is to alert the user about recent developments in her/his area of interest as early as possible.
- Since time is the major factor in the preparation of this type of publication, it generally contains list of journal articles, book titles, etc. with no annotations or abstracts.
- The presentation of items of information is such that it facilitates scanning.

- It has newspaper type approach, hence, the entire list is meant for scanning.
- The service is not confined to a very specific narrow subject area but covers a broad area in a particular subject discipline.
- Since the list is not meant for permanent use, therefore, no attempt is made to do extensive indexing etc.

Types of Services

Types of services offered under this category are:

- Accession List / Current Awareness List/Documentation Bulletin
- Title Announcement Service/Contents-by-Journal Service
- Selective Dissemination of Information
- Research-in-Progress Bulletin
- Newspaper Clipping Service

i) **Accession List/ Current Awareness List/Documentation Bulletin**

These types of current awareness services are most commonly offered by libraries. Accession list basically covers latest books acquired by the library. Apart from displaying the latest publication in the library, accession list is brought out regularly (fortnightly or monthly) to inform the users about the latest additions to the library. In documentation bulletin or current awareness list, primary journals and other sources of current information received in the library are scanned, bibliographical details of journal articles and other items of interest are noted down, classified or grouped under broad or narrow subject headings and circulated to the users at periodic intervals.

ii) **Title Announcement Service/Contents-by-Journal Service**

In a research environment, there is constant need to note new research findings that would stimulate or contradict or point towards more productive direction of research for the researchers. New research results are published in primary research periodicals, in dissertations and presented in the conferences, etc. Primary research periodical is the most preferred medium used by the researchers to communicate their research findings and keep themselves abreast of the latest developments in their area of research. Researchers, therefore, look forward to access latest published journals in their area of interest. To meet these information needs of researchers, current awareness type of service is provided by the library, documentation centre or commercial publishers. In **Title Announcement Service** articles of required journals are selected and arranged under broad subject headings or classified with full bibliographical details and disseminated to the users periodically as print publication or e-publication. This helps the user to know what latest has been published in her/his subject area of interest.

Another type of CAS is **Contents-by-Journal Service** or Table-of-Contents (TOC) service. Here, contents pages of latest journals in broad subject area (like chemical sciences, physical sciences, life sciences, etc.) are duplicated, arranged journal wise and disseminated to the users as a regular service. As stated earlier, primary research journals are a predominant medium for communicating new information, this type of service helps the users to know of the recent articles published in their journals of interest. Another reason behind offering contents-by-journal service is the fact that users tend to value certain journals very high

and look forward to browsing through issues of these journals as soon as they are published. The contents page service enables them to know the titles of articles published in their journals of interest. This type of CAS service is quickest and cheapest to be produced by the library. This involves photocopying of the table-of-contents of latest journals received in the library, duplicating them and circulating to the researchers weekly, fortnightly or monthly as required. 'Current Contents' produced by Institute of Scientific Information is an example of commercial CAS service. Current Contents are produced in seven broad subject areas like Life Sciences, Clinical Medicine, Social and Behavioral Sciences, Arts and Humanities, Engineering, Computing and Technology, Agricultural, Biological and Environmental Sciences, and Physical, Chemical and Earth Sciences.

Disadvantages of CAS

- Contents-by-Journal service has certain disadvantages. In this service user generally browses contents pages of journals of her/his interest only, so s/he misses out other articles which may be useful to her/him but are present in other journals. This is not the case with title announcement service, where articles of same subject from different journals are brought together under a common subject heading or classification scheme.
- User has to scan the entire list to find articles which may be useful to her/him, as the service is based on broad subject area.
- Since this type of service is based on only titles of the articles without an annotation or an abstract, it is at times difficult to determine the relevance of the article.

Some of the above mentioned disadvantages of CAS are solved by Selective Dissemination of Information (SDI) service, electronic CASs and other condensation services provided by the present day libraries, commercial publishers, and database producers in an electronic environment.

iii) Selective Dissemination of Information (SDI) Service

SDI service is based on the concept of personal service. It is directed towards individuals or a research group working on the same research project in an organisation. It is a personalised current awareness service, where newly received items of information are matched with user's interest profile, only those items are selected which match with the user's profile, and are notified to the user on regular basis. The concept of SDI service was put forth by a computer scientist, H. P. Luhn in 1961. According to him "SDI service is that service within an organization which concerns itself with machine-assisted channeling of new items of information from various sources to those points within the organization where the probability of usefulness in connection with current work of interest is high."

SDI service started when computers were used for handling information in the mid 1960s. Indexing and abstracting services first used computers to print their paper products. They created computerised files on magnetic tapes that were interpreted by computers and printed their products. These computerised files could be read by computers for other purposes also. Companies and Government agencies developed computer software that could manipulate information on these tapes in new ways. This software allowed searching the computerised files

called databases for indexed terms or group of terms on the computer and retrieve articles bearing these terms. Libraries started using these databases to provide different services to their users including SDI service.

SDI system comprises six components viz. user profile, document database, matching mechanism, notification, feedback mechanism, and modification of the profiles.

User Profile: To provide SDI service first user's profile is created. The expression of user interest as a combination of subject and non-subject terms is called user profile. Here, user is asked to specify her/his subject interest, names of persons and organisations whose work relate to her/his field of interest and details of some articles s/he found most useful in her/his current area of research. This information is used to select terms which specify user interest most precisely. The terms to describe user's interest are drawn from the same indexing vocabulary that is used by the document database.

Document Database: It is a computerised file containing recent documents with complete bibliographical details along with the terms representing subject content of the documents. The terms chosen to describe document contents are usually drawn from a thesaurus i.e. controlled vocabulary.

Matching Mechanism: At fixed intervals, which may be weekly or fortnightly, user profile and document profile are compared by a software system. As per the instructions, whenever a close match is observed between the user profile and the document record, the details of both the records are noted by the system.

Notification: Each individual user is sent notification from the system whenever a close match is observed between her/his profile and document record. The notification is sent to alert the user about the recent items of her/his research interest added to the document database. It may include citation of the documents or citations with abstracts or keywords.

Feedback Mechanism: Most important feature of SDI system is its feedback mechanism. Here, user assesses the relevance and usefulness of the items received by her/him through the system and provides regular feedback.

Modification of Profiles: Feedback from the users is analysed and if required the user profile is modified or readjusted.

The title announcement service and contents-by-journal service are subject oriented services. They are on broad subject area and serve several individuals. Here, each individual has to browse through the entire list to select the items of her/his interest whereas SDI service, which is oriented towards user's current research interest, provides only those items which are most useful to the user. This type of service not only saves the efforts and time of the busy researcher, but also ensures all relevant items of information are brought to her/his notice as quickly as possible.

iv) **Research-in-Progress Bulletins**

Types of current awareness services we have discussed so far alert the users about recently published information in their subject areas of interest. Research-in-Progress type of publication is another type of CAS which provides information

on the current R&D (research and development) activities in various research institutions in a country or in the world. Such type of publication or a database provides details of on-going research projects in an institution, names of principal and associate researchers of each research project, funds and sources of funds of the project, duration of the project and special equipment in use, if any. In addition, it provides a brief description of the progress of the project. Such types of publications are generally brought out by a parent body which funds or controls a group of research organisations like CSIR, ICMR, ICAR, etc. Details of the projects are provided by the R&D institutions under that parent body. For example, Department of Science and Technology (DST) provides year wise details of R&D research projects in S&T approved for funding by the Department on its website. DST has also brought out computerised database of intramural R&D projects in S&T institutions in India in the year 2000 and the database was updated in the year 2005. The work was carried out by NISCAIR with the financial support from DST. Similarly, ICMR (Indian Council of Medical Research) has Online Searchable Project Information System which provides details of extramural research projects funded by ICMR. The database is searchable by subject, title of the project, name of the investigator, name of the institute and the year of grant. ICMR has also brought out a publication entitled 'An overview of international collaborative projects in biomedical research'. The publication provides details of research projects approved for funding by HMSC (Health Ministry's Screening Committee, Ministry of Health and Family Welfare, Govt. of India) from 2000 to 2007 for international collaboration of biomedical research. Another example of research-in-progress service is CARIS (Current Agricultural Research Information System) of Food and Agriculture Organization (FAO), which is international in its scope. It covers ongoing research projects in agricultural sciences and technology in 240 national, international and intergovernmental organisations in the world, who are members of AGRIS (Agricultural Research Information System) of FAO. Research-in-progress type of services, besides providing current awareness, have several other benefits also as stated below:

- Assist the researcher to contact experts as well as institutions currently working in her/his area of research;
- Help the researchers in exploring the priority areas of research;
- Avoid duplication of research efforts; and
- Help planners and policy makers to identify areas of research for funding purposes.

v) **Newspaper Clipping Service**

Newspapers since their inception in 1700s have been playing a significant role in keeping the public well informed on the recent happenings around the world. Newspapers carry useful information for everyone, from housewives to the top officials of corporate houses as well as government organisations. Being aware of the importance of newspapers, libraries and documentation centres have been providing information services based on newspapers. One such service is newspaper clipping service. Under this service, libraries provide important news items of interest published in national and international newspapers, to the organisation. To provide the service, selected newspapers are scanned everyday and news items that are important for the organisation are selected, cut and pasted

on plain paper or card. Each news item is assigned a subject heading or class number. At periodic intervals, e.g. daily or weekly, these news items (called clippings) are arranged by subject headings or class number and circulated to the users. In small organisations the clippings themselves are circulated to the key people in the organisation. In large organisation with more number of people, news clippings are duplicated and disseminated to the users in the form of a bulletin. Newspaper clipping service is quite common in media libraries and libraries of government departments, industrial organisations and financial institutions.

E-News Clipping Service

Earlier, entire process of preparation and dissemination of newspaper clipping service was carried out manually. Nowadays, the service is provided electronically by many libraries, information centres and commercial operators using ICT and web technologies. This has improved the access, delivery and searching of clippings in a web environment. A number of softwares are available for providing this service. For example, National Informatics Centre (NIC) library has developed new application software called “NewsNIC” for providing e-news clipping service. The software provides a web-based full-text access to news items using web interface. MCIT (Ministry of Communication and Information Technology) libraries are using this software to provide e-news service online to their clients staying in different parts of the country. News items covered in the service are related to information technology, telecommunication, and ICT. The software is available free to all organisations of government, semi-government and public sector undertaking. There are several commercial e-news clipping service providers at national as well as at international level. In India, ‘Indianmediaclearing’ (www.indianmediaclearing.com/) offers news monitoring and clipping service. It monitors Indian print media, electronic media (TV), websites and e-papers and provide services. At international level “CyberAlert 4.0” offers worldwide press clipping service in 50 plus languages. CyberAlert monitors 42,000 plus online newspapers, magazines, trade journals, wire services, TV networks and new media to provide service.

vi) Current Awareness Services- Recent Trends

Current awareness services like table-of-contents (TOC) and SDI services have been a regular feature in S&T libraries since long. Now corporate and academic libraries have also started providing these services as basic services to their researchers and educators.

Earlier, through these services, libraries were alerting the users about most relevant recent articles published in their area of research. It was the responsibility of the researcher to follow up and request for the copy of the article s/he would like to read.

With the introduction of automated library systems, libraries using serial check in systems started providing issue alerting services and table-of-contents services to their users through electronic means. Even online database vendors like DIALOG, OVID, BRS have introduced SDI services. These services allowed subscribers to store journal titles and keywords to receive a monthly online notification service. These two trends allowed libraries to build ‘profile’ of journal titles and send the table-of-contents electronically to each user located in different

buildings over the campus networks. This has greatly improved CAS. In the last few years libraries have moved to a web-based environment for providing their information retrieval services. Current trend is to build a custom library portal that utilises e-resource registries which include detailed information about e-resources, how to access them and provide links to these e-resources, for example, links to full-text electronic journals. The advent of e-resource registries has introduced an entirely new aspect of CAS. Libraries can now deliver links to full-text journals and articles within journals. Providing these full-text links is one of the most important trends in CAS. With this facility researcher can get access to full-text journal on her/his personal computer, browse through the article and if found useful, can get it printed. Many libraries have joined e-journal consortia to have access to computerised databases as well as access to full-text journals for their users. Many journal publishers, database producers, aggregators, subscription agents are offering scholarly full-text e-journals services for library consortia. Some of the examples of e-journal consortia and gateways operating in India are UGC-INFONET Digital Library Consortium, CSIR-E-journal Consortium, INDEST-AICTE Consortium, and MCIT Library Consortium. Other electronic CASs offered by the libraries to their remote users are new books alerts, table-of-contents alerts, citation alerts, subject alerts, web page alerts, conference alerts and many more. The mode of delivery is through e-mail, RSS feeds and other electronic means.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

4) What do you understand by current awareness type of services? Mention their characteristics and types of services provided under this category.

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9.5.2 Condensation Type

In this type of service, the contents of the current literature on a required subject field are condensed or summarised along with full bibliographical details of the document. This enables the user to identify the basic contents of the document quickly and determine its relevance to her/his research area of interest. At times, a well prepared summary or abstract serves as a substitute for the document. This saves time of a busy user. Types of services under this category are:

- Abstracting service
- Digest service
- Other value-added information services

i) Abstracting Service

This service is concerned with providing abstracts of recently published journal articles, research reports, papers of conference proceedings, patents, standards, and dissertations along with full bibliographical details of each item. The service sometimes covers current as well as earlier published literature depending upon the needs of the users. Since the abstract provides concise summary of the entire contents of the document, it enables the user to determine its relevance and helps her/him to decide whether to read whole document or not. Library professionals with subject knowledge prepare the abstracts. These days commercial abstracting services are available in most of the disciplines and all of them are in machine-readable form. Libraries search the requisite databases and provide the service and supplement it with in-house resources. Commercial indexing and abstracting services systematically scan the current primary literature (like periodicals, conference proceedings, research reports, etc.) on a particular subject field, select the relevant items, index or summarise each item, and arrange them in a helpful sequence for location and identification of individual item. These services are provided at regular intervals like weekly, fortnightly or monthly. Such services have extensive indexing system to facilitate searching. Current issues meet the current awareness needs of the users. When in print form, annual, five-year or ten-year accumulation of indexes was carried out for retrospective searching. Now, most of these indexing and abstracting services are available in machine-readable form and merging of earlier records and new records have become possible. For example, Library and information Science Abstracts (LISA), a fortnightly international abstracting and indexing service published since 1969, was earlier a print publication. Now in database form, it covers all the records (343,293 as of August 2011) from 1969 till date. Update frequency of the database is every two weeks, with more than 500 records added per update. The database is searchable online on the Web with advanced searching capability of 17 indexed fields. Such type of indexing and abstracting services are of permanent nature and can be used for current as well as retrospective searches. Hence, these services serve current as well as exhaustive information needs of the users.

ii) Digest Service

This service is generally provided by the libraries of industries, corporate houses and commercial organisations. The latest scientific, technical, marketing and commercial information is essential for the growth of industries. The people in an industry, corporate houses and commercial organisations require information on new products, machinery, manufacturing processes, management techniques, etc. to keep themselves abreast of latest developments in their areas of interest. However the exponential growth and proliferation of new information in wide range of sources and in diverse formats make it difficult for technical workers and executives in these enterprises to keep track of the latest developments in product design, manufacturing processes, management techniques and market trends. To meet these information requirements, digest service is provided.

The digest service is an information service which selects, evaluates and condenses information gathered from different sources, arranges it systematically under headings and subheadings to facilitate quick reference and disseminates to the personnel of an enterprise. According to Guha “digest is actually a fuller representation of a document, rewritten for a purpose or suit the requirements of different people, but intended to serve as a complete substitute for the original

document". The digests are prepared either on demand or in anticipation for quick and ready reference with subject scope spanning from literacy to science and technology. The digests covering science, technology and management aspects are called technical digests. Technical digests are useful sources of information for managerial and technical workers in an industry. Different categories of workers in an industry require different types of information. Top managerial personnel require product-oriented information such as technical, commercial and marketing information. Middle/supervisory level managers require information on problem solving, decision making and on new production processes/techniques which can maximise production. Workers/operators require information on solving technical problems and new ideas and processes which can help them in day-to-day working. Three different types of digests are prepared for top management, for middle/supervisory management and for workers/operators, keeping in mind their different information requirements. A well planned technical digest service not only saves time of the manager but also helps her/him in decision making. For middle/supervisory level managers the service helps them in problem solving and increasing production, while for workers/operator level people it assists them in solving day-to-day technical problems.

iii) **Other Value-added Information Services**

The services which libraries and information centres provide can be broadly grouped into two functional levels of services. At the basic level, libraries and information centres disseminate information and material acquired by them, answer reference queries and provide CAS from latest journals to keep users informed of the current development in a particular discipline. At the next level, special libraries and information centres offer complex literature searches in specific subject field, carry out retrospective searches and provide bibliographies, CAS and SDI services to individuals or group of users based on user's profile, index, and abstract or extract information to disseminate it to users in response to request or in anticipation. Some information centres, particularly in science and technology, provide highly specialised services or so called value-added services which involve analysis, synthesis and evaluation of information for the users. This evaluated information is condensed and repackaged in appropriate form for a well defined user group. Such information centres came to be known as information analysis centres and data centres.

Let us examine what is the value addition in information services. Based on the views expressed in library and information science literature, value addition aspect of information services can be organised into the following groups:

- Selection and organisation of information
- Subject and contents analysis
- Links to e-resources including full-text e-journals
- Information analysis, evaluation, synthesis and repackaging

Selection and organisation of information

In indexing and abstracting services some form of **value addition** is carried out by selecting and bringing together in convenient form items of information scattered over wide range of primary sources (such as primary research periodicals,

research reports, conference proceedings, theses and dissertation, etc.). In addition, these services monitor the literature of a subject published in diverse languages. For example, Chemical Abstracts Service monitors the literature of chemical sciences and technology published in 50 languages. Without these services it would have been practically impossible to access the information from a single source at one place.

Subject and contents analysis

The basic process involved in indexing and abstracting of information is 'analysis' of information. In indexing activity it is 'subject analysis' and in abstracting activity it is 'contents analysis'. Both subject analysis and contents analysis are intellectual processes which add value to these services. The subject analysis provides appropriate keywords for searching and accessing the documents and contents analysis provide precise summary for identifying the relevance of the document.

Links to e-resources including full-text e-journals

Now most of the libraries have moved to web environment for information retrieval as well as for providing services to their clients. Keeping in view users' requirements, libraries are providing access to wide range of e-resources like databases which include bibliographic, numeric as well as textual databases. For example, Information Environment Service Registry (IESR) is a free catalogue of electronic resources of United Kingdom. Resources types include databases, e-learning material, e-books, e-journals, repositories, research publications and image collections. IESR contents are multi-disciplinary with particular strengths in health and social sciences. It is a machine-readable registry, which provides quality and constantly updated description of e-resources and methods of accessing them. Table-of-Contents service of many libraries provides links to full-text electronic journals and articles within journals for browsing as well as for printing by their clients. Providing full-text links to e-resources is most important value addition service provided by the present day libraries and information centres.

Information analysis, evaluation, synthesis and repackaging

In indexing and abstracting services, though subjects and contents of each document are analysed, no critical evaluation is carried out of the basic contents of the documents. Resultant product or service is factual, non-critical and non-evaluative. Now the emphasis is on providing users timely, authoritative, evaluated and consolidated information in convenient form, which users can understand, assimilate and use immediately for problem solving and decision making. This is another type of value-added service which is provided by many specialised information centres and data centres.

The following activities are carried out to provide this type of service:

- Study the target users' needs;
- Selection of relevant information sources;
- Evaluation of information contained in these sources;
- Analysis and extraction of most relevant information contained in these sources;

- Synthesis of extracted information, which involves arranging and merging of extracted information from many sources and compression of information into structure and in the form which is most suited for target user;
- Restructure and package the information, if necessary. Restructuring process deals with the contents or substance of information, while packaging deals with the form of its presentation; and
- Dissemination of the product/service and getting feedback from the users for improvement.

These value-added services cover a wide range of products. Some of them are state-of-the-art reports, market reports, assessment reports, briefing paper, data compilation and tables, executive summary, brochures, posters, etc. Some of these value-added products/services are directed towards specialists (e.g. S&T reviews, state-of-the-art reports), some towards people in business and industry (e.g. business, commerce and market summaries), some are for farmers and general public (e.g. extension services, health services in the form of films, manuals, posters, brochures, etc.).

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

5) What do you understand by value-added information services? Enumerate the type of value addition carried out in these services.

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9.6 ORGANISATION AND MANAGEMENT OF REFERENCE AND INFORMATION SERVICE

American Management Association defines management as “The guiding of human physical resources into dynamic organization units that attain their objectives to the satisfaction of those served, and with high degree of morale and sense of attainment on the part of those rendering service”. This definition explicitly focuses on target audience. Similarly, in reference and information services division of any library and information centre that serves the users, no effort should be spared to meet the information needs of these users to their utmost satisfaction. This requires organisation and management of these services with efficiency and speed. Almost all large and middle size libraries entrust these services to a separate division. However, in small libraries there is no separate division. The librarian herself/himself provides reference service.

Management of a reference division can be achieved effectively by following the different elements of management viz., planning, organising, staffing, directing, coordinating, reporting and budgeting.

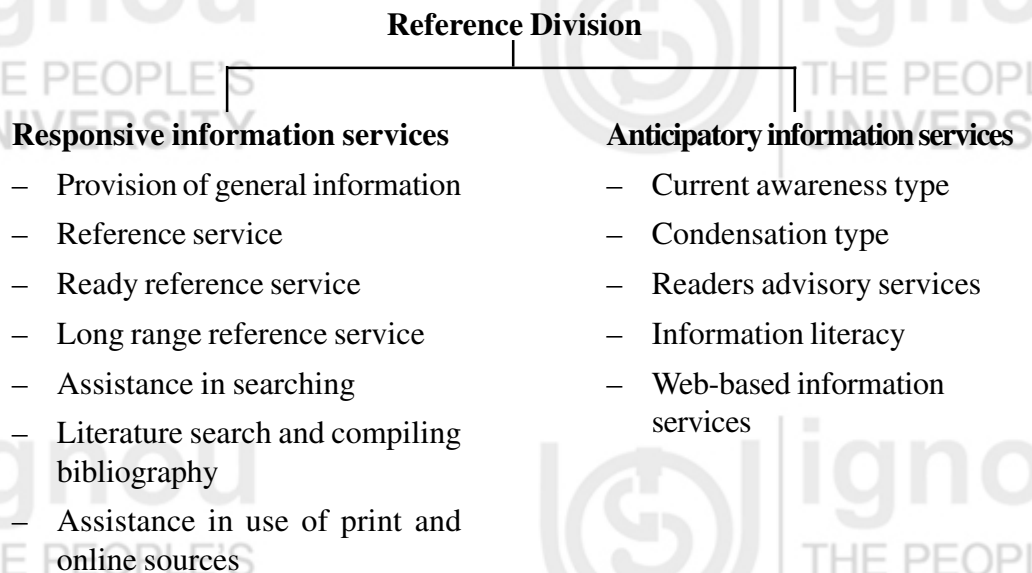
Planning

Planning is a process that deals with drawing up of a detailed working programme for an organisation or a division for meeting short term as well as long term goals. Basic resources of a reference division must be carefully planned and developed during planning process. As most of the reference and information services are of a continuing nature, there must be ample provision in the plan document for uninterrupted flow of resources that include updated reference materials both in print and electronic form, personnel to provide the service, physical facilities including technical and technological resources like computers, and telecommunication equipment. The planning of a reference division would cover the following details:

- Assessments of users' information needs;
- Types of services to be offered, both responsive and anticipatory;
- Reference collection in print as well in electronic form, their organisation and maintenance;
- Personnel for managing and providing the services;
- Physical facilities including computers and telecommunication networks;
- Getting feedback and evaluation of services; and
- Providing details of financial liabilities.

Organising

This refers to the creation of an operational structure for the reference division. The structure is determined on the basis of analysis of work and all the different activities of the division. An illustrative organisational structure is as follows:



Staffing

Staffing refers to the type, quality and the number of persons required to perform various functions of the division. The head of the division with good academic background and professional experience must have the competence and ability to lead the division. Other staff members must necessarily be more multidisciplinary to cater to different varieties of services ranging from traditional in-person desk reference to 24×7 remote access services. Reference managers, faced with rapid

changes, must be motivated to take on new and unexpected roles that could involve partnership with libraries and negotiations with web developers, electronic database vendors, and e-journal publishers.

Directing

Traditionally, head of the division should give direction to the staff in every aspect of work of the division and get the best out of them. But, due to rapid technological changes, the hierarchy is flattening out to accommodate new vibrant roles and services necessitated by the new learning style. These new roles cover electronic resource management, web management, reference marketing, virtual reference service, etc. Now, self-directed or team-based management is being practiced in the reference division, where all members of the team are given an opportunity to learn each other's job with the idea of making reference services more integrated. The trend now is towards "self-regulating management team" that adopts a system of rotating coordinators rather than head of reference division to manage the team.

Co-ordinating

Reference division is connected to many other divisions of the library, such as technical services division, circulation, reading room, stacks and maintenance, and serials division. Co-ordination with all these divisions is absolutely necessary for effective functioning of the reference division and to face the users with confidence and alertness.

Reporting

Reports on the performance of the division, its achievements and shortfalls during a year or at shorter intervals, are essential to build the image or reputation of the division. These reports carry vital details on the various activities of the division in an analysed form.

Finance and Budget

As most of the services offered by the reference division are of a continuing nature, there should not be any paucity of finance in operating any of the services, particularly those which need financial support. Budgetary allocation should be made for each of the activities, on the bases of production and distribution for a given period, usually annually.

9.7 SUMMARY

This Unit deals with responsive and anticipatory information services.

In responsive services, the origin, growth and development of reference service has been discussed in detail. A definition of reference service encompassing its scope and nature is provided.

The Internet and the World Wide Web has introduced a powerful way of providing and accessing these services. Libraries and information centres are moving from providing traditional in-house reference service to virtual reference service to reach remote users beyond the four walls of the library. Details of virtual reference service, how it is provided, its advantages and limitations are discussed. The Internet is increasingly being used as a reference tool. The advantages and limitations of using the Internet as reference tool are highlighted.

Origin, growth and development of information service have been traced along with the basic differences between reference service and information service.

Various types of anticipatory information services such as current awareness services, indexing and abstracting services and digest services, including value-added services have been dealt with. Impact of technology on the provision of these services is highlighted.

Organisation and management of reference and information services in terms of seven elements of scientific management, with necessary changes in these elements due to technological innovations are dealt with.

9.8 ANSWERS TO SELF CHECK EXERCISES

- 1) Reference service in the library is any assistance provided by library staff to users seeking information. It covers direct services such as searching for information, providing directional guidance, helping in research, compiling bibliography on request, etc. and indirect services like selection and maintenance of reference material, preparation of guides and aids to the use of library and library material. Reference service is concerned with direct personal assistance to the library users seeking information whereas information service is provided in anticipation of various needs of users of library and information centres.

The differences between reference service and information service can be enumerated as follows:

Sr. No.	Reference Service	Information Service
1	Traditional service	Non-traditional service
2	Emphasis to provide documents	Emphasis to provide information
3	User is given the material or directed to locate the material	Attempt is made to provide exact information
4	Aim is to instruct the user	Less concerned towards instructing the user
5	Service provided on demand	Service provided in anticipation
6	Passive service: library staff waits for the user to approach and make demand	Active service: library staff does not wait for the user to come but provide service to keep user well informed

- 2) The Internet has emerged as an omnipresent reference tool in the 21st century. Most of the print reference sources are available online on the Internet. Online sources provide updated contents, more advanced search options, download and print option. Despite all its advantages, the Internet is not considered to be as a full-fledged reference tool because of its inherent limitations which are as follows:

Lack of quality control: Anyone can write anything, from anywhere in the world and leave it for any amount of time for any one to read on the Internet. On the other hand, in print publications, there is a built in mechanism for quality control. For example in scholarly journals each article is reviewed by peer group and edited thoroughly before it is published.

Burden of evaluation: Because of lack of quality control, the onus of evaluating websites falls on the user herself/himself. Since user is accustomed to accept all printed material as valid information, using information available on the Internet without evaluation may lead to pitfalls.

Full-text information is not free: Full-text journals are not always free to the Internet users. Quality research articles are mostly found in expensive subscription databases.

Volatility: With contents being added, modified, deleted constantly on the websites, which make the websites volatile. It becomes an imperative to constantly check the quality of website and its contents before using it for research purposes. At times, some websites disappear suddenly or change their domain name making it difficult to trace them. This does not happen with print publications, their contents remain static and publication can be safely cited.

- 3) The virtual reference service can be defined as delivery of reference service via the Internet to library users who are outside the physical confines of the library. Mode of delivery for virtual reference services are e-mail, electronic forms, real-time chat communication, videoconferencing, voice over IP, co-browsing or instant messaging. E-mail and chat communication are the most heavily used type of virtual reference service.
- 4) To keep users abreast of current developments in their respective fields of interest current awareness types of services are provided. This involves scanning newly available documents in print as well in non-print form, selecting items relevant to the needs of individual or group of users, recording them and disseminating to the users on a regular basis. Current awareness type of service is an ongoing service that enables one to monitor new information on a regular basis. Current awareness types of services meet the current information needs of the users.

Characteristics of Current Awareness Service

- The purpose of the service is to alert the user about recent developments in her/his field of interest as early as possible.
- Since time is the major factor in the preparation of this type of publication, it generally contains list of journal articles, book titles, etc. with no annotations or abstracts.
- The presentation of the items of information is such that it facilitates ease of scanning.
- It has newspaper type approach, hence, the entire list is meant for scanning.
- The service is usually not confined to a very specific narrow subject area but to a broad area in a particular subject discipline.
- Since the list is not meant for permanent use like newspapers, no attempt is made to do extensive indexing etc.

Types of Services

Types of services offered under this category are:

- Accession List / Current Awareness List/Documentation Bulletin
- Title Announcement Service/Contents-by-Journal Service
- Selective Dissemination of Information
- Research-in-Progress Bulletin
- Newspaper Clipping Service.

- 5) Value-added is a term which is widely and increasingly used in the context of information systems and services. If information services are related to use and users, then overall timely, current, ease of use and accuracy of information are considered most important. These factors are certainly considered valuable for judging the relevance of the services for the users. To make the services highly useful to the users, certain additional features are offered over and above the normal ones, this can be called as value addition. Some information centres, particularly in science and technology, provide highly specialised services or so called value-added services which involve analysis, synthesis and evaluation of information for the users. This evaluated information is condensed and repackaged in appropriate form, which users can understand, assimilate and immediately use for problem solving and decision making. These services and products are prepared for well defined target users. For example, some of these products/services are meant for specialists (e.g. S&T reviews, state-of-the-art reports), some for people in business and industry (e.g. business, commerce and market summaries), some for farmers and general public (.e.g. extension services, health services in the form of films, manuals, posters, brochures, etc.).

Based on the views expressed in library and information science literature, value addition aspect of information services can be organised into the following groups:

- Selection and organisation of information
- Subject and contents analysis
- Links to e-resources including full-text e-journals
- Information analysis, evaluation, synthesis and repackaging

9.9 KEYWORDS

Blog : Short for web log, a frequently updated website about a particular topic that contains dated entries in reverse chronological order i.e. with newest entries at the top.

Citation Alerts : A current awareness service which alerts the user by e-mail whenever an article selected by the subscriber is cited by new article that enters the database. ‘ScienceDirect’ of Elsevier Science and ISI Web of Knowledge offer this service.

Conference Alerts : A conference alerting service that sends e-mailed updates of conferences matching user's interests, with available dates and preferred destinations. For example, Conference Alerts and Conference Atlas offer this service.

E-Resource Registry : An online catalogue of e-resources that provides description of e-resources and method of accessing them.

Portal : A network service that brings together contents from diverse distributed resources using technologies such as cross searching, harvesting and alerting and collates them into an amalgamated form for presentation to the user.

RSS Feed : Really Simple Syndication feed is a format for publishing web contents. It is used to "push" timely information and updates to people who subscribe to it. For example, RSS feeds of Times of India newspaper.

Web Page Alerts : It is a tracking service that tracks online new contents by monitoring web pages and e-mails to users when it locates new items. For example 'GigaAlert' (formerly known as 'Google Alerts') offers this service.

Types of Services:
Reference Service, CAS,
etc.

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UNIT 10 LITERATURE SEARCH AND DATABASE SERVICES

Structure

- 10.0 Objectives
- 10.1 Introduction
- 10.2 Users their Information Needs and Literature Search
- 10.3 Literature Search – Definition
- 10.4 Literature Search and Compilation of Subject Bibliography
 - 10.4.1 Search Process: Manual
 - 10.4.2 Search Process: Computer-based
 - 10.4.3 Advantages of Computer-based Searching over Manual Searching
- 10.5 Electronic Databases
- 10.6 Types of Databases
- 10.7 Database Services
 - 10.7.1 Publishers of Secondary Periodicals
 - 10.7.2 Publishers of Primary Periodicals
 - 10.7.3 Aggregators
 - 10.7.4 Digital Libraries
 - 10.7.5 Open Access E-Journals
 - 10.7.6 Institutional Repositories
 - 10.7.7 Database Services- Emerging Trends
- 10.8 Summary
- 10.9 Answers to Self Check Exercises
- 10.10 Keywords
- 10.11 List of Abbreviations
- 10.12 References and Further Reading

10.0 OBJECTIVES

You have studied in Unit 9 of this course that indexing and abstracting services are essential tools to access published literature. In this Unit, we shall discuss methods and techniques of using these tools for searching the literature. We will cover both manual as well as computer-based searching. In addition, different types of databases and their services will be covered.

After reading this Unit, you will be able to:

- differentiate between ‘reference search’ and ‘literature search’;
- discuss the steps involved in conducting manual as well as computer-based search;
- describe the types of databases available for online searching; and
- explain the range of database search service providers and the database services offered by them.

10.1 INTRODUCTION

In Unit 8 of this course you have been provided an account of information needs of library users and types of services library and information centres are offering to meet these needs. Unit 9 elaborated on reference service, current awareness services, indexing/abstracting and value-added services.

This Unit will cover two areas viz. literature search and database services. In literature search, the methods and techniques of literature search in response to varying information needs of the users and different steps in compilation of subject bibliography using manual as well as online resources will be described. In second area the different database services, offered by primary and secondary journal publishers, online database vendors and others like subscription-cum-aggregation agencies, portal-cum-aggregation agencies, will be dealt with.

10.2 USERS THEIR INFORMATION NEEDS AND LITERATURE SEARCH

The prime objective of any library and information centre is to meet the information needs of its clients as early as possible and in most economic and efficient manner. The user may be a layperson who needs information for self educational purposes or for problem solving, a student who needs information to supplement her/his textbook studies or for project work, a teacher who needs information for teaching and research work, a professional who needs information to pursue her/his career efficiently, a manager who needs information for a new product line or for improving existing product, a researcher who needs information for finding out new area for research or for problem solving. The nature and extent of information required by each of them is different.

To meet these information needs of the users, the information institutions provide wide range of services. Literature search is one of such services. Literature search is a systematic search for published material on a specific topic. This service is concerned with searching and locating the documents in response to a specific request from the user. The queries such as I have to write a paper on different breeds of dogs, where can I find information? I have to make a comparative study of communism and capitalism, where can I find the information? Such queries, depending upon user's needs, lead to carrying out *specific searches*, finding the required document(s) and giving it to the user. While in ready reference service the answer is in the form of data i.e. short answer from the reference books, in '*specific search*' type of service, answer is in the form of one or more documents containing the information. Such query is also called 'bibliographic inquiry' or 'bibliographic search'. A bibliographic search is a search to find bibliographic citations to documents that contain the information. This type of service is also known as long range reference service. Queries leading to '*specific search*' constitute the greatest proportion of reference questions in school and academic libraries as well as in many special libraries. The time taken to answer such questions may take 10 minutes to an hour or more. The time factor also depends on what is available in the library, librarian's knowledge of the sources in the library and if the document is to be procured through inter-library loan it may take longer. In ready reference service data or facts are provided, in long range reference service documents, periodicals, or reports containing information are provided.

10.3 LITERATURE SEARCH – DEFINITION

Online Dictionary of Library and Information Science defines literature search as follows:

‘Literature search is an exhaustive search for published information on a subject conducted systematically using all bibliographic finding tools, aimed at locating as much existing material on a topic as possible, an important initial step in any serious research project’. (<http://www.lu.com/odlis/>)

Literature search plays an important role in research activities. Any researcher, while starting any new research project needs to know in detail what has already been published on her/his area of research. Similarly, at the time of reporting the research results, a researcher needs to review the literature to compare the research results with other scholars working in the similar field. This requires an exhaustive search of previously published literature on that subject and compilation of a bibliography. Literature search is also carried out to solve any research problem and to find out how other scholars have handled the same problem. Literature search thus:

- Helps in study and research;
- Avoids duplication of research efforts;
- Helps in solving research problem(s);
- Assists in learning methods and approaches that are appropriate for a particular field of study;
- Helps to demonstrate that the researcher’s contribution is new and different from others; and
- Assists in finding out new areas for research.

To satisfy information needs of researchers (scientists, technologists, social scientists, etc.), at times extensive literature searches are to be carried out in several sources like books, periodicals, non-book material, etc. Sometimes to provide this service informal sources are also consulted. Thus, the literature search in these cases has to be more exhaustive, both in depth and range. Besides bibliographies, other secondary sources like abstracting and indexing periodicals, reviewing periodicals are consulted to find information.

10.4 LITERATURE SEARCH AND COMPILATION OF SUBJECT BIBLIOGRAPHY

Subject bibliographies are compiled by libraries on requests from the users. Sometimes such bibliographies are compiled on regular basis in anticipation of the users’ needs. At times bibliographies are compiled on special occasions, such as during the seminars and workshops, to provide the participants with the latest literature on the subject. University and special libraries offer this service more frequently than the public library.

For literature search, compiling a subject bibliography is very important. A researcher must know the basic steps involved in its preparation. In manual search printed sources are consulted, while in computer-based search computerised

databases are used. Computer database searches are most efficient in identifying published literature on that subject. Computer searches may be supplemented with manual searches of printed sources. To search efficiently for any particular topic, it is important to understand the literature search process.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

1) Define literature search and state what purpose it serves.

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10.4.1 Search Process: Manual

In manual searches printed sources are consulted to find out requisite information. The basic steps in a manual search and compilation of a subject bibliography are as follows:

- 1) Understanding the subject
- 2) Decision on the scope, coverage and period
- 3) Formulation of search strategy
- 4) Scanning (Searching of tertiary, secondary and primary sources)
- 5) Entry making
- 6) Arrangement
- 7) Indexing

Step 1: Understanding the Subject

In this step you should gather information on the specific subject and on related areas under study. For this, subject dictionaries and subject encyclopaedias should be consulted when in doubt. Here personal interaction with the user is also very important, since this will help you to know the scope of the subject and the purpose for which information is required.

Step 2: Decision on the Scope, Coverage and Period

In this step decision is taken on the scope, coverage and period of subject bibliography. In scope, you decide whether bibliography should be comprehensive or selective. Coverage helps you to decide on the types of documents to be covered e.g. periodical articles, conference papers, thesis, research reports, monographs, patents, standards, etc. Period specifies whether bibliography is going to be current or retrospective. For making above decisions, personal interaction with the user

is very important. The personal interaction with the user is known as ‘**Reference Interview**’. The reference interview is more an art than a science, since each reference interview is different as each user and each question is different. One should know the basic elements of a good reference interview and adapt them to match each situation. The overall structure of the reference interview has three phases: i) establishing contact with the user, ii) finding out user’s needs, and iii) confirming that the answer provided is actually what was needed. Doing a good reference interview is a skill that comes with practice. You should be approachable so that user does not hesitate to ask a question, have active listening skills to show interest while interacting with the user to make her/him feel relaxed, develop knowledge of reference sources and continue to build it as it is essential in assisting the users, practice posing questions and ask clarifying questions to elicit more information from the user to help you to better understand the question, and ensure that the question is fully answered. For this, check with the users to see whether they have had their questions answered. This will make users comfortable and encourage them to come again.

For compiling a subject bibliography, the reference interview will help you to know:

- The query thoroughly,
- The purpose for which information is required,
- The background of the user,
- Subject scope, types, and period of the documents to be covered,
- What sources user has already consulted, and
- The time frame within which, information is required.

Step 3: Formulation of Search Strategy

In this step you formulate a systematic plan for conducting a search. First you write a clear and concise topic statement. Next you identify main concepts in the topic. Then select terminology or keywords to represent the main concepts. Here list of subject headings and thesaurus in that discipline can be consulted to find preferred terms to represent the main concepts. Next step is to check whether any bibliography already exists on this topic. If there is one already compiled or published, it will save searching the previous years’ literature. There are many tertiary sources for locating already compiled subject bibliographies. Some examples of tertiary sources are: i) *Besterman’s Bibliography of Bibliographies*; ii) *Bibliographic Index: A Cumulative Bibliography of Bibliographies from H. W. Wilson Company*; iii) *Walford’s Guide to Reference Material*, and iv) *Sheehy’s Guide to Reference Books*. Besterman’s Bibliography of Bibliographies is helpful for searching retrospective bibliographies while other sources help to find more current bibliographies. In the next step you should look for a review article on the topic. A good review prepared by an expert contains comprehensive list of important references. This list can serve as a starting point for the bibliography. The next step is to select appropriate indexing and abstracting periodicals to carry out actual searching. *Ulrich’s Periodical Directory* and *Abstracting and Indexing Directory from Gale Research Corp* are helpful in identifying abstracting and indexing periodicals on the subject. Thus, in literature search, one has to start from tertiary sources to identify secondary and primary sources for searching.

Step 4: Scanning

In this step abstracting and indexing periodicals are searched to identify and retrieve relevant items for bibliography and finally primary sources are consulted to find more recent information.

Step 5: Entry Making

In this step entry is prepared for each item that is identified as relevant. Each entry should be noted down on a card, so that later these entries can be arranged in a systematic order. Each entry should contain sufficient information to identify the document for purpose of bibliography and needs of the intended user. To write the bibliographical details of the document in a standard format, national or international standards may be followed. These standards are as follows:

IS: 2381: 1978: Bibliographical References- Essential and Supplementary Items.

ISO: 690: 1975: Documentation- Bibliographical References- Essential and supplementary elements.

Step 6: Arrangement

The entries thus prepared are arranged in some convenient order to facilitate browsing. The main arrangement should make it possible to use the bibliography without consulting the index. If number of entries in the bibliography is small, the entries may be arranged alphabetically author wise or chronologically by year of publication. But if number of entries is large, it is better to arrange them in classified order or under broad subject headings. The arrangement of material should be suitable for the subject and the targeted users.

Step 7: Indexing

In this step various indexes (title index, author index, subject index, etc.) are prepared to provide multiple means of access to the user. For a small bibliography, there is no need to provide an index. But for a large bibliography author, subject and title indexes may be prepared as appropriate.

Self Check Exercise

- Note:** i) Write your answer in the space given below.
- ii) Check your answer with the answers given at the end of this Unit.
- 2) Enumerate the basic steps involved in manual literature search.

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10.4.2 Search Process: Computer-based

Application of computers and information communication technologies (ICTs) in bibliographical organisation of published literature and its dissemination have

opened up new vistas in searching and retrieving information from the vast store of knowledge quickly and with much more efficiency.

Computer-based search can be traced back to mid 1960s when indexing and abstracting periodicals started using computers to print their paper products. With the requisite software, the magnetic tapes on which the information was stored could be searched to retrieve information from the tapes. However, because of the slow speed, the computers required much time in processing and producing the results. During late 1960s and early 1970s, computer power, speed and memory increased and so did the ability to communicate with remote computers over the existing telephone lines. These developments paved way for online searching. The first major online dial-up service was MEDLINE, the online version of MEDLARS (Medical Literature Analysis and Retrieval System). This was followed by other commercial online services from DIALOG (Lockheed) and ORBIT (SDC) (Walker & James) by early 1970s. At that time, online searches were very expensive and one had to take the help of intermediary to conduct an effective and efficient search. By 1990s, further developments in ICT and coming up of the World Wide Web providing graphic user interface on the Internet with tutorial facilities, online searching became easy even for the novice users.

At present all major primary, secondary and tertiary publications are available in machine-readable form. Most of the national and international abstracting and indexing periodicals are available in four different formats as follows:

- 1) On CD-ROM Disc
- 2) On the Web through the Publisher
- 3) On the Internet via Online Host/Vendor
- 4) In Print

The print version of these periodicals can be searched manually using various indexes provided by the publication. The other three versions are available in electronic database form and can be searched using computers. The electronic databases in all the three formats offer more search options, can be searched speedily, and are updated more frequently than their print counterpart. The difference between Online, Web and CD-ROM versions is their update frequency. Online and Web versions are updated more frequently than their CD-ROM version. In addition, the Web version links the users to related journals, provides URLs and e-mail addresses for link journals and publishers, provides access to journal's information such as tables-of-contents, abstracts of articles, full-text journals and document delivery. It also provides usage statistics.

Basic Steps for Computer-based Searching

Steps involved in searching electronic databases vary from database to database. As each database system has its own custom-built interface that allows specific type of search with specific search operators and specific search commands. With the introduction of web-based graphical user interface online search has become quite easy. Most of the online search service providers and CD-ROM producers offer free training modules, where a novice user can search the database step-by-step and retrieve the required information. To conduct effective and efficient searches one has to familiarise oneself with various search and retrieval options available with specific electronic database before searching. In addition,

there are some basic steps (you must know) for conducting computer-based search for general searching as well as for compiling a bibliography on a specific topic. These steps are as follows:

- 1) Understanding the subject;
- 2) Decision on scope, coverage and period;
- 3) Internet access to online search service arranged;
- 4) Log on to search service provider;
- 5) Select the appropriate database;
- 6) Formulate the search expression;
- 7) Select the appropriate format to display the retrieved records;
- 8) Reformulate the query, if desired; and
- 9) Select the mode of delivery.

First two steps (Step 1 and Step 2) are same as in manual search. Step 3 and 4 are not required while searching CD-ROM databases. You do not need Internet connection to search CD-ROM products. Like print product, the CD-ROM product remains in the library for unlimited use, once it is purchased.

Step 3: Internet Access to Online Search Service Arranged

To search electronic databases online you require Internet connection. To get Internet connection you have to register with Internet Service Providers (ISPs). There are over 183 Internet service providers in India, of them around 40 ISPs have all India status and the remaining are particularly state specific. Some examples of ISPs with all India status are BSNL, Tata Communications (formerly VSNL), ERNET India, Airtel Broadband, Reliance Broadband, etc. These ISPs offer Internet related services from Dial-up Internet access to Broad-band access services. The charges for Internet connection varies based on the type of connection required. In addition to Internet connection, you need to register with online search service provider, which provides access to the databases for searching. Online search service provider may be a vendor like EBSCO, ProQuest or others, which provides access to a number of databases from different publishers, or a publisher providing Web access to its own databases like H.W.Wilson, CAS, etc. This can be done through subscription or licensing agreement. On registration with online search service provider, you get user ID and password. These days online registration is also possible.

Step 4: Log on to the Search Service Provider

This is usually done through the web interface of the online search service provider. At this stage one should know the web address of the search service provider (e.g. for Emerald it is <http://www.emeraldinsight.com/>). To access and search the database one has to enter user's ID and password. Most of the database producers offer online registration as well.

Step 5: Select the Appropriate Database

Next step is to select the appropriate database to search. Most search service providers allow users to browse through their database categories to select the appropriate database(s). The vendor like EBSCO makes available full-text and A/I databases according to user category and institutions like sources for colleges

and university level, hospitals and medical institutions, corporate, Government institutions, K-12 schools and public libraries. This information helps the user to select appropriate database(s) to conduct actual search.

Step 6: Formulate the Search Expression

This requires selection of appropriate terms or phrases for searching the database. This is normally done before the search begins. In computer-based search user is asked to fill a form in which search question is stated. User is asked to write a paragraph on the search topic, give purpose of search, list one or two references, and give names of important people and institutions in the field. All this information helps to know the exact requirement of the user and selection of the suitable keyword(s) for searching the database. Then make a list of keywords and synonyms for searching the database. Many bibliographic databases have their own specialised thesaurus for searching the database. Their thesaurus is available online and one can select appropriate terms and phrases from this for searching the database. At the same time one should have the knowledge of nature, content and structure of database, fields that are searchable, what search facilities are available such as word search or phrase search, and what appropriate operators are there. The search operators and syntax for formulating the search expression vary from one database to other database. Once search expression is formulated then actual online search is conducted.

Step 7: Select the Appropriate Format for Display of Records

When search terms are entered into the system the database starts displaying the records that match the search expression. Here you can specify whether you want to browse full record or brief record for selection. Most of the databases offer this option.

Step 8: Reformulate Search Expression, if required

If you find search results are not satisfactory, you can reformulate your search statement.

Online search is usually a repetitive process, where user conducts several searches, compares the results, and modifies the search statement or conducts a new search in order to get best results. You can combine keywords using Boolean Search operators viz. *And, Or, Not*. 'And' operator narrows the results to records that contain both the search terms e.g. Calcium and Obesity. 'Or' operator retrieves the records that contain either search term e. g. Calcium, or Obesity or both Calcium and Obesity. Use of 'Or' operator retrieve more records. 'Not' operator eliminates unwanted terms.

Step 9: Select the Mode of Delivery

You can download all the selected records online on your local computer or select an offline print out by e-mail.

10.4.3 Advantages of Computer – based Searching over Manual Searching

Speed

Searching electronic databases is much faster than their print counterparts. These databases offer current as well as retrospective searching. Sitting at the computer

terminal one can retrieve current as well as retrospective records speedily at the same time whereas in printed A/I periodicals, cumulated indexes as well as current indexes of the publication are manually searched and entry number of each item is noted down. Then volumes as well as issues of the publication carrying those entry numbers are manually located on the shelves, each entry number is searched and bibliographical details of items found relevant are noted down. Entire search process with printed sources is much more laborious and time consuming.

More Search Options

Search options provided by electronic databases are also far more than their print counterparts. In printed sources the searching is limited to the indexes (such as author, subject, keyword indexes, etc.) provided by the print publication. In electronic databases there are more search options such as search by field, year of publication, or journal title apart from author, keywords and subject terms. Moreover electronic databases offer Keyword or Phrase search (one can search by single search term or by phrase comprising more than one term), Boolean search (using Boolean operators like And, Or, Not), and Truncation search (One can search for all different form of word having same root).

Present day electronic databases offer many more services which will be discussed in subsequent sections of this Unit.

In 2001 the Reference and User Services Association (RUSA) of the American Library Association has issued revised guidelines for the preparation of a bibliography. Original guidelines had been prepared in 1971 and updated in 1992. The revised guidelines reflect the technological developments due to wide dissemination of bibliographies on the World Wide Web. The guidelines highlight the principles involved in preparation of a bibliography irrespective of its format. According to the guidelines, every bibliography should have a statement of scope and purpose, annotations/notes. The annotation notes can be of three types viz, i) when title of an item included in the bibliography is not clear, ii) for descriptive bibliography, the annotation should give enough information to enable users to decide whether or not they want to view the original, and iii) for critical evaluation annotation should be written by someone knowledgeable in the field, and links to full-text should be provided by electronic bibliographies, if available and if there is copyright clearance.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

3) State the advantages of computer-based searching over manual searching.

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10.5 ELECTRONIC DATABASES

Electronic databases are organised collection of data or information that are stored in computer readable form and can be easily accessed, modified and updated. The database can either be publicly available or be private. Private databases can be accessed only by employees of the organisations that maintain the databases. Public databases are designed for access by the public. Database contains data in structured form. For example, in a bibliographic database the data pertaining to the name of author, title of the book, its edition, publishers' name and address, date of publication, price, etc. are recorded in storage medium in structured form for accessing these individual data elements. The range of public databases has grown to the extent that it is now possible to find data almost on any subject. Databases have been created for nearly every major field and many subfields in science and technology, medicine, business, law, social sciences, politics, arts and humanities as well as for news (world wide, national, or regional), mission (such as defence, transportation, shipping, etc.), and consumer interests (such as shopping).

Let us examine the development of database industry and types of databases that are available at present for public use. As discussed in section 10.4.2 of this Unit, the indexing and abstracting services started using computers in 1960s to bring out their print products and MEDLINE was the first computer-based database to offer online search service for remote users. This was soon followed by commercial online search service providers like DIALOG and SDC. By 1975 there were 300 public access databases from range of different vendors. Database industry has been growing since then. From 1975 to 2009, the databases grew from 301 to over 20,000. Gale Directory of Databases (34th edition, 2011) covers more than 20,000 databases in all subject areas worldwide. Directory provides detailed, up-to-date information on publicly available electronic databases accessible through online vendors or batch processor, or available for direct lease, license or purchase. Online edition of this directory is available providing access to most up-to-date information as well as historical data on these databases. The directory listings include content and subject coverage, type, language, time-span, update frequency, geographic coverage, producer' contact information, and vendor availability for the databases covered. (<http://www.gale.cengage.com/pdf/>)

10.6 TYPES OF DATABASES

Databases are organised and maintained in different ways for different types of data or information. Data in a database may be predominantly:

- Word oriented (e.g. bibliographic, full-text, factual);
- Numeric (e.g. statistics, experimental values);
- Image both fixed images (e.g. photographs, drawings and graphics) and moving images (e.g. film of a lion catching pray, a flower opening); and
- Sound (e.g. recording of a sound of a tornado, or an explosion).

Word oriented databases contain words, phrases, paragraphs or text as their principal data. *Bibliographic databases, full-text databases and factual databases* come under this category. Most of the earlier developed databases were

bibliographic databases. The principal data in *numeric databases*, often called “*databanks*”, consists of numbers and symbols that represent statistical data, demographical data, time series data, etc. *Pictorial databases*, many of which are for scientific and engineering purposes, may contain representations of virtually any multidimensional structures, nuclear particles, graphs, architectural maps, etc. *Moving picture databases* can represent virtually anything in motion. *Audio databases* contain sounds and can represent music, voice, and sounds of nature or anything that can be heard.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

4) What do you understand by electronic databases? State briefly the development of online databases.

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10.7 DATABASE SERVICES

Most databases used in the libraries are bibliographic databases (such as catalogues, periodical indexes, abstracting services) and full-text databases (such as e-journals, reference sources). These databases are leased annually to the libraries under license agreement by the database producers. Database content is created by database producer, who usually publishes a print version and converts the content in machine-readable form to provide access to data on CD-ROM or online via Internet using propriety search software. The database producer provides online access to its databases through its own website or leases the content to one or more database vendors (such as EBSCO, ProQuest), who in turn provide access to these databases to registered library staff and users. Variety of database services is currently offered by primary and secondary journal publishers, online database vendors, aggregators, digital libraries, institutional repositories, search engines, etc. on the Internet. In subsequent sections you will study about these services.

10.7.1 Publishers of Secondary Periodicals

Publishers of secondary periodicals bring together recently published literature in specific discipline scattered over wide range of primary sources like journal articles, research reports, conference proceedings, dissertations, patents, monographs, etc. for public use. These publishers systematically scan the primary sources, index and arrange each item in helpful sequence with full bibliographical details and bring out a publication at regular intervals. These publications, known as secondary periodicals, contain bibliographical references of each item with or without abstracts. A secondary periodical with abstracts is an abstracting periodical and without abstract an indexing periodical. These indexing and abstracting

periodicals are now available in print as well as in computer readable form. Indexing and abstracting periodicals in computer readable form come under bibliographic databases. Most of these bibliographic databases are proprietary in nature and are available for online searching under license agreement from vendors or directly from publishers of indexing and abstracting services. Here are some examples of database services from publishers of indexing and abstracting periodicals:

- a) **CAS (Chemical Abstracts Service) Databases:** CAS a Division of American Chemical Society, indexes and abstracts world's chemistry related literature published in over 10,000 major scientific journals world over in 50 languages. It also covers patents and patents family references from 61 patents authorities around the world. CAS database contents can be accessed via *SciFinder* and *STN* on the Web. CAS offers range of products and services. The information products of CAS are:

CAPLUS Database: Contains bibliographic information and abstracts for over 34 million records from 1800AD to present. Database is updated daily adding 3000 records per day. The web version allows searching the database by research topic, author name, company name, document identifier, journal, and patent.

CASRegistry Database: This is a *Factual database* of chemical substances covering over 52 million chemical substances. Information covers structure of the chemical substance, molecular formula, predicted and experimental properties, and unique Registry number. Substance page allows searching substances by structure, molecular formula, and substance identifier.

CASReactions Database: This is *Factual database* covering one step to multistep reactions of chemical substances.

Services offered by CAS:

- Links from references to electronic journals and patent documents. Provides links to cited references dating back to the late 19th century. Links are provided to over 280 STM (Science, Technology and Medicine) publishers for full-text journals. Links to full-text of patents from 2 major patent offices are offered.
- Common Chemistry: A free web resource that contains CAS Registry number for approximately 7,900 chemicals of wide spread public interest. CAS had collaborated with Wikipedia to develop this resource.
- Other fee-based services are CAS Client Services like confirmation, identification or assignment of CAS Registry number and document delivery service.
- CAS Media Library: Covers current interest topics and new discoveries and shows how *SciFinder* and *STN* can play a significant role in providing solution for the advancement of science. Provides step-by-step instructions online using multimedia presentation.

SciFinder is a software tool that helps to search CAS databases containing many scientific disciplines including biomedical sciences, chemistry,

engineering, material sciences, agricultural sciences, etc. SciFinder finds references to biomedical research using CAPLUS and MEDLINE databases and allows searching protein and nucleic acid sequences from biomedical patents and journals. (<http://www.cas.org/>)

STN is an online database service that provides global access to published research, journal articles, patents, structures, sequence properties, and other data. As a neutral platform STN provides access to wide range of databases in Science and Technology from different database producers worldwide. STN is operated jointly by CAS and FIZ Karlsruhe world wide and is represented in Japan by JAICI. STN integrates the world first level patents databases on one platform and provides tools for analysis, visualisation and evaluations of patents. STN offers 3 types of search interfaces:

STN Express: Desktop access for experienced users;

STN on the Web: Web access for experienced online searchers; and

STN Easy: Web access for occasional and novice users.

STN Full-Text Document Solution-Linkages are provided from retrieved references to full-text documents through this service. (http://www.stn-international.de/stn_glance.html)

- b) **MEDLINE/PubMed Database:** MEDLINE (Medical Literature Analysis and Retrieval System Online) is a premier bibliographic database of the U.S. National Library of Medicine (NLM). MEDLINE contains over 21 million references to journal articles in life sciences with concentration on biomedicine. The database covers approximately 5200 journals world wide in 37 languages. The database is updated daily adding 2000 to 4000 records everyday. The records are indexed using controlled vocabulary from NLM's Medical Subject Headings (MESH). MEDLINE is the primary component of PubMed database (<http://www.nlm.nih.gov/>) searchable via **Entrez**. MEDLINE/PubMed may also be searched using NLM Gateway (<http://gateway.nlm.nih.gov/>), a service from the National Institute of Health.

PubMed Central (PMC): This is full-text database from U.S. National Institute of Health (NIH). The database consists of full-text articles (over 1,500,000) from 450 journals, that are linked to PubMed and are fully searchable free of charge.

National Library of Medicine has over 100 databases created by NLM international partners and collaborating agencies. All these databases are searchable online. Some of them are as follows:

MedlinePlus: Health information for patients, families and health care providers.

AIDSInfo: Database of AIDS Clinical trials.

BookShelf: Collection of online biomedical books whose full-text can be searched through Entrez system.

ChemIDPlus: Online dictionary of chemicals including names, synonyms, and chemical structures.

3D Domain: Macromolecular structural database.

GenBank: Genetic sequences databases.

Protein: Protein sequences databases.

Nucleotide: Nucleotide sequence databases.

MESH Database: Online database of Medical Subject Headings.

MESH Browser: Medical Subject Headings look up tool.

NLM Catalog: Online public access catalogue of NLM.

OLDMEDLINE Data: References to biomedical journals articles through 1948 to 1965.

TOXLINE: Database of 4 million references to toxicological literature.

TOXNET: Toxicological data networks. Database on toxicology, hazardous chemicals, and environmental health.

PubMed services cover the following:

Journal databases: search by topic, journal title, or abbreviation, ISSN, or browse by subject terms.

Limit searches to PubMed journal or currently indexed MEDLINE journals.

Clinical queries: A search interface for finding citations to specific clinical study category; systematic reviews or medical genetics.

MEDLINE/PubMed databases are searchable via **Entrez**. Entrez is a search engine run by National Center for Biotechnology Information (NCBI), which is a part of NLM, under the guidance of the National Institute of Health (NIH). MEDLINE/PubMed may also be searched using NLM Gateway (<http://gateway.nlm.gov/>), a service of the National Institute of Health. PubMed database can be searched free of charge. Citation may include links to full-text articles from PubMed Central or from publishers' website.

10.7.2 Publishers of Primary Periodicals

Primary research periodicals are published by learned societies, R&D institutions, Government organisations, R&D units of industrial organisations, academic institutions and commercial publishers. Ulrich's Periodical Directory lists over 270,000 active serial titles of which 70,000 titles represent academic and scholarly journals. First scholarly electronic journal was 'Online Journal of Current Clinical Trials' published by American Association of Advancement of Science (AAAS) in 1992. At present most of the scholarly peer reviewed journals are available in print as well in electronic form. E-journals have additional features that are not available in print form. Let us examine the services provided by some of the major e-journal publishers and aggregators:

ScienceDirect (<http://www.sciencedirect.com>): Elsevier, world's leading publisher of science and health information (<http://www.elsevier.com/>), publishes over 2380 primary scholarly journals in print as well in electronic form. The publisher offers online searching of over 2500 e-journals, 26 bibliographical databases, and 20,379 books in science and technology. Elsevier provides access to full-text e-journals and book chapters via *ScienceDirect*.

ScienceDirect is full-text database offering online access to articles from more than 2500 peer-reviewed e-journals and chapters from more than 11,000 books

in science and technology. At present there are more than 9.5 million articles/chapters in the database. The database is growing at a rate of 0.5 million items per year. The e-journals are searchable from year 1995 onwards. Journal's contents are available for search even at an early publication stage. Search options allow downloading, saving and printing of multiple documents. Search results can be forwarded to other researchers when desired. Elsevier publisher offers a variety of subscription and access options to the subscribers such as **ScienceDirect Complete, ScienceDirect Standard, and ScienceDirect e-Select**. Depending upon the type of library or information centre, different editions of ScienceDirect are available such as **ScienceDirect Government Edition; Corporate Edition; College Edition; and Business School Edition**.

Variety of database services are offered to the subscribers such as:

Science Alert: Runs a saved search automatically and delivers an e-mail notification with link to the new search results.

Journal Issue Alert: Send an e-mail notification when a new issue of a specific journal is made available on ScienceDirect.

Citation Alert: Send an e-mail notification when a document which cites a specific article of interest is added to ScienceDirect.

Topic Alerts: Notifies the subscribers by e-mail when a predefined topic related search retrieves new results.

ScienceDirect Top 25 Hottest Articles : An e-mail sent every 3 months to subscribers, listing 25 most frequently downloaded journal articles from any selected journal among more than 2,000 titles.

Specific Journal Alerts: Some groups of journals have specific alerting services.

Apart from above listed services Elsevier offers online training, customised settings, and usage reports for subscribing libraries.

SCOPUS: (<http://www.scopus.com>): The largest abstract and citation database of peer-reviewed journals and web resources. Updated daily, Scopus offers nearly 18,000 titles from over 5,000 international publishers, including peer-reviewed journals (16,000), open access journals (1200), trade publications (600) and book-series (350). The database offers full integration of the Scientific Web in its search results with 435 million web pages. It also provides access to 23 million patents from 5 patent offices, articles-in-press from over 3000 journals, and sources from institutional repositories, digital archives, etc.

10.7.3 Aggregators

E-journal publishers, in addition to providing full-text access to their publications from their own websites, are also making their e-resources available through vendors and other third party mediators for exploitation under license agreement. Third party mediators, known as aggregators provide online access to a large number of journals from different publishers on a single platform and customise information for individual libraries based on the needs of each library. This type of arrangement is beneficial for both the libraries and the publisher. Libraries can enter into agreement with single service provider instead of dealing large number of publishers. Publishers gain increased exposure for their services by

making their contents available through more than one source. There are large numbers of aggregators providing e-journal services on the Internet. Some of them are EBSCO, ProQuest, J-Gate, etc.

- a) **EBSCO:** EBSCO Industries Inc. is a global corporation with divisions in 23 countries around the world. EBSCO Industries have diversified into 40 businesses, including, electronic and print periodical subscription services, research databases and related information management services. EBSCO provides integrated services, that combines reference databases, subscription management, online journals, books linking services, and A to Z solutions. (<http://www.ebsco.com/>)

EBSCOhost: More than 300 full-text databases are available through Ebscohost. It is designed to cater to the users needs at every level of research i.e. at colleges and university level, hospitals and medical institutes, corporations, Govt. institutions, K-12 schools, and public libraries. (<http://www.ebscohost.com/>)

EBSCO A-to-Z service provides library users with a single comprehensive list of titles which they can access through subscription. Master A to Z titles provides links and coverage information to more than 600,000 unique titles from more than 4200 databases and e-journal packages. All major database vendors and publishers are represented.

EBSCO search software offers wide range of services as follows:

Search Alerts: Current session searches can be set up as search alerts to automatically update users with new articles published on a specific subject.

Journal Alerts: Sends Journal Alert notifications to users via e-mail when new title is made available in a specific database.

Links to Full-text Databases: Users can link from EBSCOhost citations to its full-text in another subscribed database.

Links to e-journals in library's collection: Links from EBSCOhost citations to full-text e-journals are provided either on publishers' site; or EBSCOhost E-journal Service or via CrossRef to participating publishers.

Links to OPACS and A-Z list of e-resources: Provides links to over 30 integrated library systems OPACs and Union Catalogues and from libraries catalogue to EBSCO's full-text.

Links to Document Delivery Systems: Linking is available to major document delivery services such as InfoRetrieve, CISTI and British Library.

Result List

The search software allows results to be sorted by Date, Source, Author, and Relevance.

The search screen has instant citation preview icon, source type for narrowing results, popular limiters to refine results, and related image screen, and date slide bar for result refinement.

Visual Search User Interface:

- EBSCOhost offers graphical displays of search results. The service allows user to choose between block or column style results display, or results to be grouped by subject or publication date;
- Brings images to result list items for instant viewing; and
- Charts, maps, photos, illustrations from over 3,300 journals are displayed for selection.

Branding: This facility allows customisation of subscribing library by putting library's name or logo as well as library's special messages on the EBSCOhost screens. (<http://www.ebscohost.com/>)

- b) **J-Gate** (<http://j-gate.informindia.co.in/>): J-gate is an electronic gateway to global e-journal literature. Launched in 2001 by Informatics India Ltd., J-gate provides access to over 5 million articles of e-journals online. It has database indexed from 25940 plus e-journals with links to full-text articles at publishers' site. It indexes articles from 9400 open access journals and maintains links to them.

J-Gate offers two types of services **J-Gate Portal** and **J-Gate Customized Services**.

J-Gate Portal: This service provides table-of-contents of latest issues of journals and comprehensive online searchable database of over 5 million articles with daily addition of over 4000 plus articles. Table-of-contents provides links to full-text articles on publishers' website.

J-Gate Customized Services: This service offers **J-Gate Custom Content (JCC)** and **J-Gate Custom Content for Consortia (JCCC)**. JCC is a local Intranet/Internet solution to libraries providing e-access to subscribed journals. This service provides TOC and database service to all journals subscribed by the library. JCCC service is for homogeneous group of libraries that wish to share resources. JCC software is installed at participating libraries. Common TOC and database service is provided to all the participating libraries and links to union catalogue are provided for resource sharing.

10.7.4 Digital Libraries

A digital library is a library in which collections are stored in digital formats (as opposed to print, microform or other media) and accessible through computers. The digital contents may be shared locally or accessed remotely via computer networks (<http://www.en.wikipedia.org/>). An important advantage of digital library is its increased accessibility to users. Users of digital library can access the contents of the library round the clock from any location. It offers multiple search options, user is able to use any search term such as word, phrase, title, name, subject to search entire collection. The same sources can be used simultaneously by number of institutions and patrons. Digital libraries can provide user friendly interface giving clickable access to its resources. Digital libraries conserve the fragile material which may otherwise deteriorate with repeated use. While traditional libraries are limited by storage space, digital libraries have the

potential to store much more information, because digital information requires very little physical space to contain them. Some of the examples of digital library are:

The World Digital Library (WDL): The library makes available on the Internet, free of charge, significant primary materials from countries and cultures in multilingual format covering seven languages. The World Digital Library is a collaborative project of U.S. Library of Congress, UNESCO and partners throughout the world. Libraries and other cultural institutions in Africa, Asia, Europe and North and South America, are contributing the contents as well as curatorial, cataloguing, linguistics, and technical expertise. WDL site is hosted by Library of Congress. A team based at The Library of Congress maintains the site. The digital library was launched in April, 2009 and principal objectives of the WDL are: i) to promote international and intercultural understanding; ii) expand the volume and variety of cultural contents on the Internet; iii) provide resources for educators, scholars, and general audiences; and iv) build capacity in particular institutions to narrow the digital divide within and between countries. (<http://www.wdl.com>)

Digital Library of India: Hosted by Regional Mega Scanning Centre, International Institute of Information Technology, Hyderabad in co-operation with IISc, CMU, ERNET and MCIT for the Govt. of India and 21 participating institutions, the Digital Library of India envisages developing a collection of one million digital books. Books denoting ancient historical events of India, cultural and social books in different languages have been digitalised. The materials are obtained from authorised university and public libraries of India. Palm leaves journals and manuscripts are also digitised. Preliminary discussions are being held with OCLC as a host, for registry of scanned items. With a view to select best books, the project will seek publishers' permission to scan the books for college libraries. The principal benefit of universal library of this type will be to supplement formal education system by making knowledge available to anyone who can read and has access. (<http://www.dli.iit.ac.in/>)

10.7.5 Open Access E-Journals

Open access journals are scholarly journals that are available online to readers without financial, legal or technical barriers. Open access literature is digital, free of charge and free of most copyright and licensing restrictions. Open access scholarly journals permit users to read, download, copy, distribute, search or link to the full-text articles. Open access literature is available in open access journals, subject repositories and digital archives.

Directory of Open Access Journals: The Directory covers free, full-text quality controlled scientific and scholarly journals. There are 6960 journals in the directory. Currently 3174 journals are searchable at article level. The database of directory has over 623995 articles. The aim of the directory of open access journals is to increase the visibility and ease of use of open access scientific and scholarly journals there by promoting their usage and impact. (<http://www.doaj.org/>)

10.7.6 Institutional Repositories

Institutional repositories are digital archives of research output of a particular R&D institution, or a central repository of a group of institutions or a subject

specific repository. These repositories archive the scholarly material and offer free access to this material for scholarly and educational purposes.

Some institutions in India such as Indian Institute of Science, Bangalore, Indian Statistical Institute (IISc), Bangalore, Indian Institute of Technology, Delhi and others have established open access institutional repositories (IRs) to disseminate the research output of their respective institution. Some institutional repositories are self archived like Indian Institute of Science, Bangalore. IISc (eprints@IISc) repository collects, preserves and disseminates in digital formats the pre-prints, post-prints and other scholarly material created by IISc research community. In some repositories, the administrators of the repository collect the research material from different sources and disseminate for public use on behalf of the person concerned. Subject specific repositories are repositories providing access to subject specific scholarly material. These repositories accept scholarly publications from different sources on a specific subject and provide free access to this collection. For example, National Informatics Centre stores, maintains, and provides free access to biomedical literature through OpenMed@NIC. (<http://www.indmed.nic.in/>)

Apart from the above listed database service providers, there are many others which offer database services on the Internet such as 'Find article' from Look Smart, 'Google Scholar' from Google Inc., and subject specific portals and many more.

10.7.7 Database Services - Emerging Trends

Impact of ICT has brought a spectacular change in information storage, retrieval, and dissemination related activities. Producers of indexing and abstracting periodicals and publishers of primary periodicals, which were two separate industries earlier, are now merging or entering into partnership. Publishers of primary journals are offering online access to full-text e-journals to the subscribers of their print publications under license agreement. Producers of bibliographic databases are diversifying by bringing out factual statistical and multimedia databases. They are offering linkages from citations to full-text journal articles on publisher's site. As demands for multimedia databases is growing, database producers are increasingly adding graphics, images, audio and video to the technical contents of the databases. Apart from providing linkage services, the publishers are offering additional services to the end-users like journal issue alert, citation alert, topic alert service and many more. Database producers are offering customised services by bringing out different products according to requirements of different clients. New generation of e-journal service providers are emerging like aggregators. Aggregators like EBSCO and ProQuest, with license rights from primary publishers are providing online access to full-text online aggregated databases. They are also providing links from secondary services to the full-text articles online. Many database search service providers allow search results to be sorted out by various parameters like date, author, source or relevance and save it to user's personal account. Some allow graphical display of search results. Many more players have joined database service market like digital libraries, institutional repositories, open access e-journal initiators, search engines and others.

Self Check Exercise

Note: i) Write your answers in the space given below.

ii) Check your answers with the answers given at the end of this Unit.

5) Enumerate the types of databases available for online searching.

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6) List the online database search service providers.

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10.8 SUMMARY

The Unit deals with literature search and database services. In the first part of the Unit we have discussed the need and importance of literature search in R&D related activities. We have also described basic steps for conducting manual as well as computer-based search for general purpose searches and for compilation of subject bibliographies. The advantages of computer-based search over manual search have been pointed out. The second part of the Unit deals with electronic database services. In this part we have described briefly the growth of electronic databases, types of databases and their services. The database services from producers of indexing and abstracting periodicals, e-journal publishers, aggregators, digital libraries, open-access e-journals, and institutional repositories have been dealt in detail with examples. A brief account of emerging trends in database service industry is provided.

10.9 ANSWERS TO SELF CHECK EXERCISES

1) Literature search is an exhaustive search for published information on a subject conducted systematically using all bibliographic finding tools, aimed at locating as much existing material on a topic as possible, an important initial step in any serious research project. Literature search thus:

- Helps the researcher in study and research;
- Avoids duplication of research efforts;
- Helps in solving research problem;
- Assists in learning methods and techniques that are appropriate for particular field of study;

- Helps the researcher to demonstrate that the researcher's contribution is new and different from others; and
 - Assists in finding out new areas for research.
- 2) Different steps in a manual search and compilation of a subject bibliography are:
- To understand the exact subject to be searched;
 - To decide whether bibliography should be comprehensive or selective, current or retrospective and the types of documents to be included;
 - Formulate the search strategy based on the user requirements;
 - Select appropriate sources for search;
 - Carry out search beginning with a review publication followed by search in secondary and primary sources;
 - Record the references in a standard format;
 - Arrange the references in order suitable for subject and the targeted user; and
 - Prepare various indexes to provide multiple means of access to the user.
- 3) Advantages of computer-based searching over manual searching are as follows:
- a) Searching electronic databases is much faster than their print counterparts.
 - b) Search options provided by electronic databases are also far more than their print counterparts.
 - c) Electronic databases offer linkages from citation to full-text journal article.
 - d) Provide alerting services like journal issue alert, citation alert, topic alert, etc.
 - e) Search results are displayed in computer-based search during search process and search strategy can be altered or revised based on the results.
 - f) Some databases offer graphical display of search results whereas, options c, d, e and f are not available in print publications.
- 4) Electronic databases are organised collection of data or information that are stored in computer readable form and can be easily accessed, modified and updated. Database contains data in structured form. For example, in a bibliographic database the data pertaining to the name of author, title of the book, its edition, publishers' name and address, date of publication, price, etc. are recorded in storage medium in structured form for accessing these individual data elements. The range of public databases has grown to the extent that it is now possible to find data almost on any subject. The indexing and abstracting services started using computers in 1960s to bring out their print products and MEDLINE was the first computer-based database to offer online search service for remote users. This was soon followed by commercial online search service providers like DIALOG and SDC. By 1975 there were 300 public access databases from range of different vendors. Database industry has been growing since then. From 1975 to 2009, the

databases grew from 301 to over 20,000. Gale Directory of Databases (34th edition, 2011) covers more than 20,000 databases in all subject areas world wide.

- 5) Databases are categorised according to the type of data they contain. Data in a database may be word oriented, numeric, images-both fixed images and moving images or sound.

Word oriented databases contain words, phrases, paragraphs or text as their principal data. *Bibliographic databases*, *full-text databases* and *factual databases* come under this category. Most of the earlier developed databases were bibliographic databases. The principal data in *numeric databases*, often called “*databanks*”, consists of numbers and symbols that represent statistical data, demographical data, time series data, etc. *Pictorial databases*, many of which are for scientific and engineering purposes, may contain representations of virtually any multidimensional structures, nuclear particles, graphs, architectural maps, etc. *Moving picture databases* can represent virtually anything in motion. *Audio databases* contain sounds and can represent music, voice, and sounds of nature or anything that can be heard.

- 6) Online database search service providers are:
- Producers of Secondary Periodicals;
 - Publishers of Primary e-Journals;
 - Aggregators;
 - Digital Libraries;
 - Open Access e-Journals;
 - Institutional Repositories;
 - Search Engines; and
 - Publishers of e-books and e-reference books.

10.10 KEYWORDS

Aggregator : A bibliographic service that provide online access to digital full-text of periodicals published by different publishers. For example, aggregators like EBSCO, ProQuest provide online access to large number of journals from different publishers on a single platform.

Boolean Search Operators : A system of logic developed by English mathematician George Boole that allows the user to combine words or phrases representing significant concepts when searching an online catalogue or bibliographic database by keywords. Three logical commands (also called operators) viz. AND, OR, and NOT are available in most search software. The **OR** command is used to

expand retrieval by including synonyms and related terms in the query. The **AND** command is used to narrow search results. Each time another concept is added using “and” the search becomes specific. The **NOT** command is used to exclude unwanted records from search results.

Broad Band Access : High speed data transmission, commonly used in reference to Internet access via cable, modem, DSL or wireless network, which provide higher bandwidth than a dial-up connection.

Dial-up Internet Connection : Connection from a computer terminal to the Internet service provider via telephone lines is known as dial-up Internet connection.

Digital Library : A library in which significant proportion of the resources are available in machine-readable format, accessible by means of computers. The digital content may be locally held or accessed remotely via computer networks.

Graphical User Interface (GUI): A computer interface that allows the user to provide input and receive output interactively by manipulating menu bars, icons and moveable, sizable windows by means of keyboard or pointing device such as a mouse.

Institutional Repository : A set of services offered by an institution or a group of institutions to members of its community for the management and dissemination of scholarly material in digital format created by the institution and its members, such as e-prints, technical reports, theses and dissertations, data sets and teaching materials.

Internet Service Provider (ISP): A company in the business of providing Internet access to computer users who do not have direct connection, usually via a telecommunication channel in exchange for payment of a fee.

Online Service Provider : A company or a library concerned with selecting and providing access to electronic resources such as online catalogues, bibliographic databases, full-text databases, etc.

Open Access : Information content made freely and universally available via the Internet in easy

to read format. Open access is new model of scholarly publishing to free researchers and libraries from limitations imposed by excessive subscription price increase for peer-reviewed journals, particularly in science, technology, and medicine.

Reference Interview : Interpersonal communication that occurs between a reference librarian and a library user to determine the person's specific information need(s).

10.11 LIST OF ABBREVIATIONS

CMU	Carnegie Mellon University, Pittsburgh, PA15213.
ERNET	Education and Research Network, New Delhi.
IISc	Indian Institute of Science, Bangalore.
MCIT	Ministry of Communication and Information Technology, under Department of Information Technology, Govt. of India.
NSF	National Science Foundation, USA.
STN	Science and Technology Network.
TOC	Table of Contents.

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BLOCK 4 INFORMATION USE AND USER STUDIES

Introduction

The theme of this Block is Information Use and User studies. This Block is divided into four units (Unit no. 11 to 14). Unit 11 is on User Education and Information Literacy, Unit 12 deals with User Studies, Unit 13 is titled Information Use Studies and Unit 14 of this Block is on Marketing of Information Services.

Unit 11 discusses the importance of user education for the new entrants to the library and also explains the new concept of information literacy in this context. User education is a service designed by libraries to help users know the services provided by them. It also educates the user about the sources, processes and techniques used in libraries to access and use information. Information Literacy (IL) has evolved as a result of information explosion and the increasing awareness and use of information. These concepts have been discussed in detail in the Unit. After reading the Unit you will be familiarised with the concepts and will be able to design such services in the libraries that you join in the future.

Unit 12 is on user studies in the libraries and information centres. This Unit is focused on the users to know their characteristics, information needs, etc. Such studies of users help in decision making as well as in the designing of information systems, products and services. It will also apprise you of the methods used in conducting such studies.

Unit 13 deals with conducting information use studies in the libraries to examine the use of their resources and services. It explains the meaning of and the need for doing such studies. It familiarises you with various types of use studies e.g. user-based, profession-based, sources-based, subject-based, etc. After going through this Unit, you will be able to plan and conduct such studies to know the use of sources, services, etc. of a library.

Unit 14 of the Block is on marketing of information services. It explains the meaning of the marketing and also the need to implement it in the library and information centre's arena. It further describes the concept of marketing mix and its application in the libraries and information centres.

UNIT 11 USER EDUCATION AND INFORMATION LITERACY

Structure

- 11.0 Objectives
- 11.1 Introduction
- 11.2 User Education
 - 11.2.1 Definition
 - 11.2.2 Components
 - 11.2.3 Historical Development
 - 11.2.4 Objectives
 - 11.2.5 Methods
 - 11.2.6 Information Technology and User Education
 - 11.2.7 Evaluation of a User Education Programme
- 11.3 Information Literacy
 - 11.3.1 Concept
 - 11.3.2 Need
 - 11.3.3 Historical Background
 - 11.3.4 Information Literacy Models
 - 11.3.5 Information Literacy Standards
 - 11.3.6 Imparting Information Literacy
- 11.4 Information Literacy and User Education
- 11.5 Summary
- 11.6 Answers to Self Check Exercises
- 11.7 Keywords
- 11.8 References and Further Reading

11.0 OBJECTIVES

After reading this Unit, you will be able to:

- explain the concept and meaning of user education;
- define its purpose and trace its development;
- describe the methods of conducting user education programmes in libraries;
- critically evaluate the effectiveness of user education programmes;
- explain the concept of information literacy;
- define its need and trace its development;
- describe the models and standards of information literacy;
- discuss how to impart information literacy;
- critically evaluate the effectiveness of information literacy; and
- briefly describe the user education and information literacy scenario in India and the world.

11.1 INTRODUCTION

Libraries have been providing user education programmes under different names to facilitate use of library and information resources. Library orientation is organised to orient the new users in a library with its physical set-up, rules, regulations and facilities. Library instruction is provided so that users are able to locate information sources in the library. Bibliographic instruction is yet another service offered by libraries to enable users to search and retrieve information. User education programmes are organised by libraries to familiarise the users with library sources and services. There is a need for such programmes to make the users aware of the library and information sources, services, processes/operations as well as library use ethics. Such programmes facilitate the users to use library and information resources efficiently and effectively. Developments in Information Communication Technologies (ICTs) have helped in better delivery of such programmes. Use of multimedia and the Internet has also helped to provide these programmes in a more interactive way with anytime remote access.

Further, developments in ICT, particularly the Internet, have resulted in the following changes:

- Vast information is now available in variety of formats. There are many ways of storing such information with a variety of search features.
- Various information sources are available to users. One needs to keep in mind the purpose of seeking information while selecting or choosing an information source.
- The Internet has provided an opportunity of publishing on the Internet. However, this has resulted in difficulty in assessing the authority and authenticity of the information.
- Availability of digital information resources has enabled the libraries to serve their users with information, anywhere and anytime.

Along with changes in information sources, the use of information has also witnessed a substantial change. The developments in availability of digital information, increasing dependence of users on it and its increasing use made by libraries in services led to the birth of the concept 'Information Literacy' (IL) to enable users to use information effectively.

11.2 USER EDUCATION

A number of user studies, conducted in different countries, have established the fact that only a few scientists make optimum use of libraries and are aware of the various bibliographical tools available in the libraries. "The inference is that, contrary to the opinion of some academics, knowledge of the structure and use of scientific literature is not gained intuitively, but has to be taught". Training in the use of scientific information has been officially recommended by the Royal Society Scientific Conference. The Perry Committee Report included a survey of undergraduate use of university libraries in the United Kingdom. The survey showed that the majority of students were not active users of academic libraries. Thus, the need for imparting training to users in the use of libraries and information

resources was firmly established. Several attempts have been made all over the world to design and develop programmes for training and educating the users in the use of libraries and information resources. Imparting such knowledge to the users is commonly referred to as user education.

11.2.1 Definition

User education may be defined as a process or a programme through which the potential users (scientists, engineers, technologists, academics and students) of information are made aware of the value of information and are motivated to use information resources. Mews, in her book on Reader Instruction, defines user education as instruction given to readers to help them make the best use of library. Gordon Wright opined that a student cannot be taught the use of library in splendid isolation, but must be made to see it as continuous process of education in which the various facets of communication are inextricably mixed. Jacques Tocatline (UNESCO) defined 'user education' to include any effort or programme which will guide and instruct existing and potential users, individually or collectively with the objectives of:

- a) recognising their own information needs;
- b) formulating these needs;
- c) using information services effectively and efficiently; and
- d) assessing these services.

It may be stated that user education is concerned with the information and communication process as a whole and one part of this involves interaction of the user with the library. It (user education) should be a continuous process starting with school and public libraries and with the possibility of extension into academic and special libraries. User education is central to the whole purpose of the library and the effective utilisation of information resources. The pattern of many academic user education programmes is similar to that proposed at the Royal Society Scientific Information Conference in 1948.

11.2.2 Components

Ideally, user education should be a continuous process comprising of two components, namely orientation and instruction, which may be combined when necessary.

Orientation is concerned with ways of acquainting the user with the library and services available and also with the organisation, layout and facilities of a particular library. Orientation is related to both cognitive objectives (i.e., understanding) and affective objectives (i.e., feelings and attitudes). In orientation, it is important to try and create the right kind of environment for effective communication between user and the library staff and to present an image of the library as a pleasant and friendly institution, where help can be obtained. As a result of orientation, the users should feel confident that the library staff is competent and is always willing to help them.

The second component of user education, namely instruction, is concerned with learning the use of the various information resources available in a specific library. This aspect is also known as bibliographic instruction and is concerned with the problems of information retrieval and the techniques of utilising information

sources to their maximum. Bibliographic instruction may be imparted at two stages, as an introductory course and as an advanced course, depending on the awareness level of the users.

It is not enough for the students to be motivated by the librarian(s) alone to make use of the library. Their teachers must also provide them with experiences that using the library is a necessary and rewarding part of education. In other words, user education programme must be integrated with academic teaching programme involving closer cooperation between the librarian and the teaching faculty. As an outcome of such cooperation, relevant practical work can be incorporated into user education programmes. The concept 'course-integrated' user education implies close relationship between library and academic programmes. Different forms of user education programmes have been suggested along the lines of ideal librarian/faculty cooperation.

11.2.3 Historical Development

The history of development of user education has been well documented. For example, Bonn's 'Training Laymen in the Use of the Library' furnished a survey of the whole field of user education covering up to the period 1958. This was updated through the efforts of Mirwis covering the academic instruction in the USA in the form of a bibliography for the period (1960-1970). Apart from these well documented records, the concept of user education evolved itself and has been widely accepted. The pattern of development is briefly discussed in the following sub-sections of this Unit.

Pioneering Efforts

The systematic use of the concept of user education owes its origin to Patricia B. Knapp and her 1964 report which mainly attempted at "exploring methods of developing a more vital relationship between the library and college teaching". This project was sponsored by the Monteith College of Wayne State University. Earlham College also tried to provide user education programmes more or less on the same lines. It was during this period that user education was identified with bibliographic instruction and/or course related library instruction with its own strategy. Bibliographic instruction comprised of two components, one concerning the sources for imparting of knowledge and the second relating to the development of skills essential for imbibing bibliographic instruction which consisted of the following aspects: a) general types of reference works b) indexing and abstracting periodicals c) library catalogue d) principles of knowledge organisation e) search strategy and f) subject analysis.

The role of library in higher education has been for long a subject of debate. In 1934, Louis Shores introduced the concept of 'Library Arts College'. This concept gradually evolved into 'Library College'. The purpose of Library College is to increase the effectiveness of student learning, particularly through the use of library centred independent study with the help of a bibliographically expert faculty. The Library College is concerned with changing the mode of instruction from the classroom lecture arrangement with the library as a supporting agency to the carrel or room in the library with the teaching/learning process dependent upon the individual and the independent efforts of the student.

Institutionalisation of User Education

In the process of institutionalisation of user education the lead was taken by the Council of Library Resources and Association of College and Research Libraries in the USA. It was the British Library Research and Development Department and the Centre for Research in User Studies which promoted and gave impetus to the development of user education programmes in the U.K. This institutional patronage was mainly responsible for a number of important user education projects.

UNISIST Programme: User Education

The focus of user education programmes all along has been academic institutions, with the American activity being concentrated towards under-graduates and the British programmes emphasising on post-graduates and research students. In the case of less developed countries, user education programmes were required to be geared towards developmental processes. UNESCO under the UNISIST Programme attempted to initiate user education programmes in less developed countries. UNISIST promulgated the UNESCO General Information Programme (PGI) in 1975. The UNISIST Information Policy objectives stress on user education. The UNISIST document notes that “basic training in the use of existing information sources, obtaining feedback from users on the results of information needs studies and involving, as wide range of users as possible in any new experimental services”. The Bangkok and Rome Seminars (UNISIST) in 1976 considered user education as an important factor in the National Information Policy of any country. The Rome Seminar recommended that National Policy on User Education should be formulated as an integral part of the national policy and in correlation with the national education policy.

There have been many conferences and seminars, at both international and national levels, on the theme of user education. One of the earliest conferences on the subject was the Fourth Triennial Meeting of IATUL (International Association of Technological University Libraries) held at Loughborough, U.K. in 1970. The theme of this meeting was ‘Educating the Library User’. The first international conference on Library User Education was held at Cambridge in 1979 with the theme ‘Library User Education: Are New Approaches Needed?’. This was followed by the second conference held at Oxford in 1981. This conference covered user education in different types of libraries. Other examples of international seminars on various aspects of user education are the Anglo-Scandinavian Seminar on Library User Education held in Gothenburg, Sweden in 1976, workshops held at Essen, Federal Republic of Germany in 1981 and at Cranefield Institute of Technology, Melbourne, Australia in 1981 and a seminar on user education in the online age held in Gothenburg in 1982. It may be stated that the early development of user education was largely concentrated in English speaking countries - mainly Britain, USA, Australia and Canada. Later, European countries, Japan and China in Asia also developed and conducted user education programmes.

As far as development of user education in India is concerned, the field has witnessed considerable activity. For example, the INSDOC (now NISCAIR), New Delhi and the DRTC, Bangalore, organised seminars and workshops for the promotion of user education. The IASLIC, Calcutta organised a national conference on User Education at Waltair (Andhra Pradesh) in 1981 and produced

a volume of papers on the subject. IARI (New Delhi) also made efforts to organise a special course on “library use, reference compilation, scientific paper writing and proof correction”. This course is not based on any standard guidelines such as UNISIST guidelines. Except for some voluntary efforts on a sporadic basis, no systematic effort has been made for institutionalisation of user education in India.

It may be mentioned here that the concept of user education has caught the imagination of librarians and information professionals all around the world. There have been three streams of experience so far as user education is concerned. Historically speaking, the American experience is said to be innovative, because it has laid the basis for others to follow. The names of Louis Shores, Patricia B. Knapp and Thomas Kirk would be remembered as pioneers. It was through their initiative and leadership that user education came to be accepted widely in the USA. The next step in the development was the institutional framework pioneered by Eastern Michigan University through its various activities. Yet another major step in this direction was statement of objectives of the Association of College and Research Libraries in which user education received attention. This process of institutionalisation of user education has been accelerated by the allocation of funds from private foundations.

The experience of the UK in user education was somewhat different. Here, user education programmes have tended to emanate from a central body like the Library Research and Development Department.

Self Check Exercise

Note : i) Write your answers in the space given below.

ii) Check your answers with the answers given at the end of this Unit.

1) Define user education. What are its components?

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2) Explain in brief the developments taking place in the area of user education.

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11.2.4 Objectives

A general objective of a user education programme for any type of library is to create awareness about the sources and services available and that it should be in consonance to the objectives of the institution. In special libraries, for subjects like, science, medicine or technology, where the rate of growth of literature is rapid the need for user instruction is particularly crucial.

Library user education is not a separate academic discipline. It consists of a series of skills which can be made use of, in connection with different academic studies. Hence, education in library use should be closely integrated with the teaching programmes of different academic disciplines. Therefore, there is a greater need for cooperation between library staff, academic staff and the student community for its successful implementation.

In the past, there has been an ongoing debate relating to the objectives for library user education. Organisations like ACRL in the USA and ASLIB in the UK have attempted to develop their own proposals and guidelines in this direction. Information professionals like Hutton, Scrivener and Hartz have communicated their views on the subject. Scrivener, while discussing the general aims for university library user education programmes, describes the following as a summary of what any programme might aim to achieve “the details will necessarily vary in different situations but teaching should establish and promote those traditional skills without which no student can make adequate use of his library: i) an understanding of library arrangements- physical, bibliographical and conceptual ii) a knowledge of sources which will be appropriate in any given situation iii) the ability to interpret his own need so as to frame relevant questions iv) an awareness of search techniques including the ability to devise serviceable routines and finally the student needs skill in the art of evaluating his sources and presenting his materials”.

It is always beneficial to make a distinction between library orientation and library instruction. It may be emphasised that library orientation is concerned with enabling the student to become aware of the existence of the library and the services available therein aiding the student to learn about the general use of the library, whereas library instruction is concerned with enabling the student to obtain information required for specific purpose by making full use of the resources and material available in the library and is concerned with problems of information retrieval.

11.2.5 Methods

Education has been defined as a process that empowers the learners. This process can be affected by a variety of factors. The four basic factors that affect learning in practical situations are motivation, activity, understanding and feedback. These factors might be considered in relation to library user education programme as well. Choice of teaching methods and media depends on the learning/teaching situation, the subject material, the students and the teachers. No single method will be suitable for all situations. However, teaching methods may roughly be categorised into those which are suitable for group instruction, those suitable for individual instruction and those suitable for both. These methods are depicted in the diagram 11.1.

Teaching methods

Type of instruction

- lecture
- seminar/tutorial/
demonstration
- guided tour
- film
- video tape
- tape/slide
- audio tape/illustration
- audio tape
- book, printed guide etc.
(micro-media)
- practical exercises
- programmed instruction
- self-instructional material
(tours, signs etc.)
- individual help.

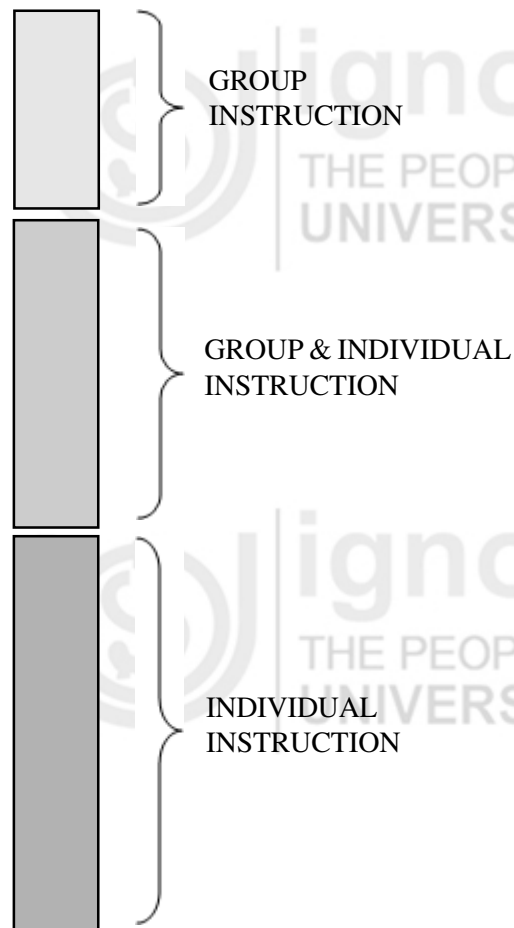


Diagram 11.1 :Teaching Methods for Group and Individual Instruction

(Source: User Education in Libraries by Nancy Fjallbrant and Ian Malley)

Teaching methods may use visual or audio stimulation or a combination of both. It is stated that methods which make use of a combination of sensory inputs are likely to be more effective than those which rely on a single channel of communication. In fact, interaction between individuals concerned in the learning/teaching situation also affects the learning process. The interaction may be categorised as teacher-student and student-teacher interaction. Revill is of the opinion that in programmed instruction student works as isolated individual. Therefore, there is little or no interaction with other students or with teacher. This situation might be advantageous for introvert students but may not favour the extrovert students who prefer companionship and competition in the classroom. Described below are various teaching methods for library user education. From the description it might be observed that no single method is suitable for all learning/teaching situations or for all individuals. In fact, various methods and media should be used to supplement each other in any given programme of education. However, traditional library instruction has made considerable use of the lecture method for large groups, the guided tour for smaller groups and individual help for those who ask for this at the information desk. Use of various methods and media for library user education are discussed briefly in the following sections.

The Lecture

Lectures are the most common method of instruction. They are used for teaching large groups of students. In lecture method of teaching both audio as well visual sensory inputs (via blackboard or overhead projector) are made use of. The lecture

as a form of communication in education has been strongly criticised. The disadvantage of this method is that the speed of delivery of information cannot be controlled by the receiver and repetition is not possible without the provision of printed handouts. However, lectures provide an opportunity for personal interaction and some feedback could be obtained from the students. Lecture is an unsuitable method for conveying information about bibliographic data. It is only suitable for providing a general introduction to a course on information retrieval. The lecture method may be more advantageous for a mature group of audience rather than beginners.

Seminars, Tutorials and Demonstrations

These are organised for small groups of students/users. Compared to lecture method, seminars, tutorials and demonstrations are methods which provide opportunity for active involvement of users in the learning process through greater interaction between the teaching staff and students. In seminars, the atmosphere tends to be less formal and more congenial for interaction between the teacher and the student. It is possible to provide motivation and to see that students are actively involved by means of practical exercises. During the practical sessions the students receive feedback regarding their progress. For example, an attempt can be made to relate new information to existing knowledge. It is rather difficult to explain the use of various specific tools for information retrieval in absence of source materials. It will be ideal to conduct seminars relating to library user education in libraries. This would facilitate demonstration of specific tools for information retrieval. Demonstrations might prove to be a good way of teaching small groups of students/users, the use of various tools used for information retrieval. They may be provided with an opportunity of actively searching for information about some topic in which students/users are interested.

The Guided Tour

This is one of the traditional approaches commonly adopted to orient the new users to the use of the library. This type of orientation is often given when the students have little or no motivation to use the library. From the point of view of library administration the guided tour type of library orientation is a burden as it demands substantial amount of the library staff time. "A better programme for short library orientation is the self-paced printed or audio tour followed by appropriate exercises. This method brings library users into the actual building where they carry out a series of practical tasks concerned with the location materials, photocopying, use of catalogues and other routines. Self guided tours have been used successfully in many libraries".

Audio-visual Methods

There are few areas in library user education where it is necessary to use moving images. As a result, the information can be conveyed in a series of units such as slides or transparencies or printed illustrations. This would suggest that the tape/slide medium or the use of audio-tape in conjunction with printed material would be suitable for library user education. The advantages of tape/slide productions are-flexibility, constant availability, speed of presentation and the clarity associated with the exposition apart from being easy to update.

Video-tapes

Video-tapes, like films, can be used to convey both motion and audio. It is possible to re-use the tape thereby making and updating less expensive. However, updating

of video-tapes is a time consuming activity. Video-recording can be used to create an atmosphere of reality and convey moving images but these requirements are not usually met with in library instruction. Video-recording can make use of tape, film or discs for actual storage of recorded material. However, one of the problems facing libraries in the use of video materials has been the lack of standardisation between different systems. It would appear that cassette systems are more appropriate in the context of library user education. There are at present two types of TV cassette systems- for playback alone and systems for both recording and playback. But the main problem is lack of compatibility between different systems. The advantages of these methods are that they allow for careful preparation of material and can make use of the best teachers available repeatedly as the recorded material can be used many times. Internal TV systems can be suitable for audiences of different sizes. Though the students cannot stop in the middle of the programme and ask questions and discussions cannot be organised. In other words, the instruction tends to place the student in a passive atmosphere.

Programmed Instruction

The programmed instruction can be carried out by the use of a variety of media such as printed books, automatic projection of slides or by means of a computer-aided instruction (CAI). Programmed instruction is associated with many advantages for library instruction. For example, student/users can work at their own pace, they can actively participate in the learning process and receive direct feedback in respect of their progress. It is also possible for the teaching staff to obtain a record of the student's progress. Of course, the disadvantage is that of the possible isolation of the student. Extrovert students who like companionship and competition of the classroom might not prefer this method of learning. CAI instruction is largely developed in the USA.

Signs and Informational Graphics

Sign systems and informational graphics are two of the most basic methods available for providing orientation about the use of the library. A study of British libraries conducted by Graphic Information Research Unit at the Royal College of Art revealed that the general standard of graphics was poor, signs in particular tended to vary in design and construction. However, in the USA, there has been a marked increase in this important aspect of user education in recent years and a number of handbooks and guides have been produced in this area.

“Librarians started to apply systems approach in which different types of signs are used to illustrate different functions such as orientation, direction, identification, instruction, prohibition or regulation or current awareness. These functions fall into two main types: signs related to direction finding and signs related to the use of library resources. If signs are to be effective for user orientation, they must be carefully planned with regard to position, content and presentation”. Well-designed signs are expensive but this expense becomes a good investment as the signs will last for a long time and also help the users to overcome the physical barriers of the library.

Individual Instruction at the Reference Desk

It is believed that the best form of library instruction can be imparted by personalised service at the reference desk. This is because generally a user asks a question about the use of some part of the library when s/he is interested to

learn about that particular aspect. The student/user is actively involved in the learning process and is receiving informed instruction from an expert. The difficulty associated with this type of individual help is that it may provide immediate relief to the students/users, but not necessarily the understanding and background knowledge to cope up with similar situations that the student/user might face in future.

To summarise, it might be said that choice of teaching methods and media depends on the learning-teaching situation, the subject material and people to whom training has to be imparted and the staff involved in the training process. The methods and media for library user education should preferably involve the active participation of the student/user so that the user feels part of the process. In practice, a combination of teaching methods and media might provide the ideal basis for programmes of library user education.

Self Check Exercise

Note: i) Write your answers in the space given below.

ii) Check your answers with the answers given at the end of this Unit.

3) What are the objectives of library user education?

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4) Mention the various methods and media used for library user education programme.

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11.2.6 Information Technology and User Education

Computers are increasingly being used today for information retrieval activities. This has resulted in rapid growth of computer-based online information retrieval systems. Databases and computer stored information files are produced by many organisations such as American Chemical Society (Chemical Abstracts) and the US National Library of Medicine (Index Medicus), etc. These databases are now widely accessible for information searching from local terminals which are linked to the central computer via a telecommunication network. Such efforts have resulted in the development of a number of online information retrieval systems. The use of these systems depends on the education of users and the availability and functioning of this method of information retrieval. The aim of this section is to examine the goals and objectives of online user education and to suggest

examples of methods, media and training programmes suitable for accomplishing these goals and objectives.

Groups Involved in Online Education

Different groups are concerned with online orientation, training and education. They are:

- 1) Database producers
- 2) System operators
- 3) Institutions such as libraries or information centres
- 4) Library schools
- 5) Intermediaries
- 6) End users

The motivation for each of these groups is expected to vary considerably. Generally, the motivation for taking part in such training programmes might be considered partly financial and closely linked to the sale of a specific product, database or information system. For the sake of convenience, online education programme may be divided into two components, orientation and instruction. Orientation is concerned with enabling the user to learn of the existence of computer-based information retrieval and the services available. On the other hand, instruction is concerned with enabling the user to learn in detail how to carry out computerised information retrieval. The goals and objectives of online user education may be categorised in terms of the two main groups namely the end-users and the intermediaries.

Main Goals

- i) To enable an end-user to carry out online information searches either himself/herself or with the help of an intermediary within her/his own subject field, as and when required, in connection with information needs.
- ii) To enable an intermediary to carry out online information searches, for end-users, within many different subject fields, from the available databases, on the various information retrieval systems.

Methods

In the earlier section a detailed account has been provided regarding the teaching methods and media in the context of library user education. In addition to the methods discussed earlier, it must specially be noted that as online retrieval is an interactive process, particular attention needs to be paid to methods which permit the display and experience of this interaction.

The ultimate aim of online instruction, for both end-users and intermediaries, is to be able to carry out online information searches. Therefore, it is essential to practice on a real system. This forms part of 'learning by doing' concept, which is also important in other forms of library user education. The need for live online instruction has been recognised by systems operators, who have provided various aids for teaching. For example, in MEDLINE system, the user can interactively ask for instructions at the beginning of the search or for assistance during the search. The SDC (System Development Corporation) provides an online database over databases, DBI (Data Base Index) where the user can type

in the subject area of interest and receive information as to the appropriate databases ranked in order of suitability for searching.

One of the most common ways of providing training to intermediaries is by letting them observe and work under a trained searcher. This is considered to be an essential part of intermediary training. Real 'hands-on' training in online searching is an important element in the education of end users in computerised information retrieval. This would enable the students/users to be motivated and involve themselves actively in the learning process.

Choice of teaching method is often dependent not only on the learning effects but also on availability of equipment and cost of use.

11.2.7 Evaluation of a User Education Programme

Evaluation of a User Education Programme has been described and interpreted in different ways by educational researchers. It is concerned with the collection of information about the effects of an educational course or programme on users. It involves comparison of observed effects with expectations or intentions. Therefore, it is important to consider why evaluation is carried out while trying to understand what evaluation is.

“Evaluation is concerned with the collection and analysis of information about the input, in terms of educational potential, the variables affecting the educational process, and the end product or output. Evaluation can be directed towards the various aspects of the educational course or programme.” The basic purpose of evaluation is to collect and analyse information that can be used for rational decision making. The objectives of a successful programme of library user education must be based on synthesis of the needs of students, academic staff and library staff. Evaluation, based on attempts to measure the realisation of pre-specified objectives, must be multifaceted, concerned with library use and information skills, attitudes to libraries, effects of various instructional programmes and use of a given library or information resources.

Methods of Evaluation

There are three methods which are normally used for evaluation purpose.

They are:

- i) the psychometric method,
- ii) the sociological or management method, and
- iii) the illuminative or responsive method.

Psychometric evaluation is based on the assumption that it is possible to expose experimental and control groups to different treatments, while all other variables are controlled and to measure the changes by means of psychometric tests, achievement tests or attitude scales. Thus, the experimental group may be exposed to a new type of course where as the control group follows the traditional course, in every other respect the two groups are exactly comparable. Pre-tests and post-tests are given to both groups and the analysis is concerned with establishing significant differences in performance of the two groups. This evaluation procedure is concerned with measuring output in terms of pre-specified goals and no attention is paid to unexpected effects.

The sociological evaluation method is used in the study, of changes in the structure of an organisation. This type of evaluation makes use of interviews and questionnaires. Attention is focused on the organisation undergoing the change, rather than on comparison with any control group.

The third type of evaluation has been called illuminative evaluation by Parlett and Hamilton. It is not limited by the initial formulation or aims, but allows the expression of unexpected results. The actual implementation of an innovation is regarded as the most important part of the study. Research is focused on what is actually happening in response to the innovation. This type of evaluation is not concerned so much with testing of an educational programme, but with describing and understanding the conditions in which the programme works, and how the participants are affected by it. Observational studies and explorative interviews are used to obtain the information.

Need for the Evaluation of Library User Education

Of late, librarians have become more particular regarding the evaluation of programmes of library instruction. In 1976, Brewer and Hills observed that “librarians should take evaluation more seriously and to think more professionally about their teaching commitment”. A critical examination of the bibliographies and handbooks on user education reveals that evaluation is not well documented as compared to other aspects. It might be mentioned that while there is a growing increase in awareness about the importance of evaluation in library user education programmes, not many examples of systematic evaluation of library user education programmes are presently available.

One of the examples cited in this connection is that of the evaluation studies conducted at Chalmers University of Technology Library. A review of work done in library user education programme evaluation, reveals that evaluation has been carried out in many different ways. An attempt is made to study the value of such programmes and the measurement of the effects of such educational programmes on those who participated in such programmes. It might be emphasised that evaluation and the feedback received in the process will lead to the improvement of such programmes.

Self Check Exercise

Note: i) Write your answers in the space given below.

ii) Check your answers with the answers given at the end of this Unit.

5) How Information Technology (IT) helps in providing user education?

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6) What is the need for evaluating user education in libraries?

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11.3 INFORMATION LITERACY

Information Literacy (IL) is a very active area of research today. Library and Information Science (LIS) professionals are writing on the subject and are also engaged in research on it. It has evolved as a concept with the increasing importance of information in our lives. Information literacy finds more application in education and research sector, though it is equally applicable in work and other areas of life. Let us begin with understanding what is information literacy.

11.3.1 Concept

The concept of information literacy was first conceived by Paul Zurkowski in 1974, the then President of Information Industry Association. He observed that information literates are trained in the application of information resources to their work. It enables them to make more intelligent decisions at work, research and study as compared to those who are not information literate. One of the earliest definitions of information literacy was given in 1989 by the ALA Presidential Committee on Information Literacy. It stated that “to be IL, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information.” The concept evolved as a result of the ever increasing volume of information being generated across all fields and its increasing importance. Excess of information or paucity of information, both, create problems in using it for decision making. Paucity of information may result in a decision that does not take into account all facets of the problem or different experiences reported regarding the issue. Excess information, described as ‘information smog’, makes it difficult to sift relevant information from the huge mass of information, thus affecting the decision. It is presumed that a user is competent in using the different tools, forms and formats in which information exists to handle it efficiently and effectively.

Terms such as computer literacy, media literacy, library literacy, digital literacy and network literacy have cropped up recently to express these competencies. Computer literacy refers to the ability to handle computers so as to produce, process, store and retrieve information. The term technology literacy is broader in scope as it encompasses competencies in handling all Information and Communication Technology (ICT) components in managing information. Media literacy is another competency that an individual should possess to handle information competently. Information is available in different media e.g. print, electronic media including T.V., Internet, etc. Media literacy refers to the ability to access, store, organise, search and communicate information in these media. Network literacy is also considered a part of information literacy due to the fact that information does not exist in isolation and all institutions and organisations are interconnected and share information. Internet and Intranet are examples of networks that play a crucial role in our lives while using information. It is essential for one to be able to post, access, transmit and use information on a network resulting in one being network literate. Digital information is on the rise today. It has its own advantages of easy transmittal across distances, easy maneuverability, multiple and simultaneous access. A large volume of current information is available in digital form. We are converting even the print form of information into digital form. This demands one to be digitally literate to be able to handle digital information. Library literacy implies the competence to use the library effectively to access and use information. It implies knowing the scope of

reference and information sources, their structure and search engines which may be indexes in print sources. Broadly speaking the library skills have been equated to search skills. Some writers have gone to the extent of equating library skills to analytical skills.

Another comprehensive definition of information literacy was arrived at during the UNESCO sponsored meeting of Experts on IL at Prague. It was observed that “Information Literacy encompasses knowledge of one’s information concerns and needs, and the ability to identify, locate, evaluate, organize and effectively create, use and communicate information and address issues or problems at hand; it is a prerequisite for participating effectively in the Information Society, and is a part of the basic human right of lifelong learning”.

Another way of looking at information literacy is enumerating the characteristics of an information literate person that has been done by Doyle as a result of a Delphi study undertaken by him. He states that an “IL person:

- Recognizes that accurate and complete information is the basis for intelligent decision making;
- Recognizes the need for information;
- Formulates questions based on information needs;
- Identifies potential sources of information;
- Develops successful search strategies;
- Accesses sources of information including computer-based and other technologies;
- Evaluates information;
- Organizes information for practical application;
- Integrates new information into an existing body of knowledge; and
- Uses information in critical thinking and problem solving”.

Some more characteristics can be added to the list i.e., they understand the social and legal issues surrounding the use of information. They are competent and independent learners, are flexible in their working, are adaptable and can function independently and in groups.

11.3.2 Need

Information is the basic ingredient of our day-to-day working, learning, teaching, research, administration, etc. Information is available all around us. Those who utilise it effectively and efficiently are called information literates. It is not easy to utilise the information available in abundance because:

- It is increasing exponentially, thereby making it difficult to ascertain whether we have access to all information that currently exists;
- Anyone can publish on the Internet, thus making it difficult for the user to verify the authenticity and validity of information;
- Sources of information are many, therefore, making its control difficult;
- Information is available in different formats which a user should be adept in handling to use the information; and
- Using the information for some work requires skills of analyses and syntheses.

The above characteristics of information require individuals to be competent to handle and use the information which is acquired on being information literate. Moreover, the information society aims at overcoming the information gap in the society by democratisation of information so as to empower the citizens.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit

7) Define information literacy and discuss its need.

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11.3.3 Historical Background

As mentioned earlier, the exponential information boom and increasing dependence of the society on information gave birth to information literacy in 1974. The introduction of personal computers in 1980s saw further rise in information generation. Related developments in telecommunication technology brought people closer which resulted in information exchange. Developed countries also saw the rise of the phenomena of ‘information society’ during 1980s where information occupied central importance. They realised its importance and started programmes to prepare their citizens to make use of the varied information resources. American Library Association (ALA) took the initiative and recommended the formation of National Forum for Information Literacy (NFIL). NFIL was formed in 1989 as a first step to collectively promote information literacy across all sections of society. NFIL had representation from over 65 different bodies related to the fields of education, industry, governance, etc. The Forum aimed at creating awareness in the society towards information literacy by discussing developments in information literacy and publicising through announcements, advertisements, seminars as well as encouraging research on it. A definition emerged, given by the Presidential Committee of ALA on Information Literacy in 1989. It is the most comprehensive definition that has been most often quoted and also forms the basis of other definitions.

1990s saw the movement spreading to other countries. Society of College, National and University Libraries (SCONUL), UK gave the “The Seven Pillars of Information Literacy” model to spread information literacy among higher education community. Other models such as Kulthau Information Search Model, Empowering 8 IL Model, Big Skills IL Model, Pitts/Stripling Research Model were proposed simultaneously by other organisations and individuals. The year 2000 saw another important contribution in information literacy by Association of College and Research Libraries as it outlined standards for assessing information literacy of students. It included performance indicators and learning outcomes that help to monitor information literacy. IFLA included a section on Information Literacy by replacing the User Education Roundtable in 2002. Later it prepared a draft proposal, “International Guidelines on Information Literacy”

to guide libraries, individuals and organisations to design information literacy programmes.

The Prague declaration is an important event in the history of information literacy which is the result of an international conference on information literacy held jointly by UNESCO, NFIL and the National Commission on Libraries and Information Science in 2003. It described information literacy as a basic human right in lifelong learning and as a necessary ingredient for social, economic and cultural development of individuals, communities, nations and the society on the whole. IFLA organised a 4 day colloquium in Egypt at Alexandria on Information Literacy and Lifelong Learning. It concluded that information literacy and lifelong learning are essential for development of the information society. Known popularly as the Alexandria Proclamation, it requested governments and intergovernmental organisations to accord information literacy its due importance. Specifically it asked:

- to encourage conferences and seminars on information literacy within specific regions and socio-economic sectors to facilitate spread of information literacy;
- to train professionals from the LIS, education and archives sectors in the principles and applications of information literacy;
- to include components of information literacy in education as well as continuing education programmes for agriculture, economic and business sectors; and
- to make mandatory by accreditation bodies information literacy and lifelong learning to be necessary components of all education and training programmes.

Institutions were set up for popularising, teaching and undertaking research on the subject. Library associations also started having information literacy as an active area for discussions in meetings. IFLA introduced a section on information literacy to popularise the subject in institutions across the world. It also aimed to design curriculum for imparting information literacy. Similar efforts were undertaken by UNESCO and national associations in other countries. IFLA has a blog and listerv also on information literacy. Professionals in India also realised the importance of information literacy and actively participated in discussions. Thus, information literacy became the topic of discussion in many seminars, conferences and workshops. A series of meetings were organised under the aegis of UNESCO, ILA and IASLIC to popularise the subject. Central Library of University of Delhi has designed a programme on information literacy for researchers. More such efforts have to be undertaken to impart information literacy skills. Libraries in other countries have designed tutorials on information literacy that are available on their websites.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

8) Discuss in brief the historical developments in the area of information literacy.

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11.3.4 Information Literacy Models

Information literacy models are useful for LIS professionals and faculties in designing information literacy programmes. They provide a framework to develop an information literacy programme based on information seeking and writing and evaluating the information product. These models assure learning as an active and creative process that enhances critical thinking. They have also been used for designing and evaluating information literacy curricula.

Society of College, National and University Libraries (SCONUL) developed a model of information literacy in 1999 known as Information Skills Model. The seven skills recommended in the model are also called “The Seven Pillars of Information Literacy”.

The skills include the ability to:

- 1) Recognise the need for information;
- 2) Distinguish ways in which information gap may be addressed;
- 3) Construct strategies for locating information;
- 4) Locate and access information;
- 5) Compare and evaluate information obtained from different sources;
- 6) Organise, apply and communicate information in ways appropriate to the situation; and
- 7) Synthesise and build upon existing information, contributing to the creation of new knowledge.

Kulthau is credited for conducting a series of studies concerning user’s information behaviour. She observed student reactions while using different methods like interviews, case studies and assessing them in writing assignments, etc. Based on their responses, she proposed the Information Search Process. She proposed three models to impart library skills, viz. the source or library as the focus, the pathfinder or search strategy approach and the process model approach. The first two models have the library or the information resource as the focus, helping the user to reach and search the source, whereas the last model stresses upon the process of information search and use and is user-centred in contrast to the other two models that are resource and information centred. The process model helps empower the user in information search and use. It inculcates critical thinking and problem solving skills so as to strategise information use according to the situation.

Irving gave the nine steps Information Skills Model that guides students in completing their academic assignments. She realised the use of information literacy skills in different activities besides academic. She observed that information literacy helps in the work place as well as in personal life.

The Stripling/Pitts Research Process, given by two high school media specialists, combines content and process elements in providing a structure for learning. They feel that it is important to ascertain the state of knowledge of the recipient. It is described as the Student’s Mental Model. Once the teacher and the librarian identify the student’s state of awareness, they can challenge it for further learning. Using different methods, the teacher and the information literacy specialist can help student to make sense out of information, identify one’s learning so as to

match it with the developments in the subject and keep up to date. The model puts assessment as an essential component of learning making it contextual to real life helping learning.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

9) Explain the purpose of an information literacy model. Enumerate information literacy models.

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11.3.5 Information Literacy Standards

Association of College and Research Libraries (ACRL), 2000 formulated standards of information literacy for higher education that help in developing an information literacy curriculum for an educational institution. The standards also provide **Performance Indicators (PI)** and **Outcomes** for each standard that have been presented briefly below.

Standards of Information Literacy

The information literate student:

- 1) Determines the nature and extent of information needed.
- 2) Accesses the needed information effectively and efficiently.
- 3) Evaluates information and its sources critically and incorporates selected information into her or his knowledge base and value system.
- 4) Individually or as a member of a group, uses information effectively to accomplish a specific purpose.
- 5) Understands many of the economic, legal and social issues surrounding the use of information and accesses and uses the information ethically and legally.

IL Standard-1

The information literate student determines the nature and extent of information needed.

Performance Indicator

The information literate student:

- a) Defines and articulates the need for information.
- b) Identifies a variety of types and formats of potential sources of information.
- c) Considers the costs and benefits of acquiring the needed information.
- d) Re-evaluates the nature and extent of information need.

Outcomes 1

- Discusses with peers and in class to identify information need or identify a research topic.
- Explores information sources to gain familiarity with the topic and modifies the need to be more focused.
- Identifies key concepts that identify the need.
- Knows how information is produced, organised and disseminated.
- Recognises the difference of sources in different formats.
- Differentiates between primary, secondary and tertiary sources.
- Recognises that information may have to be constructed with raw data from primary sources.
- Determines the availability of local resources and decides on broadening his search beyond local resources and go for inter-library loan.
- Defines a realistic timeline to acquire the needed information.

IL Standard-2

The information literate student accesses the needed information effectively and efficiently.

Performance Indicator

The information literate student:

- a) Selects the most appropriate IR(information retrieval) system for accessing the needed information.
- b) Constructs and implements effectively designed search strategies.
- c) Retrieves information online or in person using a variety of methods.
- d) Refines the search strategy if necessary.
- e) Extracts, records and manages the information and its sources.

Outcomes 2

- Identifies appropriate investigative methods for information search.
- Investigates the pros and cons of the different methods.
- Selects the efficient and effective methods for information search.
- Develops a research plan appropriate to the investigative method.
- Identifies keywords and related terms for information search.
- Selects controlled vocabulary for information retrieval.
- Constructs a search strategy using appropriate commands.
- Implements the search strategy in various information retrieval systems using different user interfaces and search engines with different command languages.
- Implements the search using protocols appropriate to the discipline.
- Uses various search systems to retrieve information in a variety of formats.
- Uses class numbers to physically locate sources in the library.

- Uses online or in person service to retrieve information.
- Assesses the quality of search results to determine if alternative information retrieval systems are to be used.
- Checks whether a change in search strategy needs to be done.
- Repeats the search using a revised search strategy.
- Selects an appropriate ICT to extract the information.
- Creates a system to organise the information.
- Records pertinent citations for future reference.

IL Standard-3

The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.

Performance Indicator

The information literate student:

- a) Summarises the main ideas to be extracted from the information gathered.
- b) Articulates and applies initial criteria for evaluating both the information and its sources.
- c) Synthesises main ideas to construct new concepts.
- d) Compares new knowledge with prior knowledge to determine the value added, contradictions or other unique characteristics of the information.
- e) Determines whether the new knowledge has an impact on the individual's value system and takes steps to reconcile differences.
- f) Validates understanding and interpretation of the information through discourse with individuals.
- g) Determines whether the initial query should be revised.

Outcomes 3

- Reads text, selects main ideas and presents in his/her own words.
- Quote verbatim matter in quotes.
- Evaluates information regards its reliability, accuracy, validity, timeliness and point of view or bias.
- Recognises prejudice, deception or manipulation.
- Recognises relationship among concepts and combines them into useful primary statements.
- Extends initial synthesis when possible to a higher level of abstraction to construct new hypothesis that may require additional information.
- Uses ICT for analysing and presenting information.
- Determines whether information satisfies research or information need.
- Draws conclusions based on information gathered.
- Integrates new information with the previous information.
- Participates in discussions to verify if the information need has been satisfied.

- Review search strategy and information retrieval sources and expands if needed.

IL Standard-4

The information literate student individually or as a member of a group, uses information effectively to accomplish a specific purpose.

Performance Indicator

The information literate student:

- Applies new and prior information to the planning and creation of a new product or performance.
- Revises the development process for the product or performance.
- Communicates the product or performance effectively to others.

Outcomes 4

- Organises the content in a manner that supports the purpose and format of the product or performance.
- Articulates knowledge and skills transferred from prior experiences to plan and create a new product.
- Maintains a log of activities related to information seeking, evaluating and communicating.
- Reflects on past successes, failures and alternative strategies.
- Chooses a medium that best supports the purpose of the product or performance.
- Design in a way that best conveys the thought.

IL Standard-5

The information literate student understands many of the economic, legal and social issues surrounding the use of information and accesses and uses the information ethically and legally.

Performance Indicator

The information literate student:

- Understands many of the ethical, legal and many of the socio-economic issues surrounding information and information technology.
- Follows laws, regulations, institutional policies and etiquette related to the access and use of information resources.
- Acknowledges the use of information sources in communicating the product or performance.

Outcomes 5

- Identifies and discusses issues related to privacy and security in print and electronic environment.
- Identifies and discusses issues related to free vs. fee-based access to information.
- Identifies issues related to censorship
- Demonstrates an understanding of IPR, copyright and fair use of copyrighted material.

- Participates in electronic discussions following netiquette.
- Uses approved passwords and other forms of passwords to access information.
- Complies with institutional policies on access to information sources.
- Preserves the integrity of information resources, systems, equipment and facilities.
- Demonstrates an understanding of plagiarism and earnestly practices it.
- Selects an appropriate documentation style and consistently follows it.
- Posts permission granted notices for copyrighted material.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit

10) What are information literacy standards? Discuss their purpose.

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11.3.6 Imparting Information Literacy

Different types of programmes help impart information literacy skills. These range from stand-alone programmes to course related and course integrated programmes. A simple information literacy programme could be providing details on information sources, their scope and search techniques followed by exercises in searching databases and other sources. Course related programmes dwell on information literacy skills in different subjects and areas. Course integrated programmes are also for a particular subject/area. The difference between a course related programme and a course integrated programme lies in the fact that the former is a separate programme on information literacy whereas the latter is integrated in the course in a way that forms an inseparable part of the programme.

Information literacy programmes may be non-credit or for-credit. There is a feeling that information literacy programmes, like other non-subject programmes, should be non-credit. But the drawback with a non-credit programme is that it is not taken seriously. Learners might take it lightly and not give weightage to it. Even if a condition to pass it is set, learners seriousness is limited to just passing it. Course integrated information literacy programmes have an advantage that the learner is not able to sideline them. Smith (2003) has proposed an information literacy curriculum for the Sciences which is an integrated information literacy programme.

It is spread into four parts viz.,

- **Undergraduate: Beginning/ General** – includes introduction to the different types of resources (primary, secondary and tertiary), core resources in a subject, basic research process in the sciences, basic searching skills and applying the same to a database, evaluating a resource and citing a work.

- **Undergraduate/ Advanced-** includes role of information the process of research, in depth introduction to the types of resources, core information resources (print and electronic), introduction and application of more sophisticated search strategies, searching online resources, scientific information on the Web, portals, searching and evaluation, process of publishing scientific information and peer review, evaluating a scientific paper, evaluating information and critical thinking.
- **Graduate Students-** includes scientific research process and the sources of information at each stage, information tools of practicing scientists, scientific publication process in depth from the perspective of the scientist/ producer, key sources and databases in the discipline, information seeking process with a focus on in depth research for theses and research proposals, information management (including use of bibliographic management software, peer review process), evaluating scientific information and journal articles, citation indexing, Journal Citation Reports (JCR), Internet for scientific communication and information resources and key issues in scholarly publication including copyright, electronic publishing.
- **Professional Scientists: Post-Doctoral and Independent Researcher-** includes updates on new features of known resources and introduction to new resources, keeping up with new literature by Table of Contents (TOC) services, browsing, alerts/ Selective Dissemination of Information (SDI), identifying core journals in a discipline, citation counting and JCR, limitations of citation counting and impact factor, searching the ISI databases, advanced searching the key discipline – specific resources, bibliographic and data sources, search on the Web including portals, directories, organisation and publisher information, locating grant news and announcements, e-journals publishing and accessing, managing a personal resource collection, information skills and instruction in undergraduate and graduate courses, training and mentoring.

Purdue University Library, Illinois provides an information literacy curriculum with six goals, i.e. to enable the user to:

(<http://www.lib.purdue.edu/rguides/instructionalservices/infolitcurriculum>)

- understand the role, value and power of information in modern society;
- understand and be able to communicate his/her specific need(s) for information;
- understand that information varies in its organisation, content and format;
- retrieve information from a variety of systems and in various formats;
- evaluate information sources; and
- understand how to organise information effectively.

These goals have been further subdivided into objectives and these objectives help in designing a course. Nyamboga (2004) describes the efforts of Indian university libraries in information literacy. He gives a brief account of the automated resources of five universities i.e. Bangalore University, Cochin University of Science and Technology, Gulbarga University, University of Hyderabad, Kuvempu University and Mangalore University. It is expected for a library to be at least automated to provide information literacy skills training

today. A scan of the different university websites in India would bring to light the efforts of their libraries in providing information literacy services. Delhi University Library System leads as it provides information that facilitates the use of e-resources. It has also been organising information literacy sessions for its researchers every academic year wherein they are taught to use e-resources and also to cite references while reporting research. Information literacy programmes are also organised for the postgraduate departments, colleges for the faculties and students. Other universities provide information on their websites about e-resources and also how to use them.

The following list gives examples of the kinds of skills and competencies that might be taught to in courses being developed or revised with support from the Andrew W. Mellon grant, Integrating Information Literacy into the Liberal Arts Curriculum. This list is highly selective, and is intended merely as a starting point, or “touchstone”, for those doing course development work in this area. Generally speaking, undergraduate students in their first couple of years will acquire, use and refine their basic research skills (Basic Competencies) and students in their junior and senior years will use and refine the more advanced skills (Advanced Competencies).

Basic Information Literacy Skills Include:

- “Understand that materials in academic libraries are classified by subject (no fiction or biography sections, as in typical high school libraries), and be able to interpret a call number.
- Be able to identify the parts of a bibliographic record.
- Be able to use reference tools such as dictionaries, encyclopedias, handbooks, almanacs, and statistical sources to achieve a manageable research focus.
- Be able to distill a complicated research question into searchable concepts/keywords/synonyms.
- Understand the concept and usefulness of a controlled vocabulary (all online catalogs and many databases & indexes employ controlled vocabularies).
- Understand the difference between subject searching and word searching.
- Understand commands of the online catalog (Boolean, truncation, adjacency, etc).
- Be able to formulate a research strategy, and understand the process through which questions are refined, and redefined in the course of research.
- Understand that both popular and scholarly material exists on most any topic; be able to distinguish between these 2 types of material, and determine when it’s appropriate to use each type and why.
- Be able to distinguish between primary and secondary resources; be able to determine when it’s appropriate to use these 2 types of resource and why.
- Understand the nature of periodical literature, and why and when it’s useful.
- Understand what periodical literature abstracts and indexes do, and why they are useful. Understand that these resources vary in scope (what subjects are included, how many titles are indexed, etc.), arrangement (classified, subject, etc.), and content (full-text, abstracts, citation only).

- Be able to critically evaluate information for usefulness, bias, currency and authority (including Internet resources).
- Have an understanding of plagiarism and intellectual property issues-quoting, paraphrasing, attributing ideas; what is fair use?
- Be able to use a style manual to correctly document information sources in many different formats.

Advanced Information Literacy Skills Include:

- Be familiar with the subject-specific tools in their discipline (indexes, abstracts, electronic texts, and other specialized resources).
- Understand how scholars and practicing professionals in their discipline generate, control, and use information (published/unpublished sources, electronic & personal communications, etc.).
- Understand and effectively communicate the steps required for effective research, including formulating a thesis, creating a search strategy using a variety of sources.
- Develop the ability to critique their own research process; was the original need met?"

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit

11) Mention the different approaches of imparting information literacy.

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11.4 INFORMATION LITERACY AND USER EDUCATION

Library instruction programmes have evolved with time and changing information environments. Different programmes have been designed to serve different user needs. Library orientation, bibliographic instruction and user education programmes have been designed to serve the different needs of the library users. Information literacy emerged as a result of the explosion of information, increasing importance and the increasing digitisation of information. However, it cannot be placed in the same category as all other programmes. It has a broader scope and objectives as it is not limited to library resources and programmes. Its purpose extends beyond knowing and mastering the contents of information sources, searching and using information from them. Information literacy aims at developing competencies in individuals to keep themselves updated in their knowledge domains by utilising relevant and appropriate information, ethically and legally. Subsequently, they should be able to apply this knowledge for their

study, research, teaching and work. To achieve this, they need to develop reasoning, critical thinking, analytical and synthesis skills. Information literacy enables one to contextualise and see things in a greater meaningful context. Information literacy is an enabler of lifelong learning which is the focus of learning today.

11.5 SUMMARY

Libraries have designed different programmes to introduce their services and tools to their users. These differ from each other as they cater to different categories of users. Library orientation is provided for the freshers/ new users to make them aware of the rules, regulations, physical infrastructure and facilities in the library. Library instruction aims at helping users to understand the tools to access information. Bibliographic instruction is provided to the users to understand the use of the available tools of organising information and thus to search for information effectively and efficiently. Library orientation is concerned with enabling the student to become aware of the existence of the library and the services available and aiding the student to learn about the general use of the library, whereas library instruction is concerned with enabling the student to obtain information required for specific purpose by making full use of the resources and material available in the library and is concerned with problems of information retrieval.

Changes in the information world leading to the explosion of information and its increasing importance in decision making at all levels led to the birth of the concept of 'Information Literacy'. Information literacy as a concept is different from all other programmes of the library that relate to helping the user in accessing required information. It helps in interpreting the information, using it to add to one's repertoire of knowledge and thus remaining updated and helps in lifelong learning. It gains importance from this quality that it helps a learner to know how to learn. There are different methods and tools to learning about information resources. The developments in the concept of user education and information literacy have been discussed for the learners to appreciate the concepts. There is a vast literature on the subject as it is still developing and being researched. You are advised to go through the references as well as new developments to keep updated on the subject.

11.6 ANSWERS TO SELF CHECK EXERCISES

- 1) User education is described as a process or programme through which the potential users of information are motivated to use the information sources. User education has basically two components such as: i) orientation and ii) instruction.
- 2) The development of user education originated since 1934 when Louis Shores brought the concept of "Library Arts College" with the objective of developing the student learning through the use of library. Patricia B.K. Knapp and her 1964 Report also attempted at "exploring methods of developing a more vital relationship between the library and college teaching". Afterwards various institutions and associations in the USA, UK and India as well as UNISIST programme organised seminars and workshops to promote user education.

- 3) The objectives of library user education programmes are to: i) create awareness of the resources available and ii) acquaint a series of skills which can be made use of in connection with different academic studies.
- 4) Lectures, seminars, tutorials and demonstrations guided tour, video-tapes, programmed instruction, graphics, individual instructions are various methods and media which are used for library user education programme.
- 5) Computer-based on-line information retrieval systems are helpful to users to carry out on-line information searches either themselves or with the help of an intermediary.
- 6) The need for evaluating user education in libraries is to study the value of different programmes and measurement of the effects of such educational programmes on those who participated.
- 7) Information literacy is defined as the ability to recognise the need for information, to locate, evaluate and use effectively the needed information. It is difficult to ascertain whether we have access to all information that currently exists. Anyone can publish on the Internet making it difficult for the user to verify the authenticity and validity of information. Sources of information are also many making its control difficult. Information is available in different formats which a user should be adept in handling to use the information. The above characteristics of information require individuals to be competent to handle and use the information which is acquired on being information literate.
- 8) Information literacy came into existence in 1974, introduced by Paul Zurkowski. ALA played a major role by setting the ALA Presidential Committee on Information Literacy which gave comprehensive definition of information literacy enumerating the characteristics expected of an information literate person. A number of conferences were organised, particularly the one at Prague by UNESCO and at Egypt by IFLA that helped induce the attention in information literacy among professionals. Extensive literature was produced by individuals and organisations including universities and library associations that gave an impetus to research in the field. Information literacy is being researched all over the world. Libraries have designed programmes that need to have active collaborations of faculties and administrators to make them successful.
- 9) Information literacy models are useful for LIS professionals and faculties in designing information literacy programmes. They provide a framework to develop an information literacy programme from information seeking to writing and evaluating the information product. These models are learning and creative process that enhances critical thinking. They have also been used for design and evaluation of information literacy curricula. Some of the Information Literacy Models are: SCONUL Seven Pillars of Information Literacy, Kulthau's Information Search Process, Stripling's/Pitts Model, Irving Model.
- 10) Association of College and Research Libraries (ACRL, 2000) has formulated standards of information literacy for higher education that help in developing an information literacy curriculum for an educational institution. The standards also provide performance indicators (PI) and outcomes for each standard.

11) Information literacy can be imparted as stand-alone courses or as part of other courses. The component of information literacy may be integrated in other courses. These courses may be offered as non-credit courses or as credit-based courses.

11.7 KEYWORDS

Affective Goals and Objectives : They are concerned with feelings whether the student wants to, and subsequently does, behave in various educationally desirable ways. They are of long term importance for the behaviour of the student.

Bibliographic Instruction : It is concerned with learning to make use of the information resources available in a specific library. It is concerned with the problems of information retrieval and the techniques of exploiting information sources to the maximum extent.

Cognitive Goals and Objectives : These are concerned with understanding various concepts. Within domain they are arranged according to degree of complexity.

Digital Information Literacy : The ability to access, store, organise, transmit and use digital information effectively in various activities of life.

Illuminative or Responsive Evaluation : This type of evaluation emphasises participant observation and interviews as means to obtain an overall view of education programmes.

Information Literacy : The ability to use information effectively in various activities of life. IL helps in lifelong learning.

Media Literacy : The competence to use various media in accessing, storing, organising and transmitting information.

Library Literacy : The competence in using library tools and techniques in accessing, searching, retrieving and using information.

Library Orientation : The programme that tries to create the right kind of environment for effective communication between user and the library staff and to present an image of the library as a pleasant, friendly institution, where help can be obtained. It makes the user feel confident that the library staff is competent and is always willing to help her/him.

Psychometric Evaluation : It has evolved from the discipline of psychology and is based on the assumption that it is possible to expose experimental and control groups to different treatments, while all other variables are controlled and to measure changes by means of psychometric tests, achievement tests or attitude scales.

Sociological Evaluation: This approach has developed from the discipline of industrial sociology. This method is used to study changes in the structure of an organisation.

Technology Literacy : The competence in using ICT in accessing, searching, retrieving and using information.

User Education : The process or programme through, which the potential users of information are made aware of the value of information and are motivated to use information resources.

11.8 REFERENCES AND FURTHER READING

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UNIT 12 USER STUDIES

Structure

- 12.0 Objectives
- 12.1 Introduction
- 12.2 User and User Studies
 - 12.2.1 User Characteristics
 - 12.2.2 User Studies
 - 12.2.3 Need for User Studies
 - 12.2.4 Planning of a User Study
 - 12.2.5 Methodologies/Techniques for User Studies
- 12.3 User Studies: Limitations and Criticisms
- 12.4 Case Studies
 - 12.4.1 Efforts Made in India
 - 12.4.2 User Studies in the Electronic Environment
- 12.5 Summary
- 12.6 Answers to Self Check Exercises
- 12.7 Keywords
- 12.8 References and Further Reading
- Appendix

12.0 OBJECTIVES

After reading this Unit, you will be able to:

- identify the user of a library or of any information system or service;
- describe the characteristics of different users and categorise them into specific groups;
- explain the need for careful and continuous study of and contact with the users;
- discuss the relation of user studies in the design of information systems, products and services;
- explain the essential steps necessary in planning of a user study;
- identify and adopt suitable methodologies for user studies; and
- enumerate general variables and characteristics of users and use as subject of study.

12.1 INTRODUCTION

Libraries and information systems are designed and built with the primary objective of meeting the information needs of a group of people who constitute their clientele. In the past, information systems and services were developed based more on ‘literary warrant’ rather than ‘users warrant’.

In fact, the key to the aims, direction and contents of any and all information activities is the user. Talking of information users, P.L. Leggate observes “unlike

retrieval systems and computer systems, users are human and therefore difficult to classify. Unfortunately, one can say almost anything and it will be true of some users. Any generalisation which can be made will be true of at least some users". Identifying definite user groups to which information is to be provided involves number of complex, costly and demanding processes. However, the basic questions and problems are not how effective or efficient these processes are but:

- 1) what an information system or information unit or library can do to assist an information user in identifying, clarifying or solving a problem?
- 2) what such a system or unit can do to raise the probability that a user will find relevant and useful information with a minimum effort?

The above stated questions form the foundation on which the librarians have to build or develop information systems or information units including library services. These questions provide a practical operational framework for viewing the objectives, products and services as well as for evaluating the success or failures of such products or services.

If this contention is accepted, it follows that the first requirement for designing an information system, service or product would be to study thy users. The users should be studied not only before designing an information system or starting of an information service or product, but also, during the life cycle of the system or service. It might be emphasised here that while study of users increases the probability of a longer life cycle of such a system, lack of a careful study may decrease it sharply.

Conducting a user study is a difficult proposition because the related theories, models and methodologies have not been fully developed and perfected. However, there is a much higher probability that products and services based on user studies will be better designed than those based on intuition, anecdotal evidence or committee deliberations.

It must be stressed that the basic purpose of a user study is to gather information that is useful in design and provision and/or evaluation of specific information products or services geared to meet the needs of specific users. Thus, user studies are a necessity in all phases of information activities from design to evaluation to marketing and to management. Therefore, the central question is, what useful information about users or uses should be collected? In other words, what user and use variables should be collected? The choice of such variables for study is wide. Depending on the objective, individual studies will concentrate on a limited number of specific variables. Some of the general variables possible to examine in user studies are:

- the factors or variables in the users of information that effect their perception of the problem;
- the specific ways in which users are most likely to use information and their capacity to use a given type of information;
- the stages in the information transfer process which relate to the knowledge an individual has about a specific idea or innovation;
- environmental or social characteristics; and
- communication characteristics, etc.

In the literature of LIS, the term ‘user studies’ has been interpreted differently. Users studies encompass various inter-related concepts and categories such as information use, information needs, information seeking behaviour, etc. The different interpretations along with other related aspects are discussed in the subsequent sections of this Unit. The main purpose of this Unit is to furnish adequate information to the participants of this programme so that they are in a position to plan and conduct a user study in course of their professional work.

12.2 USER AND USER STUDIES

The user is the focal point of all information activities at all levels. User is a broad concept which may include both producers as well as clients of information. In LIS literature, a number of terms have been used to signify users. For example, the words patron, client, member, reader, customer are used to signify the concept of a user. Whitaker defines user as a person who uses one or more of the services provided by a library. On the other hand, Guinchat opines that a user can be defined on the basis of two sets of criteria, namely: i) objective criteria, such as socio-professional category, specialist field, nature of the activity for which the information is sought, reason for using the information system, and ii) social and psychological criteria such as the user’s attitudes and values with regard to information in general and in his relations with information unit in particular. The key factor being reasons behind his particular information seeking and communication behaviour and his professional and general social behaviours. Guinchat categorises users into three broad groups : i) users not yet engaged in active life, such as students; ii) users with a job and whose information needs are related to their work. They are classified by main activity (management research, development, production, services, etc.) by branch of activity and/or specialist field (civil service, agriculture, industry, etc.) and by level of education and responsibility (professional staff, technical. workers); and iii) the ordinary citizen needing general information.

Prof. J.D. Bernal classifies users of scientific and technical information from the point of view of the kind of information services required by them. One major aspect of this grouping is combining engineers, architects, medical practioners and agriculturists into the category of technologists. Also, managers (both business and industry) can be conceived as a distinct group of users of information. These two groupings are depicted in the Figures 12.1 and 12.2.

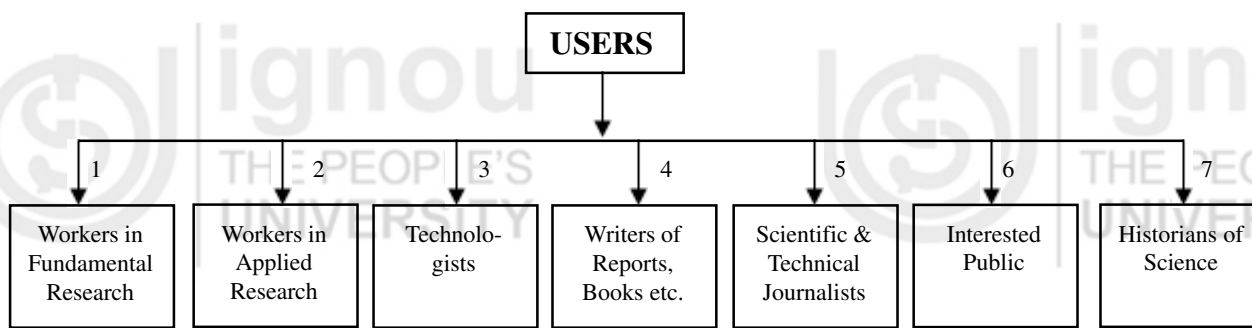


Fig. 12.1: Functional Categories of Users

Source: Prof. J.D. Bernal

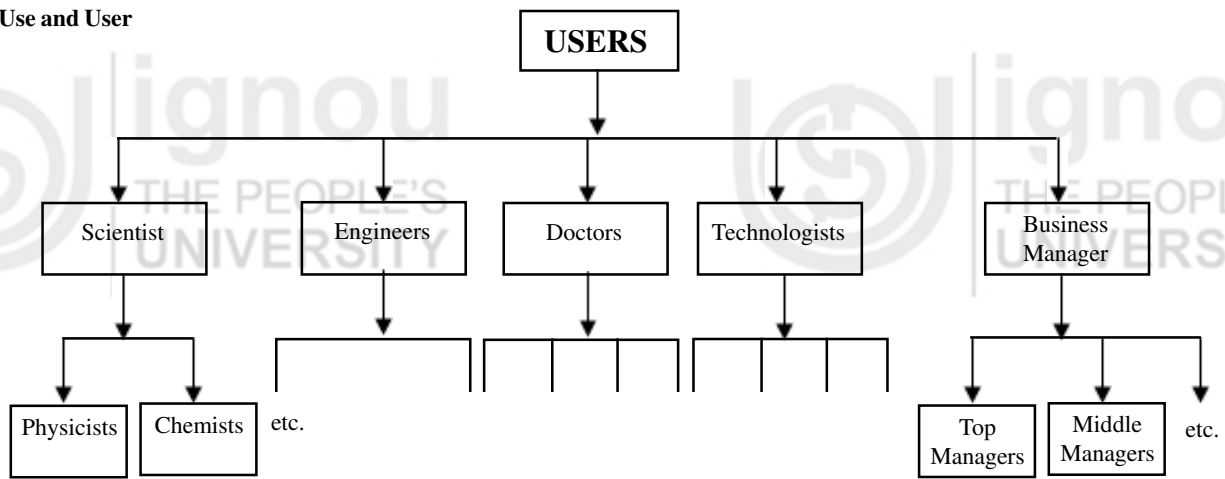


Fig. 12.2: Users Categories Professional Groups

Source: Prof. J.D. Bernal

Another method of grouping users is on the basis of their approach to information. They can be classified as :

- the potential user – one who needs information which can be provided by specific services;
- the expected user – one who is known to have the intention of using certain information services;
- the actual user – one who has actually used an information service regardless of the fact whether he derived advantage from such a service or not; and
- the beneficiary user – one who derives a measurable advantage from information services.

It may be worth noting here that Ranganathan has grouped users, on the basis of types of services, into the freshman, ordinary inquirer, specialist inquirer and general reader. It may be stated that a wise system designer recognises that the user of information must be an active participant in the system whose needs should direct the system design. Therefore, the information service must anticipate, match and be responsive to the requirements of its clientele. In certain situations the users may not be fully aware of the many advantages of a particular system or service. In such situations the system designer must guide the user regarding the pertinent aspects providing a tailor-made service. Generally, three important groups of scientific and technical information system users are distinguishable according to the kind of activity in which they are engaged in are:

- a) researchers,
- b) practitioners and technicians engaged in developmental and/or operational activities in the different fields of technology, and
- c) managers, planners and other decision makers who are engaged in coordinating development activities at local, national or international levels.

The above mentioned three groups are very broadly defined and are not exhaustive.

12.2.1 User Characteristics

Since the main purpose of any user study is to gather information that is useful in design, provision and evaluation of specific information products or services geared to specific users, it becomes necessary to have full understanding of the user characteristics. User characteristics may be studied under the following mention groups: i) individual characteristics, ii) stages in the information diffusion, iii) environmental or social characteristics, and iv) communication characteristics.

Individual Characteristics

The individual characteristics of users deal with (a) their perception of the problem and their definition of the problem faced along with their description of the needed information (b) the specific ways in which they are most likely to use information and their capacity to use a particular type of information.

Stages in the Information Diffusion

This aspect relates to the amount of knowledge an individual (or a group of users) has about a specific idea or innovation. Information needs at various stages are different and therefore information products and services have to be tailored for each stage. This might be possible only when the capabilities of the user are clearly perceived.

Environmental or Social Characteristics

The factors in the social system (such as the norms, situation, reference groups, etc.) that have an important effect on the individual’s behaviour and communication fall under the category of environmental or social characters pertaining to an individual (or group) of user. Awareness about these factors enables the system designer to precisely gauge the information requirements of the user.

Communication Characteristics

The elements related to the use and diffusion of information constitute what are known as communication characteristics. Some of these include information sources, information structures, communication channels and information systems. These aspects need to be correlated with other characteristics.

A proper and systematic user study aims at collecting all the pertinent data concerning the users with the objective of building an efficient information system. Such data enables establishment of close relationship between users and the information system designers.

Self Check Exercise

Note: i) Write your answers in the space given below.

ii) Check your answers with the answers given at the end of this Unit.

1) What do you understand by the expression user of a library, information system, information service or product?

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- 2) Explain what you understand by the expression ‘categories of users’. Mention the different categories of user that an information professional generally comes across.

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- 3) Discuss the main groups under which user characteristics may be studied. How does the knowledge of users help information system designers?

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12.2.2 User Studies

In the foregoing paragraphs the concept of user and the characteristics associated with users have been described and discussed. In this section let us try and understand what constitutes a user study and its development. It is the recognition of the paramount importance of users that leads us to user studies.

In the literature of LIS, the earliest reference we come across is to the study conducted by L.R. Wilson in the late 1930s. It was an attempt to investigate the distribution and status of libraries in the USA and was not aimed at obtaining information relating to library use or users.

The concept of users and their information needs found some expression at the first conference of Royal Society held at London and became a subject of discussion at the International Conference on Scientific Information held at Washington in 1958. Prof. J.D. Bernal’s paper entitled “The Transmission of Scientific Information: A User’s Analysis” received a great attention.

It may be mentioned here that a pilot study on the use of scientific literature by scientists was conducted by R.R. Shaw in 1956 on behalf of National Science Foundation. Shaw’s study is considered as one of the pioneering efforts in the direction of user studies. Since then, a number of comprehensive studies have emerged on the subject. For example, Davis and Bail compiled a bibliography consisting of 438 such studies as early as 1964. It has been recorded that by 1977 more than 1000 important studies were conducted on the subject of ‘user studies’. It must be mentioned that the growth of science and technology and the importance accorded to the use of scientific information proliferated such attempts of user studies.

An event of great significance in the history of user studies was the establishment of the Centre for Research on User Studies (CRUS) in 1975 by the British Library

at University of Sheffield. The main objective of this centre was to create a national centre to act as a focal for research in user studies. The establishment of a Centre for Research on User Studies indicates the importance of the subject user studies.

12.2.3 Need for User Studies

Information need surveys or user studies are potentially useful in bridging the gap between the kind of information services needed and the kind of services in existence. Any information system would definitely require identification of user requirements. However, there had been certain doubts regarding the point whether information needs could really be established through user studies or surveys. For instance, it has been stated that information needs distinct from wants, cannot be determined through public opinion poll type surveys. It has been further stated that information service is a professional service (such as medicine) as opposed to a consumer service (such as packaging of breakfast food) and hence users of information services cannot provide correct guidance in the designing or improvement of an information system. This view shifted the emphasis towards the techniques or methodologies for conducting such surveys. This situation led to the efforts for development of reliable methodologies for conducting user studies and further emphasised the need for conducting user studies as necessary requirement for the design and operation of effective and efficient information systems, services and products.

12.2.4 Planning of a User Study

It is important to plan a user study carefully from the beginning to the very end. In this regard, it is necessary to lay down a detailed plan of each step beforehand. The various stages of work are to be spelt out along with the general objectives of the study, translation of the objective into a set of questions or means of answering the questions, selection of the tool or appropriate technique for obtaining the answers, the selection of the sample of users to be observed and a plan for getting the necessary co-operation, the pre testing of the technique, the full scale study itself and analysis of data and preparation of the final report. In each stage of work certain decisions are to be taken.

Different Steps in the Plan

Any plan for conducting a user study should consist at least the following steps:

- i) Surveying the previous studies and literature in general and learning about all aspects of user studies;
- ii) Spelling out the objectives of the study;
- iii) Determining the variables to be studied and the specific model to be followed;
- iv) Selecting the sample population to be studied;
- v) Determining the method for collection of data for observation;
- vi) Determining the method of analysis of data or observations;
- vii) Determining the ways of presentation of data and utilisation of the results including dissemination of such results.

While setting the objectives of the proposed study one has to spell out in clear terms what exactly one is going to find out from the study. All the subsequent

stages will hinge around this decision. In this context, it may be pointed out that what are generally referred to as information use or need studies are a composite of many different things. Such studies may be grouped into four broad categories.

Different Categories of User Studies

- i) Studies which are conducted to find out the overall pattern of interaction of the users community with the communication system, without reference to any specific information receiving event are categorised as **communication behaviour studies**;
- ii) In the second category are placed studies which are conducted to find out the use of any communication medium like primary periodical, secondary periodical, etc. and are called **user studies**;
- iii) The third category includes studies which are conducted to find out the pattern of flow of information in the science communication system as a whole. They constitute **studies in the flow of information**;
- iv) The fourth category includes **studies/surveys** which are conducted within the limited confines of a library or an information centre, mainly to find out the extent of use of the services and facilities offered by an agency with the ultimate objective of improving the system or services.

It may be mentioned that any particular study/survey may have different aspects and hence may overlap with the categories mentioned above. Hence, while setting the objectives, it has to be decided what exactly will be the nature of the study/survey according to the four categories described above.

12.2.5 Methodologies/Techniques for User Studies

After the need for conducting user studies has been established and the relevant aspects (variables) to be studied are decided, the next logical step would be selection of methods for conducting a user study.

From sizable literature on the subject, it is evident that most of the general surveys, e.g. interview, questionnaire, diary, etc., have been extensively used by researchers in the field of information use study also. The methods used so far may be grouped as under:

- a) General or Conventional Methods
 - i) questionnaire
 - ii) interview
 - iii) diary
 - iv) observation by self
 - v) operations research study
- b) Indirect Methods in the Context of Information Use
 - i) analysis of library records
 - ii) citation analysis
- c) Special and Unconventional Methods
 - i) computer-feedback
 - ii) unconventional methods

A description of all the above methods may be found out from literature on the subject. Hence, a detailed discussion is not attempted here. However, the selection of methods depends on previous decisions on objectives of the study and also on the variables to be studied. Three important aspects are involved in the selection of methods:

- i) selection of a sample of user population;
- ii) determination of procedures for collection of data from or about the sample;
- iii) determination of procedures for analysis of collected data to derive or summarise results.

Each one of these, has to be considered in detail before one actually plunges into action regarding user studies. One of the most commonly committed mistakes in user studies is to collect data without any idea as to how the data is to be analysed. It is always useful to consult a statistician and take her/his help in the selection of appropriate methods to be followed in the envisaged user study. This would greatly enhance the usefulness of the results derived from the user study. However, the study should avoid incorporation of meaningless statistics.

As to the question of selection of a sample of user population, there are a number of methods available which would facilitate this task. The most common in this regard being:

- a) Convenience Sampling : which means picking the first 25, 50, etc. users that come along as subject of study;
- b) Random Sampling : which involves picking users for the study from a population at random;
- c) Stratified Sampling : which involves sub-dividing the population into sub-groups and then picking users for study at random;
- d) Representative Sampling : which involves determining beforehand individuals, pairs of individuals or small groups with some characteristics in common as subject of study.

Similarly, there are a number of methods available for data collection. Some of the commonly used methods are:

Surveying: This involves questioning users and obtaining answers directly from users about their behaviour, attributes, values, conditions and/or preferences. This is by far the most frequently used method in user studies. It at times also leads to somewhat biased results.

Observation: It involves making direct observations on the communication behaviour of users in given situations, practices, time periods, etc.

Records analysis: This method involves obtaining written records or other transcripts of previous communications (such as papers, correspondence, statistics) and deriving inferences about users based on the records.

Experimentation: This method involves introduction of an element in a defined group of users and observing the results or consequences, possibly also comparing the group with another where the element was not introduced.

Next step involved is identification of some of the data analysis methods. An analysis is generally an informal activity because it consists of gaining an impression or feeling of what the data indicates and in which direction they point. For a formal analysis the most frequently adopted methods are:

Statistical analysis which comprises application of standard statistical techniques to summarise, compare and test for significant data which is expressed numerically.

Semantic analysis involves application of semantic techniques to summarise and compare data which is expressed verbally.

Psycho-social analysis which involves application of psychological, sociological or anthropological techniques to classify or describe the data obtained through a user study, which is represented conceptually, logically or representatively.

Economic analysis which comprises application of macro or micro economic techniques to derive conclusions in economic terms on data expressed in all the above mentioned ways.

Each of these techniques of analysis requires basic knowledge of the respective fields. Standard statistical packages are widely available which help accomplish the required results. However, use of such packages requires some practical training. Appropriate techniques can also be adopted relatively easily from the previous studies.

Self Check Exercise

Note: i) Write your answers in the space given below.

ii) Check your answers with the answers given at the end of this Unit.

4) Discuss briefly the need for user studies.

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5) What is meant by planning of a user study? Indicate the different steps in conducting a user study.

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- 6) Discuss briefly the different types of user studies.

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- 7) Explain some of the methodologies/techniques employed for conducting user studies.

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12.3 USER STUDIES: LIMITATIONS AND CRITICISMS

Although a number of studies have been conducted in the past to assess the information needs of scientists, engineers and technologists, the information needs proved to be extremely complex and varied. As a result, most of these studies proved to be inadequate to the task of completely revealing the precise nature and needs of information users. These investigations have, at best, provided only an *a priori* approach to the problem and much is needed to be done in this direction.

There have been some criticisms on the methods and techniques used in the user studies/surveys. For example, it has been stated that the question of sampling in user studies left much to be desired. In other words in selecting the sample, refined techniques of random sampling have not been taken into account. The usual error of getting into the sample a large number of target population who take an interest or are methodical and co-operative to return questionnaires and diaries, is always there. This error should be avoided. Moreover, it is not only the size of the sample that is important but also its composition taking into consideration the environments of the participants. One of the critics has suggested as many as seven different environments as follows: i) academic institutions, ii) research organisations, iii) industry, iv) government, v) professional associations, vi) trade unions and political parties, vii) the press and broadcasting. Similarly, users can also be categorised according to functions such as : i) research, ii) teaching and training, iii) management, iv) social work and administration, v) the press and broadcasting, vi) politics, vii) business and commerce, viii) study and learning. All these are likely to influence a person's information needs and behaviour.

There are several other variables also. These are demographic (e.g., age, education, length of experience in research) and psychological (such as motivation, intelligence) variables which may well be related to information requirements,

needs of users. Hence, it has been mentioned that user psychology must also be taken into account. Aspects of user psychology to be considered include, the search time that can be tolerated, the amount of irrelevant material that can be tolerated, time available for retrospective searching, the preferred form of the search product, user's input channel capacity, work habits, terminological idiosyncrasies, prior knowledge of reference tools and information system and user's judgement about the comfortableness of the physical aspects of the information system.

The importance of including individual variables in studies of information gathering and information seeking behaviours has also been stressed by some experts. Some of the individual variables cited include : i) age, ii) experience in research in a particular job, iii) background qualification, iv) whether solitary or team worker, vii) persistence and thoroughness, viii) motivation, etc.

With appropriate inclusion of some of the above mentioned aspects in user studies, the critics believe that the shortcomings in them can be minimised and the findings can be made valid and widely applicable.

12.4 CASE STUDIES

Since Prof. J.D. Bernal made his pilot study for the Royal Society's Scientific Information Conference in 1948, there had been several attempts to investigate the methods by which scientists and engineers obtain the information they need and then put them to use. The basic assumption behind these efforts was that the conventional information tools and systems currently in use needed improvement and the improved tools and services of tomorrow would spring from those we have today.

Use studies/surveys have been conducted in different countries at different levels with different samples of population. It is not possible to discuss or present the findings of all such studies in this Unit. However, the important findings of some of the studies have been reported in the literature which are provided in this Unit in the form of references.

One of the investigations published in 1995, reported the analysis of some 796 user studies noticed through LISA for the period 1969-1989. This investigation revealed that the contemporary research areas in user studies included areas like direct enquiry of users, assessment of user attitudes, experimental information services and their evaluation and direct observation of users. The less researched areas in user studies appeared to be use made of information, communication not involving documents, relevance and refinements, etc. Now, the situation has changed completely. If a researcher, in present times, online searches LISA for the term 'User Studies' the number of related studies which includes the traditional studies as well as studies on the use of Internet, electronic resources and services will be in thousands.

12.4.1 Efforts Made in India

The problems of communication in science and the user interface have received some attention in India. For instance, INSDOC now NISCAIR conducted a use survey relating to its current awareness service entitled "INSDOC List of Current Scientific literature" as early as 1964. As a result of the findings of this survey

INSDOC had to wind up the above mentioned current awareness service and had to start the compilation of Indian Science Abstracts. Another significant effort in this direction is the study conducted by Carl M. White regarding the use of Delhi University Library in 1965. In the same year (i.e. 1965) the Indian Association of Special Libraries and Information Centres (IASLIC) conducted a seminar on Users and Library and Information Service. Though the seminar did not discuss or report any worthwhile study/survey, but it helped in drawing the attention of the authorities of special libraries and information centres towards these problems.

In the year 1967, INSDOC conducted a pilot survey to assess the information potential and the information needs of the research workers engaged in the field of electronics. This survey was undertaken in connection with the formation of Electronics Information Grid. Interview technique and questionnaire method were used in this study. The findings, though essentially empirical in nature, have been published in the form of a report. Yet, another worthwhile effort in this direction was the survey conducted by Krishan Kumar at the Delhi University to determine the reading patterns, information needs and information gathering habits of the teachers and research scholars attached with the chemistry department of the University. This survey was conducted by means of a questionnaire (see appendix) and also through interviews. The findings of this survey are compatible with the findings of similar studies undertaken in other countries. A sample copy of the questionnaire used in this study is provided in the appendix for your reference.

Though libraries exist for users, research in Indian librarianship has taken for granted the user component of the system. It is only in recent years that extensive and in depth customer related studies began to appear. One such effort was made by M.S. Sridhar. His doctoral research work was on information seeking behaviour (ISB) of the Indian Space Technologists (IST) of ISRO Satellite Centre (ISAC), Bangalore. The results of this study have been published under the title “Information Behaviour of Scientists and Engineers”. This study is a valuable contribution towards user studies and therefore worth considering as one of the case studies. H.R. Sethi conducted a user study on Information Seeking Behaviour of Social Scientists in JNU, Delhi. Neena Kanungo, in her doctoral research, explored the Information Seeking Behaviour of Researchers in History and Political Science in four central universities of Delhi. The case studies referred to above are illustrative in nature and not exhaustive.

12.4.2 User Studies in the Electronic Environment

With the emergence of the Internet and online information resources and services, the LIS professionals have witnessed a shift in the scope and methodology of user studies. Now, the focus has been shifted to the information needs of users of electronic resources, services, databases, etc. As a result, many studies have been planned focusing on the impact of the Internet, electronic resources and services on the user community. If you browse the Web or secondary source such as LISA or any other related database of e-resources, you will come across numerous studies on the said subject. Even if you browse the contents of the printed scholarly periodicals you will find many such studies.

Many of the libraries, be it academic or public or special, have turned into hybrid libraries catering to the information needs of the traditional user as well as the

digital user. The electronic environment has given ample opportunities to the user in the use of library and its resources and services. Now, the user has the option to use the library and its sources and services anytime, anywhere.

The online environment has also brought changes in the case of users and their characteristics, their information needs, etc. The information sources and services which are available online can be used with or without subscription. These changes have also influenced the use of libraries and its resources. Such studies help in understanding the use and delivery of electronic information as well as its impact on the users. We are here giving you one example of a study on electronic information services. The Jubilee (JISC User Behavior in Information Seeking Longitudinal Evaluation of Electronic Information Services) Project of JISC (Joint Information System Committee) of UK was on electronic information services. One of the objectives of the study was to predict, monitor and characterise information seeking behaviour in relation to electronic information services (EIS) in different disciplines. The project aimed to explore various questions: Which electronic information service do the users use? How do they use? What are the electronic information services they use and what for? What factors did influence the use of electronic information services? Are there variations in the use of such services among different user groups and disciplines? Is the use of electronic information services changing? What will be the impact of changes in electronic information services use/availability on student learning? For data collection the Project used qualitative as well as quantitative approach and survey tools such as questionnaire, electronic questionnaires, interviews (face to face as well as on telephone), focus group discussions and workshops with practitioners. A tool-kit was constructed with the objective to improve the use of EIS in higher education in UK.

The results of user studies conducted on the electronic environment help in decision making in subscribing e-resources and services in the library; secondly, the findings persuade the publishers for improving the resources and services; and finally, the results also help in the development, improvement and effectiveness of the information system.

Self Check Exercise

- Note:** i) Write your answers in the space given below.
ii) Check your answers with the answers given at the end of this Unit.
8) Briefly discuss some of the limitations and criticisms concerning user studies.

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- 9) Describe some of the significant efforts made in India relating to user studies/ user surveys.

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12.5 SUMMARY

In this Unit on user studies, an attempt has been made to explain to you the concept of user of a library or information system. Different connotations to the term 'user' have been discussed. It has been emphasised that libraries and information systems are designed and built with the primary objective of meeting the information needs and requirements of a defined group of people, called users. Users, therefore, become the focal point of all information activities at all levels. This situation calls for acquisition of an in depth knowledge regarding the users of an information system. The users should be studied not only before designing of an information system or starting of an information service or product, but also during the life cycle of the system or service. It might be mentioned here, that while the study of users increases the probability of a longer life cycle of an information system, lack of it might decrease it rather sharply.

The efforts made to acquire an in depth knowledge of users constitute what are commonly referred to as user studies. The need for user studies, the planning necessary for a user study, the methodologies/or techniques available for conducting user studies and other important aspects related to user studies have been described and discussed in this Unit. Detailed information relating to some significant efforts made in the development of user studies in developed countries as well as in India has been furnished. These are to help the students to a large extent, to grasp the basic concepts relating to user studies. The Unit, as a whole, will enable them to gain sufficient insight and skill to plan and conduct user studies, if needed, during the course of their professional work.

12.6 ANSWERS TO SELF CHECK EXERCISES

- 1) User is a broad concept, which may include both producers as well as clients of information. In library and information science literature, a number of terms have been used to indicate users of a library or an information system. For example, the words patron, client, member, readers, customer are used to signify the concept of a user. Whitaker defines user as a person who uses one or more of the services provided by a library. On the other hand, Guinchat opines that a user can be defined according to two sets of criteria namely: i) objective criteria such as socio-professional category, specialist field, nature of the activity for which the information is sought, reason for using the information system; and ii) social and psychological criteria such as the user's attitudes and values with regard to information in general and in his relations with the information unit in particular. There are reasons behind his particular

information seeking and communication behaviour and his professional and general social behaviour. Users constitute a very important component of any information system or service.

- 2) Many information scientists attempted to classify and group users of library and information systems and services. Different perceptions have been expressed by them.

Prof. J.D. Bernal provides some sort of classification of users of scientific and technical information from the point of view of the kind of information services required by them. They are: scientists, engineers, doctors, technologists and business managers. Guinchat, categorises users into three broad groups : i) users not yet engaged in works such as students; ii) users with a job and whose information needs are related to their work; iii) the ordinary citizen needing general information. Another way of grouping users is on the basis of their approach to information as i) potential user; ii) the expected user; iii) the actual user; and iv) the beneficiary user. It may be of interest to know that Ranganathan grouped users, on the basis of types of services, into freshman, ordinary inquirer, specialist inquirer and general reader.

Generally speaking, an information professional comes across three important groups of users: a) researchers, b) practitioners and technicians engaged in developmental and/or operational activities in different fields of technology, and c) managers, planners and other decision makers who are engaged in co-ordinating developmental activities at local, national or international levels.

- 3) Since the main purpose of any user study is to gather information that is useful in design, provision and evaluation of information products and services, it is imperative to have a full understanding of the user characteristics. User characteristics may be studied under the groups: i) individual characteristics; ii) stages in the information diffusion, iii) environmental or social characteristics, and iv) communication characteristics. A proper and systematic user study aims at collecting all the pertinent data concerning the users with the objective of building an efficient information system. Study of user characteristics enables establishment of a close relationship between users and information system designers and service providers.
- 4) Information need surveys or user studies are potentially useful in bridging the gap between the kind of information services needed and the kind of services in existence. Any information system would definitely require determination of user requirements. In the past, there had been doubts regarding the point whether information needs could be established through user studies. But, subsequent research has proved that it is possible to find out information needs of users by means of user studies. The availability of reliable methodologies for conducting user studies has enabled the profession to establish the fact that design of effective and efficient information systems and services can be better accomplished through user studies. The establishment of a research centre in U.K. to undertake research on user studies in 1975, proves the importance attached to this subject. It may, therefore, be emphasised that user studies are a pre-requisite for the development of efficient information systems, services and products.

- 5) Like all serious efforts, conducting of a user study requires prior planning. It is important to plan a user study from the very start to the end. For this purpose, it is necessary to work out a detailed plan of each step in advance. The different stages of work are the general objectives of the study, translation of the objectives into a set of questions or means of answering the questions, selection of the appropriate techniques for obtaining the answers, the selection of the sample of users to be observed and a plan for obtaining the necessary co-operation, the pre-testing of the technique, the full scale study itself, analysis of data and preparation of the final report need to be clearly conceived after deep thinking. In each stage of work certain decisions need to be taken.

Different steps involved in the plan. Any plan for conducting a user study should consist at least the following steps:

- surveying the previous studies and literature in general and learning about aspects of user studies;
- determining the objectives of the study;
- determining the variables to be studied and specific model to be followed;
- selecting the sample of the population to be studied;
- determining the method for collection of data for observation;
- determining the method of analysis of data or observations; and
- determining the ways of presentation and utilisation of the results including dissemination of such results.

While establishing the objectives of the proposed study, one has to spell out in clear terms what exactly one is going to find about. All the subsequent stages will depend on the decision.

- 6) Information use studies or information need studies are a composite of many things. Such studies may be grouped into four broad categories such as studies which are conducted to find out the over all pattern of interaction of the user's community with the communication system, without reference to any specific information receiving event, are categorised as communication behaviour studies; studies which are conducted to find out the use of any communication medium like primary periodical, secondary periodical, etc. are called user studies; the third category includes studies which are conducted to find out the pattern of flow of information in the science communication system as a whole. They constitute studies in the flow of information; the fourth category, includes studies/surveys which are conducted within the limited confines of a library or an information centre, mainly to find out the extent of use of the services and facilities offered by an agency with the ultimate objective of improving the system or service. It may be pointed out that any particular study/survey may have different aspects and hence may overlap with the categories mentioned above. Hence, while setting the objectives, it has to be decided what exactly will be the nature of the study according to the categorisation stated above.
- 7) Once the need for conducting user studies has been established and the relevant aspects (variables) to be studied are decided, the next logical step would be selection of suitable method for conducting a user study.

From the literature available on the subject, it is evident that the majority of user studies adopted three broad categories of methods :

- a) General or Conventional Methods such as:
 - i) questionnaire
 - ii) interview
 - iii) diary
 - iv) observation by self
 - v) operations research study
- b) Indirect Methods in the context of Information Use
 - i) analysis of library records
 - ii) citation analysis
- c) Special and Unconventional Methods
 - i) computer-feedback
 - ii) unconventional methods.

The important aspects involved in the selection of methods may be mentioned as follows:

- i) selection a sample of user population;
- ii) determination procedures for collection of data from or about the sample;
- iii) determination of procedures for analysis of collected data to derive or summarise results.

Each one of these, has to be considered in details before one actually conducting user studies. As to the question of selection of a sample of user population there are number of methods available. The most common among them are:

- i) Convenience sampling
- ii) Random sampling
- iii) Stratified sampling
- iv) Representative sampling

Similarly a number of methods are available for data collection. Some of them are:

- i) surveying
- ii) observation
- iii) records analysis
- iv) experimentation

Next aspect involved is identification of some of the data analysis methods. For formal analysis the frequently used methods are :

- i) statistical analysis
- ii) semantic analysis

- iii) psycho-social analysis
- iv) economic analysis

Each of these formal methods require basic knowledge of the respective fields. Standard statistical packages are widely available which help accomplish the required results. However, use of such packages requires some practical training on the part of the users. One can also adopt the techniques used in previous studies.

- 8) Although a number of studies have been conducted in the past to assess the information needs of scientists, engineers and technologists but the information needs proved to be extremely complex and varied, as a result, most of these studies proved to be inadequate to the task of completely revealing the precise nature and needs of information users. These investigations have, at best, provided only a *priori* approach to the problem and much is needed to be done in this direction.

There have been some criticisms on the methods and techniques used in the user studies/ surveys. For example, it has been said that the question of sampling in user studies has left much to be desired. In other words, in selecting the sample, refined techniques of random sampling have not been taken into account. The usual error of getting into the sample a large number of workers who take an interest or are sufficient in being methodical or co-operative to return the questionnaires and diaries, is always there. This error should be avoided. Moreover, it is not the size of the sample that is important but also the composition of it taking into consideration the environments of the participants. There are other variables also that affect the behaviour of users in so far as information use is conceived. Hence, it has been stated the user psychology must also be taken into account. Aspects of user psychology include the search time that can be tolerated, the amount of irrelevant material that can be tolerated, time available for retrospective searching, the preferred form of the search product and users input channel capacity, work habits, etc. all need to be incorporated. The importance, including individual variables in studies of information gathering and information seeking behaviours, has also been stressed by some experts.

With appropriate inclusion of some of the above aspects in user studies, the critics believe that the short comings in them can be minimised and the findings can be made valid and widely applicable.

- 9) The problem of communication in science and the user interface have received some attention in India. For instance, INSDOC conducted a use survey relating to its current awareness service entitled INSDOC List of Current Scientific Literature, as early as 1964. As a result of the findings of the survey, INSDOC had to wind up the mentioned service and had to start compilation of Indian Science Abstracts (ISA). Another significant effort in this direction is the study conducted by Carl M. White relating to the use of Delhi University Library in 1965. In the same year (1965) IASLIC conducted a seminar on "Users and Library and Information Science". Though the seminar did not discuss or report any worthwhile study/survey, but it helped in drawing the attention of the authorities of Special Libraries and Information Centres towards these problems.

In the year 1967, INSDOC conducted a pilot survey to assess the information potential and information needs of research workers engaged in the field of 'electronics'. This survey was undertaken in connection with the formation of 'Electronics Information Grid'. 'Interview technique and questionnaire method were employed in the study. The findings though essentially empirical in nature, have been published in the form of a report. Yet another worthwhile effort in this direction was the survey conducted by Prof. Krishan Kumar at the Delhi University to determine the reading patterns, information needs and information gathering habits of the teachers and research scholars attached with the chemistry department of the university. This survey was conducted by means of a questionnaire and also through interviews. The findings of this survey are compatible with the findings of similar studies undertaken in other countries.

In recent years, extensive and in depth customer related studies began to appear, one such effort was made by M.S. Sridhar. His doctoral research work was on Information Seeking Behaviour (ISB) of the Indian Space Technologists (IST) of ISRO Satellite Centre (ISAC), Bangalore. The findings of this study have been published under the title 'Information Behaviour of Scientists and Engineers'. This study is a valuable contribution towards user studies. Other relevant user studies in the field of social sciences covering the researchers of central universities of Delhi are the works of HR Sethi as well as of Neena Kanungo.

12.7 KEY WORDS

User : A person who utilises the information resources of a library, the services and products of an information system and derives benefit from them. Users are also known as patrons or clientele.

User Categories : Users, on account of their educational background, intellectual level and need for information, may be grouped into definite categories such as scientists, engineers, doctors, technologists, business managers, administrators, faculty members and students, etc. This classification is known as categorisation of user community.

User Characteristics : The factors in users of information that effect:

- i) their perception of the problem faced and their definition of needed information, and
- ii) the specific ways they are most likely to use information and their capacity to use a given type of information are known as characteristics of users. The can be grouped broadly into :
 - i) individual characteristics;
 - ii) environmental or social characteristics;
 - iii) communication characteristics.

: Systematic efforts undertaken to obtain information on the manner in which information is obtained and used by different categories of users are known as user studies. It is imperative to know the information needs and behaviour of users and the different ways of attaining such knowledge to design and develop tailor made information systems, services and products.

User Warrant

: The demand for specific type of information requirements expressed by different categories of users is generally interpreted as user warrant.

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Appendix

Questionnaire used in the users survey concerning teachers and research scholars in the Department of Chemistry, University of Delhi.

QUESTIONNAIRE
UNIVERSITY OF DELHI
DEPARTMENT OF LIBRARY SCIENCE

Users Survey

You are kindly requested to assist in the search for information with regard to the information needs, types of information and the use of science and technology literature by research workers so as to enable librarians to provide you more effective library services. Please think over the questions in Part I and we will discuss them together at sometime convenient to you. Please answer the questions in Part II and make any additional suggestions on the back of these pages or on a separate sheet of paper.

Your cooperation is appreciated and the information provided will be kept confidential.

Part I for discussion

- A) What are your needs for information in terms of amount, kinds, levels, variations at different times such as at the beginning, during and at the end of a research project?
- B) How do you get the information you need?
- C) Which types of publications do you use? e.g. books (i.e. monographs), handbooks, literature guides, journals, abstracts, indexes, reviews, research reports, advances in -, Progress in..., etc.
For what purpose do you use each of the type of publication used by you?
- D) Are you able to keep up with the literature in your field? Do you have any problems in keeping up with your field?
- E) Have you ever used a library outside Delhi including the ones located in foreign countries? Give your impression and compare them with the libraries used by you at present.

Name Department

Area of research Status

Date

Part II for factual answers

- 1) How much time on an average do you spend on reading in your field in a week?

.....
.....

2) How much time on an average do you spend in the laboratory in a week?

.....
.....

3) Which foreign languages can you read to be able to follow literature in that language?

.....
.....

4) Of which professional societies are you a member?

.....
.....

5) What other subjects besides Chemistry, do you need to consult and how often (frequently or rarely or never)?

.....
.....

Subject

How often

5.1

5.2

5.3

6) Have you ever felt the need to improve your skills in the use of science-technology literature?

.....
.....

7) 7.1 Do you think training in the use of Chemical literature would be helpful to you?

.....
.....

If yes, when should this training be given:

7.2 Undergraduate level7.3 Pre-Ph.D. Level

7.4 Postgraduate level.....7.5 Any other level

8) 8.1 Which library do you consult most?

8.2 Which library do you borrow from most?.....

9) How many hours per week on an average do you spend on reading in your field in library and elsewhere, and how often do you do it? (Daily, 3 times a week, once a week, fortnightly, monthly, rarely, once only).

How often _____ Times spent per week (hours)

9.1 in the University Library (main)

9.2 in the Department of Chemistry

9.3 in other library(ies)

9.4 at home

9.5 enroute between home and department

10) Do you find the collection in the field of your interest in the libraries you use most, strong enough to meet your demands? Indicate below names:

Names of the libraries

10.1 Completely adequate

10.2 Partially adequate

10.3 Not at all adequate

10.4 Completely inadequate

11) 11.1 Do you ask for material not available in the University Library/ Department Library?

11.2 How many times in the past 12 months did the library succeed in satisfying your demand?

11.3 How much time did it take to get the material?

11.4 What other libraries have given you such service?

12) How far in terms of distance would you go to consult a library for your needs not fulfilled by the libraries you now use?

13) Do you ask for assistance for the reference libraries or other members of the library staff in these libraries:

13.1 to locate books or other items

13.2 to locate current periodicals

13.3 to understand the use of various tools

13.4 other assistance

14) 14.1 What service not now provided in the University/Department Library would you like to be made available? (e.g. preparation of a bibliography, getting a photocopy of article, doing literature search, etc.)
.....

14.2 Are you willing to pay for such special services?

15) Can you use a library card catalogue effectively?

16) Can you locate material in a library?

17) Which library do you think is easiest to use:

Name of library

17.1 Its reference collection

17.2 In searching periodical literature

17.3 For borrowing books

17.4 In locating material on shelves

17.5 For consulting its card catalogue

17.6 Other activities

17.7 General comments on what makes a library easy to use

18) Suppose there were to be two or three lectures on 'How to use a library effectively', would you attend these?

19) About how many scientific journals do you:

Indian

Foreign

19.1 subscribe to

19.2 read regularly

19.3 scan regularly

UNIT 13 INFORMATION USE STUDIES

Structure

- 13.0 Objectives
- 13.1 Introduction
- 13.2 Information Use Study
 - 13.2.1 Meaning and Scope
 - 13.2.2 Need for Information Use Study
- 13.3 Types of Information Use Study
 - 13.3.1 User-based Information Use Study
 - 13.3.2 Profession-based Information Use Study
 - 13.3.3 Subject-based Information Use Study
 - 13.3.4 Non-electronic Source-based Information Use Study
 - 13.3.5 Electronic Source-based Information Use Study
 - 13.3.6 Oral Information Use Study
- 13.4 Conducting Information Use Study
 - 13.4.1 Non-electronic Information Sources
 - 13.4.2 Electronic Resources
 - 13.4.3 Methods
 - 13.4.4 Study with a Questionnaire
 - 13.4.5 Presentation of Results
- 13.5 Summary
- 13.6 Answers to Self Check Exercises
- 13.7 Keywords
- 13.8 References and Further Reading

13.0 OBJECTIVES

After reading the Unit, you will be able to:

- explain the meaning, scope and need of information use study;
- describe the components of information use study; and
- conduct information use study yourself.

13.1 INTRODUCTION

Humans have been using information since time immemorial. When they were food gatherers and hunters, they were always in need of information as to the availability of fruits, tubers, edible leaves and stems, fish, animals, etc. Anyone spotting an animal in the forest or a tree with edible fruits, s/he used to inform the community. Utilising the information, people of the community picked up the fruits or killed the animal and the entire community used to eat. By eating fruits, leaves or tubers, if a person fell ill, the information spread through the community so that others should not eat those things. In this way they identified inedible fruits, leaves and tubers. On the other hand, when a person found that by eating something an ailment is cured, s/he utilised this experience to heal the ailment of others. Subsequently this gave birth to the medical profession. The

practice of using information which started long ago for necessity of survival continued as human civilisation progressed without any break. Even today we are using information for diverse needs and purposes.

In prehistoric times, the use of information did not cost any money, as the concept of money was non-existent. Nowadays, information is not only oral but also available in a number of media. One has to pay for information in print or electronic media. You purchase books, newspapers, etc. in printed form, some dictionaries and encyclopaedias in CD-ROM and search information in the Internet by paying money. In many cases even for oral information one has to pay money e.g. your tutor teaches you that means, s/he gives you information orally, and you pay for it. If you intend to search information in a database again you are to pay for it.

Commercial firms spend a huge amount of money everyday in advertising their products and services in television, radio, newspapers, etc. It is of vital importance for them to know how the information about their products and services is being used by the customers. For example, information about a product given in a newspaper in the form of advertisements cannot be used by illiterates. For such customers information can be better disseminated through radio or TV. Such thought out use of information is likely to increase the sale of products and utilisation of services.

A library is a storehouse of information. Every year libraries spent a huge amount in procuring books, periodicals and various other types of documents, in subscribing to various databases, e-resources, consortia, etc. The question that arises is what is being procured and subscribed and are these sources being used optimally? Are there some documents or databases which are not being used at all or being used inadequately? Such questions have necessitated the LIS professionals to conduct information use studies. In the following sections of this Unit, we are going to discuss in detail the information use study.

13.2 INFORMATION USE STUDY

We have already briefly discussed the use of information from ancient time to the present and also the factors that gave birth to the idea of information use study. A few decades ago information use studies were few. Nowadays, every year a number of information use studies are being conducted. The references given at the end of this Unit will give you an idea.

13.2.1 Meaning and Scope

‘Information use study’ simply means the study of the use of information. This *use* may pertain to oral information or recorded information. Everyday we use a lot of oral information. For example, a girl is asking her mother how to cook a particular food item. Mother is giving the instruction and the girl is preparing the food. Before starting for the railway station, we ring up the enquiry counter as to know the time when a particular train is arriving or departing. The moment we hear that the train is in time or late we plan accordingly. In this Unit, we are going to discuss mostly on the use studies related to recorded information as there are hardly any use studies related to oral information. This Unit does not deal with the information use studies conducted by commercial firms.

13.2.2 Need for Information Use Study

Procurement policy – Procurement of recorded information involves cost, often in terms of millions of rupees. If it is seen that the procured information is not being used adequately, then it may be assumed that part of the money is going waste. A study by Roy and Paul indicates that ‘almost 50% of books [of a research library] are never used’. The statistics clearly show that there has been some flaw in the procurement of books. Libraries usually receive books through purchase, exchange and gifts. In whatever way they may come to the library, their non-use means some wastage of money. It may appear that books received through gifts involve no cost as no money is to be paid to the donor for these books. However, money is spent for their transportation, processing, maintenance, etc. Moreover, these unused books occupy valuable space in the library.

There are various factors for non-use of books. Obsolescence is one of the most important factors. A book might have been of use when purchased. However, with the passage of time, the contents of the book have become outdated leading to its non-use. A book with poor contents may not find many readers. Similarly, a book on a subject alien to the research area of an institution may also lie idle.

A use study provides many valuable indicators. The study by Roy and Paul also shows that maximum amount is spent for the purchase of books on physical chemistry and material science in the library. In reality, their use is less. On the other hand, very small amount is spent for books on inorganic chemistry and their demand is very high. Use study reveals many such interesting things which may be highly useful for formulating a correct procurement policy.

Weeding or switching over to electronic media – An active library grows continuously in size as new books are added to the library every year. This generates requirement of further space. There are two ways, either the library is expanded with the addition of new rooms or new buildings or some space is generated by weeding out unused books. It is mainly through use study we identify the unused books which may be removed from the shelves to generate space. In a research library periodicals are in great demand. Year after year they consume huge amount of space. If on-line version of these periodicals is procured including back volumes, immediately the space problem is solved to a great extent.

Constraints in information use – Use of information is greatly hindered because of various constraints. It is a common that libraries in torrid summer or extreme cold are used very less where there is no air conditioning or frequent power failures. Vashishth has pointed out quite a few constraints in the use of e-resources revealed through use studies. In summing up it may be said that use studies point out to defects in procurement policy, identifies books and back volumes of periodicals that are no more in use, highlights constraints that are leading to less use of books, periodicals and other documents.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

1) Highlight the need for information use study.

.....

13.3 TYPES OF INFORMATION USE STUDY

In the information use study, the sources which people consult to gather information are usually studied. Information use studies may be categorised as follows:

- User-based information use study
- Profession-based information use study
- Subject-based information use study
- Non-electronic source-based information use study
- Electronic source-based information use study
- Oral information use study

We shall discuss all these in the subsequent sub-sections.

13.3.1 User-based Information Use Study

In this type, studies are conducted to find out how common people, children, students, academicians, scholars, faculty members and many others use various types of information. Choukhande and Kumar studied the information use pattern of faculty members and research scholars of Amravati University. In another study Gopalakrishnan and Ramesh Babu have studied the information use pattern by the academicians of the NIFT centres in India.

13.3.2 Profession-based Information Use Study

Doctors, engineers, scientists, teachers, subject specialists, etc. are all professionals. Information use may vary from profession to profession. A scientist may prefer to use mostly primary information. On the other hand, a librarian may use primary, secondary and tertiary information. Pujar and Sangam have studied information use by economists. The study reveals that the economists used both non-electronic and electronic sources. Among non-electronic sources figure books, handbooks, reference books, research reports, conference papers, theses, journals, magazines, newspapers, government publications, reprints, preprints, discussion-generated/occasional/working papers, abstracting and indexing periodicals and citation indexes. Among the electronic sources they have consulted CD-ROM databases, e-journals and computer programs.

13.3.3 Subject-based Information Use Study

It is possible to study information use according to various subjects. In such studies both electronic and non-electronic sources may be covered. Some examples of subject-based information use studies being presented here. Biradar studied the use of information sources in an agricultural college library at Shimoga, India. Nirmal Singh studied the use of information sources in education college libraries in Punjab. In another paper, Pushpalatha and Mallaiah studied the use of information resources in chemistry in Mangalore University library.

13.3.4 Non-electronic Source-based Information Use Study

Non-electronic sources comprise of hand-written documents like manuscripts and letters, typed or mimeographed documents like theses and circulars and all

printed documents like books and journals. In this case, use study is possible with a single document, a specific type of document, a particular category of information sources or information sources in general.

Single document – In this case we have the example of *Science Citation Index* whose use has been studied by Brahmai.

Specific type of document – Textbooks, monographs, encyclopaedias, directories, etc. are specific types of documents. The use of this type of documents is also studied. For example, the use of encyclopaedias in schools and public libraries has been studied by Campello, et al. Ernest studied the use of telephone directory in an academic library. Roy and Paul studied the use of books in a research library. The use of bibliography has been studied by Viabolicova.

Category of documents – Documents are categorised as primary, secondary and tertiary sources. Use studies are possible with documents of all the categories. Examples of a few categories are given here. Reference books pertain to secondary sources. Aditya Kumari and Talawar studied the use of reference sources in university libraries of Karnataka. Government publications pertain to mixed category as all categories of publications are produced by various governments. Fola Adio studied the use of government publications in academic libraries in Nigeria. Schemeckebier also dwelt on the use of government publications in general.

Information sources in general – This means all types of information sources are taken together. Some examples of such studies are being presented here. Biradar, et al surveyed the use of information sources in a public library. Parvathamma and Shankar Reddy also studied the use of information sources in public libraries situated in Bidar District of Karnataka State. Tadasad and Talikoti investigated the utilisation of resources of City Central Library, Gulbarga. Verma, et al use of collection of an institute in Gwalior, India. Gurdev Singh studied the use of information sources in college libraries of Delhi.

13.3.5 Electronic Source-based Information Use Study

Nowadays, such studies are conducted more often. These studies include e-resources in general, sources in CDs, online databases, web, consortia, etc. It is also possible to study the use of these sources according to user, profession, subject, category of documents, etc. Some studies of this category are discussed below.

e-resources – These include online bibliographic databases, web, consortia, e-journals, e-books, e-zines, etc. These resources may be CD-based, web-based, online databases, etc.

Some of the studies conducted with e-resources are as follows. Anil Kumar and Ashok analysed the use of online resources of a digital library. Bansode and Pujar studied the use of web-based resources by the research scholars at Shivaji University. Bavakutty and Mohamed Hanifa explored specific factors that promoted or hindered the use of online information resources in special libraries in Kerala. Joteen Singh surveyed the use of Internet-based e-resources at Manipur University. Mohammed Hanifa investigated the use of e-resources by research scholars in special libraries in Kerala. Zhang also examined the scholarly use of

web-based electronic resources. Ibrahim, Natarajan, et al, as well as Patil and Parameshwar studied the use of e- resources in the United Arab Emirates University, Annamalai University and Gulbarga University respectively and Vashishth pointed out the constraints of the use of electronic resources.

e-resources through consortia – Parameshwar and Kumbargouder, Veenapani, et al, and Walmiki et al studied respectively the use of e-resources through UGC-Infonet Consortium by the research scholars of Department of Chemistry, Gulbarga University, researchers of Manipur University and Karnataka state universities.

e-resources by subject – Many subject specialists search Internet to use web resources. Biradar and Sampathkumar studied the use of web resources by physicists of the universities in Karnataka. In another study, Sujatha and Mudhol investigated the use of electronic information sources at the College of Fisheries, Mangalore, India. Kaur studied the use of e-resources by the teachers and researchers of the science and engineering and technology faculties in Guru Nanak Dev University

e-journals – These journals are in electronic form and also available online. Researchers prefer to use these journals as these are available much faster as compared to their printed version. As such there are a number of studies on the use of electronic journals also known as e-journals. Khaiser Nikam and Promodini studied the use of e-journals by the academic community at the University of Mysore. In another paper Singh investigated the use of online journals at the Jamia Milia Islamia library. Gunasekaran, et al studied the usage of electronic journals through consortia by the students and members of the faculty of Bannari Amman Institute of Technology. The same type of study has been conducted by Kumbar and Hadagali with faculty and research scholars of Karnatak University, Dharwar, as their sample. Mohamed and Sreelatha as well as Raja and Upadhyay examined the use of e-journals by doctoral students of Calicut University and researchers of Aligarh Muslim University respectively.

e-journals by subject – Bhat and Sampath Kumar studied the use of scholarly journals on library and information science available on the Web.

CD-based sources – Many databases are now available in CDs, especially in CD-ROMs. Ali surveyed the use of optical disc databases in Iran. Gupta studied the use of CD-ROM databases at the Indian Agricultural Research Institute library.

Internet-based studies – Many researchers have conducted studies on the use of the Internet by the teachers, research scholars, students of colleges and schools covering various disciplines. One such study is conducted by Kanungo on the use of the Internet in the scholarly communication of social scientists of IGNOU. The study ascertained the use of the Internet in the scholarly communication of the social scientists in IGNOU and analysed its impact on their research and working in the Open Distance Learning (ODL) environment. Findings of this study highlighted purposes as well as frequency of use of the Internet by the social scientists, their methods of locating, accessing and using information on the Internet.

13.3.6 Oral Information Use Study

Everyday human beings disseminate maximum amount of information orally. Some examples of dissemination of oral information are listed below:

Long ago when tea production started in British India, the hawkers used to visit weekly markets in rural areas, demonstrate the preparation of tea and offer each of the onlookers one cup of tea to taste, tell about its utility and the name of the shop/s in the market where it is available. Now you can easily judge to what extent the information given was used.

A village level worker disseminates information about a high-yielding variety of rice to the farmers of a village, tells them about the productivity of the variety, method of cultivation, requirement of fertiliser and irrigation, availability of seeds, etc. Now a study may be conducted after a year or so to find out how many farmers have cultivated the new variety. If the result is encouraging, then it will be assumed that the information has been used.

In a weekly market, the employees of a bank announced with drum beating the opening of its branch wherefrom people will be able to take loan for the purchase of cows, bullocks, construction of house, education of the children, etc. In no time, the people started crowding the bank for opening account as well as demanding loans for various purposes. This clearly indicates that the information given was used.

Whenever a villager spots a carnivorous animal in the vicinity, s/he informs and within minutes the information spreads throughout the village and people take safe shelter. This also indicates full utilisation of the information given. The use of oral information is demonstrated many a times by its direct effect.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

2) Enumerate the types of information use studies. Give an example of oral information use.

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13.4 CONDUCTING INFORMATION USE STUDY

In libraries, information use studies are conducted examining the use of various documents and electronic resources.

13.4.1 Non-electronic Information Sources

Non-electronic sources comprise textbooks, monographs, treatises, handbooks, manuals, dictionaries, encyclopaedias, yearbooks, gazetteers, directories, seminar volumes, bibliographies, question papers, prospectuses, general periodicals, indexing periodicals, abstracting periodicals, magazines, newspapers, patents, reports, theses, manuscripts, maps, atlases, globes, plates, A/V material, microforms, A/V cassettes, film reels, etc. Use study is possible with any one of the items, e.g. periodicals or a group of items, such as reference sources, government publications or with all the items. Use study by itself can be a full-fledged study or it can form part of a bigger study, such as a library use study.

Precautions – While conducting use study you should very clearly pinpoint the items. In some studies, you find items like books, yearbooks, handbooks, etc. Yearbooks and handbooks are also books. In such cases where there is ambiguity, you are to clearly mention what you mean by the term ‘books’.

13.4.2 Electronic Resources

These sources comprise of compact discs (CDs), digital video discs (DVDs), CD-based databases, web-based databases, online catalogues, databases available with consortia, etc.

13.4.3 Methods

There are various methods to find out the usage of documents. Some of the methods are quite simple and amenable to manual operation. There are other methods that require questionnaire, interview, computer help for data analysis, etc. We shall provide a glimpse of some of these methods.

Dot-on-the-Spine Method – This is a simple manual method. Whenever a book is issued a dot is put on the spine. This method is highly useful for **weeding out** books. Say, the method is in operation for ten years. While browsing through the shelves it will be extremely easy to identify the books that have not been used even once. These books may be taken out of shelves and placed before the authorised committee to decide which books are to be weeded out.

Many libraries stack unused books at an alternate location. For that purpose also this method is useful. This method is useful for small and medium size libraries. The libraries that have huge collection in terms of lakhs of volumes, this method will be cumbersome and highly time consuming.

This method cannot reveal the use of those books that are not issued out, say, reference books. Moreover, numerous books are used within the library itself. The use of those items also remains unknown. Of course, the question of weeding out such books generally does not arise unless they are damaged beyond repair.

Checking of Library Records – Many libraries keep records of books that are issued out. By checking those records also the use of books can be determined. This method also cannot determine the use of books that are not issued out and used within the library.

Citation Analysis – Users of higher academic institutions, research institutions, etc., write articles, research papers, theses, project reports, monographs and

textbooks, etc. In all these they cite books, periodicals and various other documents which they have used for writing papers, etc. For doing the use study theses, research papers, monographs, textbooks, etc. written by students and faculty members during the last five years, are exhaustively searched. Entries can be prepared manually or using a computer for all the citations appearing in all those publications. After the entries have been prepared they will be arranged periodical-wise, book-wise, etc. In the periodical-wise arrangement it will be seen that there are many entries pertaining to a few periodicals. For preparing a rank list of periodicals, you are to count the entries. While using computers care should be taken to ensure that the entries can be arranged from different perspectives and automatic counting can be done. Suppose, in the entries around one hundred periodicals have figured. When you arrange the entries according to periodical titles, you will notice that many periodicals have accounted for more than one entry. Some periodical titles might have occurred twenty times, some others less than or more than twenty times. To prepare a rank list of periodicals you are to count the occurrence of each of the periodical titles. When you arrange the titles according to the descending frequency of occurrence, you will get a ranked list of periodicals. This ranked list will indicate which titles have been used heavily, moderately and sparingly. Now you may compare this list with the list of periodicals being procured by the library. The comparison will immediately indicate the titles of periodicals which have not been used even once. The study will reflect the use of other documents as well.

This type of study will be useful for university libraries, research libraries, higher academic institution libraries, etc. They will not be useful for school libraries, public libraries, most college libraries and many special libraries.

If you search the literature, you will find that a number of citation studies have been done in the past to determine the use of type of library resources by the users and research scholars in particular. It is difficult to mention all the studies here but to give you an idea of such studies a few have been cited here. For example, Kanungo has carried out a few citation studies to find out the use of resources by political scientists and historians. She has also analysed the citations of Journal of Asian Studies to determine the use pattern of social scientists.

Observation Method – This method is particularly useful for the books and other documents that are used within the library. Issue records, dot-on-the-spine method do not reflect the use of documents within the library. In observation method the observer silently observes and notes down the books, periodicals and other documents being used by the readers within the library. Another way of doing the work is to ask the readers not to shelve the documents which they use during the day. Thus, all the documents that have been used will be on the reading table. By checking the documents it will be known what documents the readers have used during the day.

Interview Method – In this method, users of the library are specifically asked by the investigator about the documents they have used. This job is best done sitting with the user along with a structured list of interview questions. Item by item, the user will be asked, and her/his replies will be recorded at that precise moment.

Questionnaire Method – This is the most widely used method and can be used even if the user is scattered at different places. Depending on the need the questionnaire is framed taking care that no item is missed.

Details – In use study this particular factor plays the most important role. Suppose you are studying the use of the periodicals by the users of a library. If in the list of questions only 'Periodicals' is written as one of the items, then it will not be known which periodicals are being used heavily, moderately or sparingly. For this reason you are to list all the periodicals by name in the questions list.

Sample - In this method the selection of the sample is a big factor as the result of a survey is largely dependent on the sample. A use study in most cases is a library-based study. The library may be an independent unit or it may be attached to an organisation. Hence, selection of the sample is not very difficult. The respondents are available within the library and organisation itself. What you need is a structured list of questions. The list will have to be framed keeping in view the type of survey you want to conduct.

13.4.4 Study with a Questionnaire

Suppose, you want to conduct a use study of library and information science periodicals being received by your library. The periodicals being received by your library are as follows:

- 1) American Libraries, Chicago
- 2) Annals of Library and Information Studies, NISCAIR, New Delhi
- 3) Calcutta University Journal of Information Studies, Kolkata
- 4) DESIDOC Journal of Library and Information Technology, Delhi
- 5) DLIBCOM, Ahmedabad
- 6) Granthagar, Kolkata
- 7) IASLIC Bulletin, Kolkata
- 8) ILA Bulletin, Delhi
- 9) Indian Journal of Library and Information Science, Delhi
- 10) Information Processing and Management, USA
- 11) Information Studies, Bangalore
- 12) Journal of Documentation, UK
- 13) Journal of Information Management and Scientometrics, Aligarh
- 14) Journal of Library and Information Science, Delhi
- 15) Journal of the American Society of Information Science and Technology, New York
- 16) Kelpro Bulletin, Thiruvananthapuram
- 17) Library Herald, Delhi
- 18) Libri, Germany
- 19) Malaysian Journal of Library and Information Science, Kuala Lumpur
- 20) RBU Journal of Library and Information Science, Kolkata
- 21) Scientometrics, Budapest
- 22) SRELS Journal of Information Management, Bangalore

The number of journals is not very high, therefore, you may list the names of all the periodicals in the questionnaire and ask the respondents to assign marks to each of the periodicals they use following the given scale: Used daily – 5, used a few times in a week – 4, Used once or twice in a week – 3, Used less than once in a week – 2, Used rarely – 1, and Not used – 0.

The users of the periodicals are the students, research scholars and faculty members of LIS courses as well as others. You may also include the purpose of use. Using the three parameters such as periodicals, users and purpose of use, you can conduct the study.

Your questionnaire will be short and simple and filling of the questionnaire will not take time. The questionnaire may take the following shape:

Sample Questionnaire

[Please tick ✓ at appropriate places]

- 1) Name (Optional) Date
- 2) Sex: Male Female
- 3) Age Group: 20-30 31-40 41-50..... 51-60..... 61 above
- 4) User: Faculty Member (Specify Faculty)
 Researcher (Specify Faculty)
 Student (Specify Course): BLIS/MLIS/Others
 Others
- 5) Please assign marks against each of the periodical titles using the following scale:

	Scale
Used daily	5
Used several times in a week	4
Used once or twice in a week	3
Used less than once in a week	2
Used rarely	1
Not used	0

- 6) Periodicals
 - 1) American Libraries, Chicago
 - 2) Annals of Library and Information Studies, New Delhi.
 - 3) Calcutta University Journal of Information Studies, Kolkata
 - 4) DESIDOC Journal of Library and Information Technology, Delhi
 - 5) DLIBCOM, Ahmedabad.
 - 6) Granthagar, Kolkata
 - 7) IASLIC Bulletin, Kolkata.
 - 8) ILA Bulletin, Delhi.
 - 9) Indian Journal of Library and Information Science, Delhi.

- 10) Information Processing and Management, USA.
 - 11) Information Studies, Bangalore.
 - 12) Journal of Documentation, UK.
 - 13) Journal of Information Management and Scientometrics, Aligarh.
 - 14) Journal of Library and Information Science, Delhi.
 - 15) Journal of the American Society of Information Science and Technology, New York.
 - 16) Kelpro Bulletin, Thiruvananthapuram.
 - 17) Library Herald, Delhi.
 - 18) Libri, Germany.
 - 19) Malaysian Journal of Library and Information Science, Kuala Lumpur.
 - 20) RBU Journal of Library and Information Science, Kolkata.
 - 21) Scientometrics, Budapest.
 - 22) SRELS Journal of Information Management, Bangalore.
- 7) Purpose of Use
- 1) For collecting data for research work
 - 2) For preparing a lesson
 - 3) For writing an article
 - 4) For compiling a bibliography
 - 5) For verifying certain facts
 - 6) Others, please specify

Thank you for your kind cooperation

This questionnaire, with certain modifications, may be used for many other use studies. For example, if you want to study the use of databases your library is subscribing to, just insert the names of databases in place of periodicals and conduct the study. Similarly you can study the use of reference books, newspapers, magazines, A/V aids, etc.

If the number of items is very high, say 100 or more, then instead of listing the items title by title, keep the space blank and ask the user to list the items in the descending order of their use. Suppose, you have got back about 100 filled-in questionnaires and in each questionnaire you may find mention of ten, twenty or more items. Now make cards of all these items and arrange them alphabetically. You will find in many cases the same item has been used by more than one user. Now arrange the titles according to the frequency of use. That means, the title that has been used by maximum number of users will come first, followed by those that have been used less number of times. Now, note down the names of the items in the descending frequency of their uses. This is the rank list of the use of the items. From this list you may be surprised to know that some of the items the library is having are not being used at all. If there is a need to weed out some of the items, because of budget crunch or some other reasons you may do

so. The method of preparing the rank list described above is a manual one. If you have a computer then enter the data in a tabular form and get them alphabetically arranged with sort command. Count the frequency of occurrence of each item and record the frequency against the item in the next column. If an item has occurred more than once, just retain the first one, and delete the rest. Sort the items again in descending order of frequency. The resulting Table gives you the rank list of items.

13.4.5 Presentation of Results

Use studies are generally bibliometric studies. Hence, results of a use study are to be presented with tables and figures as is done in a bibliometric paper whereby results, trends, etc. become apparent without any difficulty. The data gathered according to the sample questionnaire given above may be analysed and presented in the form of tables, bar diagrams, etc.

With the data analysed at least three tables can be generated as follows:

Table 13.1: Users and their Characteristics

Sl. No.	User Name	Status	Age Group	Gender	Remarks, if any
1	A	Faculty	20-31	F	Joined recently
2	B	Faculty	51-60	M	
3	C	Faculty	41-50	M	
4	D	Faculty	51-60	M	
5	E	Faculty	31-40	F	
6	F	PhD	51-60	M	
7	G	PhD	31-40	F	
8	H	PhD	20-30	M	
9	I	M Phil	20-30	F	
10	J	M Phil	20-30	M	
11	K	MLIS	20-30	M	
12	L	MLIS	20-30	M	
13	M	MLIS	20-30	M	
14	N	MLIS	41-50	F	
15	O	MLIS	31-40	F	
16	P	BLIS	20-30	F	
17	Q	BLIS	20-30	F	
18	R	BLIS	20-30	F	
19	S	BLIS	20-30	M	
20	T	BLIS	20-30	M	
21	U	BLIS	20-30	M	
22	V	BLIS	20-30	M	
23	W	BLIS	20-30	M	
24	X	BLIS	20-30	F	
25	Y	BLIS	20-30	F	

The above Table clearly shows the number of respondents, composition of the faculty in terms of status, age group and gender.

Table 13.2: Ranked List of Periodicals

Rank	Name of the Periodical
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	

With the data given in Table 2, a bar diagram may be drawn.

Table 13.3: Purpose of Use

Sl. No.	Purpose	No. of Users
1	For collecting data for research work	
2	For preparing a lesson	
3	For writing an article	
4	For compiling a bibliography	
5	For verifying certain facts	
6	Others	

It will be clear from the data in Table 3, for which purpose the periodicals are being used heavily, moderately or poorly.

Self Check Exercise

Note: i) Write your answers in the space given below.

ii) Check your answers with the answers given at the end of this Unit.

3) Enumerate non-electronic information sources.

.....

.....

.....

.....

4) You are to conduct a reference book use study in a college library. How are you going to select the sample?

.....

.....

.....

.....

5) Name five library and information science periodicals published from India.

.....

.....

.....

.....

13.5 SUMMARY

Human beings have been using information since time immemorial. With the passage of time the use of information has progressively increased. However, fewer attempts have been made so far to systematically study the use of information. As a substantial amount of money is being spent in the generation, dissemination, processing, storage, etc. of information, it is essential to know to what extent information is being used. This has been discussed briefly in the Introduction section of this Unit.

Meaning and scope of information use study have been explained and it has been pointed out that use study of recorded information has only been covered as use study of oral information is hard to come by. It has been pointed out that use study is needed to decide the proper acquisition policy, weeding out of books, periodicals and other documents and to find out constraints in the use of books and other materials.

Various types of information use studies are encountered such as user-based information use studies, profession-based information use studies, subject-based information use studies, non-electronic source-based information use studies, electronic source-based information use studies, etc. All these types have been described quoting examples of studies conducted.

Use study is possible with a single document, a specific type of document, a particular category of information sources or information sources in general. All these have been discussed with examples. In the electronic source-based information use studies, e-resources, e-journals, CD-based sources and Internet use have been covered. Some examples of the use of oral information have been provided.

Conducting of information use studies related to non-electronic and electronic resources have been discussed. A number of methods have been described. How a questionnaire is to be framed for a questionnaire method study also has been elaborated upon. A sample questionnaire has also been included for better understanding.

13.6 ANSWERS TO SELF CHECK EXERCISES

- 1) Procurement of recorded information involves cost, many a times, in terms of millions of rupees. If it is seen that the procured information is not being used adequately, then it may be assumed that part of the money is going waste. Studies have shown that at times libraries are procuring such documents or subscribing to such databases as are not in great demand. On the other hand, documents or databases that are having more demand are not being procured adequately. Many a times, use studies pinpoint the flaws in the procurement policy. Use studies identify books that are no more in use because of obsolete information, lack of user in the field, etc. The books unnecessarily occupying valuable spaces on the shelves may be weeded out or transferred to alternate locations. Many useful databases sometimes do not find adequate number of users. User studies can find out the underlying constraints for non-optimal use of the costly databases. The constraints can be removed to ensure optimal use of the databases.
- 2) The types of information use studies are as follows:
 - User-based information use study.
 - Profession-based information use study.
 - Subject-based information use study.
 - Non-electronic source-based information use study
 - Electronic source-based information use study
 - Oral information use study.

An example of oral information use is as follows:

In a weekly market, a bank announced with drum beating the opening of its branch wherefrom people will be able to take loan for the purchase of cows, bullocks, construction of house, education of the children, etc. In no time, the people started crowding the bank for opening account as well as

demanding loans for various purposes. This clearly indicates that the information given was utilised.

- 3) Non-electronic sources comprise textbooks, monographs, treatises, handbooks, manuals, dictionaries, encyclopaedias, yearbooks, gazetteers, directories, seminar volumes, bibliographies, question papers, prospectuses, general periodicals, indexing periodicals, abstracting periodicals, magazines, newspapers, patents, reports, theses, manuscripts, maps, atlases, globes, plates, A/V material, microforms, A/V cassettes, film reels, etc.
- 4) The sample will comprise students, teaching staff as well as non-teaching staff. Suppose the college is running BA, BCom, BSc, BCA, and BBA courses. Ten students as well as five teachers will be selected from each of these courses. In addition, five non-teaching staff will also be selected. Thus, the sample will comprise 80 users, which will be a good sample for conducting the use study.
- 5) Five library and information science periodicals produced from India are as follows.
 - 1) Annals of Library and Information Studies, New Delhi
 - 2) DESIDOC Journal of Library and Information Technology, Delhi
 - 3) IASLIC Bulletin, Kolkata
 - 4) Information Studies, Bangalore
 - 5) SRELS Journal of Information Management, Bangalore

13.7 KEYWORDS

Electronic Journal : A journal in electronic form. *Synonym*: E-journal

Electronic Magazine : A magazine in electronic form. *Synonym*: E-magazine

Electronic Resource : Information available on the internet. Information that can be stored in the form of electrical signals.
Synonym : E-resource

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UNIT 14 MARKETING OF INFORMATION SERVICES

Structure

- 14.0 Objectives
- 14.1 Introduction
- 14.2 Need for Marketing of Information Services
- 14.3 Defining Marketing
- 14.4 Linking Marketing with Library and Information Services
- 14.5 Analysing Marketing Opportunities
 - 14.5.1 External Environment
 - 14.5.2 Internal Environment
- 14.6 Selecting Target Market
- 14.7 Developing Marketing Mix
 - 14.7.1 Marketing Mix in Services
 - 14.7.2 Marketing Mix Concept in Library and Information Centres
- 14.8 Developing a User/Customer Focused Approach
- 14.9 Implementing Marketing in Libraries
- 14.10 Summary
- 14.11 Answers of Self Check Exercises
- 14.12 Keywords
- 14.13 References and Further Reading

14.0 OBJECTIVES

After reading this Unit, you will be able to:

- explain the meaning of marketing and its need for a library and information centre;
- discuss how marketing strategies can be applied in a library and information centre;
- describe the concept of marketing mix as applicable to library and information services; and
- elaborate customer focus approach and issues related with implementation of marketing in a library set-up.

14.1 INTRODUCTION

By now you must have accustomed with the concept of information services. Generally, it refers to libraries and information services. Libraries essentially are social institutions and have contributed significantly towards the betterment of society by offering variety of resources and services. They, as information service provider, are under pressure due to various reasons such as: they have to mobilise resources, compete with the Internet and Internet support services, meet the rising user' expectations, improvise the professional image, etc. Therefore, library and

information centers need to evaluate their activities with respect to the external environment, get in touch with the users' needs and integrate them into day-to-day working of the library as well as offer / adapt services as per users' needs to integrate the concept of marketing in libraries. The first requirement for effective and successful implementation of marketing in library and information service is that the librarian should have a clear appreciation for what marketing is all about and how it can enhance the value of library and information services.

People usually relate marketing with increase of sales, profit, market share, etc. As you know that library and information services are non-profit services, therefore, there is a general perception that libraries do not need marketing. But the fact is that marketing is all around us and it is essential for all kind of organisations and individuals. Professionals like lawyers, accountants and doctors also need to use marketing skills so as to create and manage the demand for their services. Therefore, the libraries and information service providers should make efforts to:

- inform users about their role as an information service provider;
- attract users, understand users and their needs;
- motivate users to use the resources and services in different formats; and
- educate users with the help of latest tools and techniques in managing information in libraries and information centres.

If a librarian is performing all the above stated functions, one can say without any doubt that s/he is thoroughly involved in the marketing of information services.

14.2 NEED FOR MARKETING OF INFORMATION SERVICES

Presently, the need for marketing of information services is being felt by all types of libraries. Libraries are facing competition from other information service providers. They need to make daily decisions on the form and formats for acquiring and archiving information. Librarians are striving to provide free access to information. They are struggling with space constraints, shrinking budgets and rising cost of materials. At the same time, users' expectations are going high with the emergence of online access to information. In response to these factors, management philosophies and administrative operations of libraries have changed. Librarians are embracing marketing techniques to be more efficient managers and effective information service providers.

Thus, libraries are facing the greatest challenge that is as the financial provisions for libraries are being continuously curtailed and they are pressurised to be self-sustained. Librarians are hard pressed to mobilise financial resources. This requires an increased emphasis on marketing. Good marketing efforts can take care of all resources and how best these can be channelised in an efficient way.

Library services are valuable services but are undervalued because of lack of visibility among the users. Marketing efforts can help in improve the image of library and information (LIS) professionals by establishing cordial relations with the users and other patrons, good facilities, high standard of service, good discipline and well-behaved staff.

For a long time, LIS professionals had engaged primarily with suppliers and thus lost interest in working for the users/customers. But it must be kept in mind that only satisfied users come back and there are greater chances that dissatisfied users will find some other suppliers of information to meet their information needs.

The reasons for applying marketing techniques in any organisation, particularly in library and information centre, is not to achieve profit in financial terms, but to achieve high level of users' satisfaction and to enhance the perceived value of their services and products. The increased users' satisfaction will result in the increased willingness to use and pay for the services offered. Enhanced perception of the value of the organisation will translate into increased level of support to the organisation. As such, user satisfaction has direct impact with the support they get from the library. However, some efforts could be made to get such funding through dealing with funding bodies directly.

To meet users needs satisfactorily, the first thing the LIS professionals need to understand that: Whom are they trying to serve? What are user's interests? What can the librarians provide to serve these interests? Under what conditions can the librarians offer services and products? How do the librarians communicate with the users? How users communicate their needs to the LIS professionals? Librarian knows well about the library in terms of its resources, facilities, services, products, etc. There is nothing wrong if librarians tell their users about how well they can help them in achieving their desired objectives. However, librarians must capitalise their expertise in meeting users needs through the resources available. Marketing puts such concept into work. Particularly, in the information era, marketing's role in library and information centre is finding information/products for the users/customers and not users/customers for the information/product. It is to remember that no library "owns" its users to the extent that it determines their likes and dislikes. Librarians must pay attention to users' requirements and preferences.

Libraries want the user to come again and use their resources and services. Traditionally, libraries have very positive and favourable relationship with its users. Users are formally attached with the library as members of the library. Librarians have a great potential to transfer this positive, favourable relationship to attract users time and again. But users will come again only if their present needs are well met and in meeting the information needs of users, marketing attitude plays a vital role.

The world in which libraries exist has changed dramatically. It moves faster, relies on technology and competes more intensely. Fearful that change may threaten the existence of libraries, we must look to marketing to help us manage better.

Despite interest in marketing, there has been resistance due to a misunderstanding of marketing concept and its application in library environment; failure to recognise and understand a marketing orientation and its process even when they are present; and a disagreement with the basic tenets of marketing that places the emphasis upon the customer rather than product, the profit or the organisation itself. Many myths prevail in the minds of library professionals, such as marketing equates selling; promotion or advertising; marketing focus on customers;

marketing is about products and information is not a product; marketing requires good marketing persons; marketing is extra work to be done; marketing requires huge budgets; marketing is about making profits; library services are still free, etc. Many a times, these myths act as barriers to the development of the concept of marketing in libraries.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

1) Describe the need for marketing in library and information centres.

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14.3 DEFINING MARKETING

Marketing is a term which has different meanings for different people. Many a times, people see marketing only as selling, advertising or promotion. However, real marketing does not involve the art of selling what you make, as much as knowing what to make! Marketing is concerned with gaining market leadership, understanding customers and their needs, creating customer values and satisfying customers. Some popular definitions of marketing are mentioned below:

“Marketing is the management process responsible for identifying, anticipating and satisfying customer requirements profitably” (The UK’s Chartered Institute of Marketing).

“Marketing consists of individual and organizational activities that facilitate and expedite satisfying exchange relationships in a dynamic environment through the creation, servicing, distribution, promotion and pricing of goods, services and ideas” (The American Marketing Association).

“Marketing is a social and managerial process whereby individuals and groups obtain what they need and want through creating and exchanging products and value with others” (Philip Kotler).

The true essence of above definitions of marketing is that:

- There is demand for information products and services on offer;
- These products and services have ability to satisfy customer needs;
- The exchange of product or service is the primary consideration for payment;
- There is always a need to create an edge over competitors;
- The identification of favourable marketing opportunities;
- The resources are utilised to maximise a business’s market position; and
- The aim to increase market share in priority target markets.

14.4 LINKING MARKETING WITH LIBRARY AND INFORMATION SERVICES

At first sight it may appear that ‘marketing’ and ‘libraries’ belong to different worlds. Thus, much of the debate surrounds just how marketing fits into library and information services. Many a times, marketing is considered an additional burden by LIS professionals. Many feel that marketing is not a natural activity for LIS professionals. If marketing is not seen as a natural consequence of what librarians do everyday, everytime, then marketing is misunderstood and misplaced. Most libraries take decisions about the location of the library, opening hours, planning a new facility or service, offering services according to users/ user groups, making free or priced services, etc. From the above discussion it is clear that marketing decisions are taken in libraries in day-to-day functioning.

The philosophy of libraries revolves around the Five Laws of Library Science. Many authors find these laws closer to modern marketing principles. The following Table 14.1 demonstrates the laws with their thrust areas and simplistic marketing implications.

Table 14.1: Five Laws of Library Science and Marketing Implications

The Law	Thrust Area	Marketing Implications
Books are for use	Optimum use of resources, facilities and services.	Acquiring appropriate information material and ensuring sufficient resources and services are available for the use of users. Convenient location, effective signage and longer opening hours, human resource for using resources and services.
Every reader his/ her book	Meeting users need satisfactorily.	Collecting and interpreting information, understanding the needs of users and matching them with the organisational resources.
Every book its reader	Reaching out to users.	Publicising value and benefits, promotional campaign, advocacy, public relations, personal communication, etc.
Save the time of user	User benefits and preferences.	Repackaging information into appropriate form, availability of information when they need. Ensuring quality of services and products.
Library is a growing organism	Adapting to future user needs.	Mobilising resources, dealing with uncertainty about future user needs, new services, new customer groups, etc.

Libraries have found various marketing functions essential and they have used them. Librarians, like all other business people, are into marketing, consciously or sub consciously. When it is done- the focus of the work, the outlook and service mindedness are derived to manage in entrepreneurial way.

The following are some basic questions which are often asked about the purpose of the library, its users and services. If you look at the answers, you will find that everything is dealt with marketing in some way or the other.

What is the purpose of the library?

Libraries are essentially service institutions but at the same time, there is no disagreement among library and information professionals about the ‘information’ as the *core* to the business of library and information centres. ‘Right information to the right user at the right time’ is the basic motto of the library profession.

What is the place of users in library service?

User is the central focus of library services. Users are the most important part of the trinity, i.e. users, staff and the information resources. The success or failure of any library and information services is gauged from the extent of the user’s satisfaction from person, process or product.

How do libraries serve their users?

Which service a library should provide and which not, has always been an issue of discussion in the professional circle. This is basically because a library needs to work for organisation as well as to provide user services. Therefore, users must be motivated, educated and empowered for the self- services.

How the nature of library service is changing?

The real challenge for the library is not to manage the collections, staff and technology but to turn these resources into services. Even the notion of service has changed from basic to value-added, from staff assisted to self-service, from in-house to out-reach, from free to priced, from reactive to pro-active and from mass-customisation to individualised service. In this context there is always a need for LIS professionals to develop a more responsible attitude towards users and serve them rightly to ensure credibility and a positive attitude to face new challenges and opportunities.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

3) Describe thrust areas of Five Laws of Library Science with marketing implications.

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14.5 ANALYSING MARKETING OPPORTUNITIES

Analysing the environment for marketing opportunities is commonly done keeping in view many aspects. The tool often used to gather information about external forces and internal capabilities is SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which involves capturing the strength and weaknesses of an organisation or service and the opportunities and threats represented by environment trends.

All organisations, public or private, small or large, profit making or non-profit making, manufacturing or service, exist within an environment that affect the work they do and how they do it. Assessing the organisational environment is necessary to offer customised information services to users. This emphasises the importance of gathering information from a wide range of sources so as to make informed decisions. The past decade has witnessed significant changes and advancements in the various aspects of human life. The directions, restrictions and constraints that are imposed by the environment in which a library operates are not different from those in other organisations. Even a library operates in a wider context or environment forming a dynamic relationship with other organisations. This phenomenon determines the conditions, which have a direct impact on library management.

The Figure 14.1 gives an idea that library management interacts with the environment and is also influenced by it. Library management gets input, energy and materials from the environment. LIS managers need to be constantly active to be effective and efficient in the changing environment.

The overall environment, in which a library works, can be divided into two categories namely external and internal.

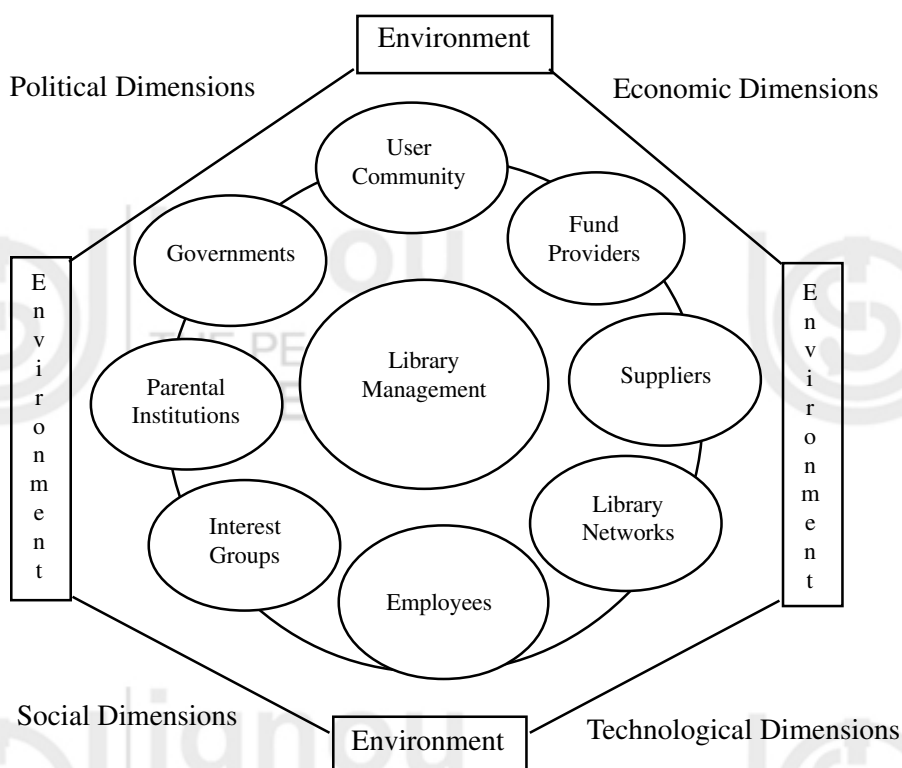


Fig. 14.1: External Environment

14.5.1 External Environment

External pressures on libraries come from the changes taking place outside the library world. It may be seen in context of local, regional and international impact on libraries and information centres. The different dimensions (see Figure 14.1) for example, economic, technological and socio-political dimensions embody conditions and events that have the potential to influence the organisation in many ways.

Technological Dimensions: Technology is the key to business of every organisation. Technologies offer better-featured products, needs less space but more capital and skills. The most noticeable developments are in the fields of information communication and networking technologies. They are used for processing, storage, retrieval and transmission of large volume of information across geographical zones within no time. New technologies offer new and improved services in a variety of ways, such as:

- Creation of new or improved services.
- More involvement of users/customers in operational tasks by offering self-service system.
- Bridging the gap between small and large libraries as IT provides an opportunity to use the resources, services, products from remote locations through resource sharing and networking.
- Accessible data bank, which would be helpful in recognising the users' information needs in a better way. Need recognition helps in strengthening relations with the users.
- Personalised direct mail communication and machine interaction is also possible.

Globalisation has resulted in ease of access to information around the world, round the clock. Many national and international information networks exist for free flow of information. The globalisation of information has created the quality consciousness among users and has also increased the expectations of the user groups to a great extent.

Technology is dramatically influencing service strategies such as:

- Modern communication infrastructures make possible service delivery at global level;
- The increasing reliance on IT in offering services not only globalises but also provides opportunities to know the services offered globally; and
- The changing nature of services due to advancement in technologies, which are radically altering the methods by which library and information centres can globalise their services.

Economic Dimensions: New economic thinking has resulted in numerous changes. Public sector enterprises involved in health, insurance, banking, telecommunications, public transport, universities and libraries are under threat and the governments of most of the countries now prefer as a matter of social as well as economic policies allows privatisation. Present day library and information centres are unable to maintain their acquisition and services at previous level with the finances made available by the state agencies, which has been cut down or have remained static for the last many years. A major portion of the library budget goes for the staff salary and it has become very difficult for libraries and information centres to cope up with the rising cost of literature with limited budget for acquisition. Similarly, there has been a great necessity of funds for acquisition of newer technologies to enhance service capabilities and output of products. There is also a threat from competitors to maintain quality services, as in market economy public and private sectors would co exist for free flow of information. Commercial firms engaged in production of information and its

organisation and retrieval would also charge for such services. Thus, the main challenges before libraries and information centres managers are to:

- utilise resources properly and efficiently;
- mobilise resources to meet financial needs; and
- make services and products qualitative and competitive through accountability.

This has put libraries to market their services and products and charge for value-added services, to enter into joint ventures and alliances and to bring operational efficiency and effectiveness, etc.

Socio-political Dimensions: The process of democratisation at the grass root level in the form of local bodies at village, block and district level, policies of up-liftment of weaker sections of the society, concept of social justice, total literacy campaign, etc. are leading to the change in people's attitude, habits, value and belief. At the same time, disinvestment policies of the governments affect ownership share of the enterprise and their libraries are to take the initiatives in tune with the organisation they serve. Such initiatives are needed with regards to goal-setting, developing vision, building cooperation, responding and reacting to the new situations in the new environment.

Many of the library and information centres have taken serious initiatives and have attempted to serve in such an environment. Many are yet to formulate their response to the changing environment. They need to think through their vision, goals and objectives, organisational culture, organisational and functional strategies, etc.

14.5.2 Internal Environment

Alongside external dimensions of environmental changes, there are also internal dimensions which library and information managers need to take into account. The internal dimensions include physical resources, systems and people. The whole spectrum is shown in the following Figure 14.2.

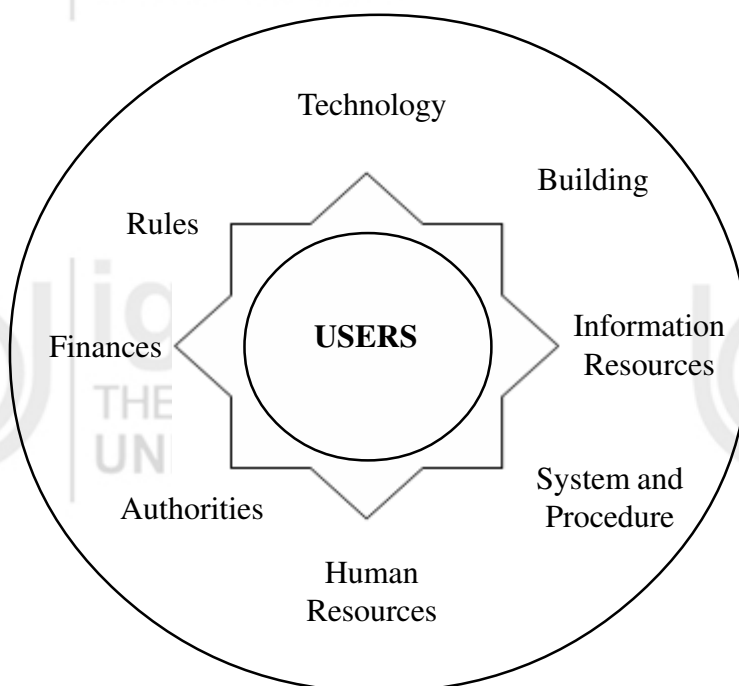


Fig. 14.2: Internal Environment

All the internal resources, for example, human, finance, information systems and procedures, rules, technology, facilities, etc. are there to serve users better. Thus, the important elements of the internal environment may broadly be grouped into three, namely physical resources, systems and people. These are influenced greatly by user's choices, preferences and needs.

Customers: User is considered the king around whom all activities of the library revolve, library and information centres exist to meet the needs of all its users, user is the focal point of all information activities and library and information centres are incomplete without users. It is mainly because of central position of user in all components of the library. User is "the most important entity in all kinds of libraries- public, academic and special. User may be a reader, patron, customer, client or anyone who makes the use of services in a library set-up."

Physical Resources: The most important dimension of the service quality that represents evaluative criteria being used by users are physical facilities, information sources, equipment, communication material, etc. These are required for the comfort of users to sit and study in the library and for producing value-based services /products for them. All aspects of physical facilities must be planned and maintained to ensure convenience, safety, cleanliness and comfort. Information resources must be exhaustive, up-to-date, and balanced in order to provide pin-pointed and timely delivery of information and services with the help of modern equipment. Cozy and inviting atmosphere of the library will attract users to come again and again and value-based services will ensure increased satisfaction among them. The concept of library is changing to the extent of library without walls. Library services offered online must also address the requirements of the users and geared towards meeting them efficiently.

Systems: In a library, systems comprise of the service operations, where inputs are processed and the elements of the service products are created and service is delivered. Activities include classification, cataloguing, indexing, charging and discharging, rules and regulations. Every system and procedure must be designed and operated to meet the needs of users, aiming at making simplicity in use, accuracy, reliability, timeliness, completeness, etc. so that some trust about the services is developed among users.

People: People, include library and information professionals working in various sections of the library working at different levels, i.e. lower, middle and top, skilled, semi-skilled and unskilled, professional, semi-professionals and non-professional. It is the value, belief and approach of employees that will reflect in the organisation they work. The management structure and style must support each employee to give some intangible value to its users – internal and external. People involved in library and information services require good knowledge of both systems and physical resources and must be competent to use their knowledge to create customised offerings to users and an ability to communicate about the value of services to them.

In formulating a marketing strategy, the library management has to adapt to its environment as understanding the environment would help the library in not only altering its existing marketing mix but in identifying new opportunities by selecting an appropriate market to serve.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

4) List out factors that affect external environment of an organisation.

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14.6 SELECTING TARGET MARKET

Selection of an appropriate market is important for the success of marketing efforts. A market includes all the people who have some stated interest in a particular product or service or who could be expected to have one in future. The process of market segmentation is fundamental to the whole idea of marketing as it focuses on the user, i.e. a library’s present or prospective user, rather than the product, i.e. the library’s collection and services. A basic tenet underlying marketing strategy is that there are distinct market segments each with its own needs, wants desires and interests. Market segmentation is the division of market into distinctive groups of buyers who may require different products or marketing mixes. It is the division of market into homogenous groups, which will respond differently to marketing mix variables i.e. the 4Ps of product, price, promotion and place. It is the division of heterogeneous market into homogenous groups. Segmentation is important from the point of view of marketing as different buyers have different needs. Each group or segment can be targeted by using different marketing mix to reach potential buyers with most customised offering as possible. Very often, a librarian builds up library collection by assuming the needs of the users. Library market segmentation takes into account the fact that library users who request a product or service are all individuals who are unique in some way.

Market segmentation is done on the basis of the two market variables: classification variable and the descriptive variable.

I) Classification variable is used to divide the market into following segments:

Geographical segment – This involves division of the market into different geographical units e.g. states, regions, countries, etc. It consists of users who live in a particular geographical locality. These markets determine the type, size and site of the library and information centres as well as opening hours and services offered. The managers of public libraries should look out for geographic location requiring library services and serve the user community accordingly. Rural area which is remote and isolated can be best served by mobile library services. Special libraries serving industries and R&D organisations having branches located in different regions will have to consider specific needs of each location and develop services accordingly.

Demographic segmentation – In this case the market is divided on the basis of demographic variables like age, sex, occupation, income, race, etc. Demographic market segmentation is one of the most popular methods of

distinguishing market segments in libraries. They are often associated with clear market needs and information relating to these markets is readily available. Demographic markets may be identified by age, sex, nationality, income, occupation, religion, social needs (like hobbies, sports, some form of entertainment, etc.) and physical needs (for physically handicapped).

Psychographic segmentation – Dividing the buyers on the basis of socio-economic status, lifestyle, hobbies or personality traits is psychographic segmentation. This type of market segmentation examines attitudes, living styles, personality and social classes, people who have a past history of using libraries have to be reminded of the library services and their use.

Behavioural segmentation – Buyers are divided on the basis of their product knowledge, usage, brand loyalty, attitude, response to marketing factors, etc.

- II) Descriptive variables are used to describe each segment and distinguish one segment from the other. Descriptive variables must be easily available measures and it can be linked to easily obtainable measures that exist in the secondary sources.

The strength of market segmentation lies in the fact that it is based upon the end user rather than on products or services. The end user is assured of a service which satisfies her/ his individual needs rather than a mass market general offering.

Once the library identifies the potential market to serve, it needs to select those for which it will provide a product or service. This process is known as ‘targeting’ which involves strategies for appropriate market segmentation, for example:

- bringing all users at one place who have similar or identical needs and the organisation goes after the whole market with single offering;
- dividing the mass market into smaller groups or segmenting and designing separate services and programmes for each group; and
- concentrating upon a small number of users or specific areas of services and providing in-depth services in a few areas or serving a small percentage of the users.

Once it is decided about the target group and the service (new or existing) to offer to the target group, it is required to put all efforts to make it qualitative. Everything done by the librarians about the library and its services must support and reinforce it.

Self Check Exercise

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

- 5) Define market segmentation.

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14.7 DEVELOPING MARKETING MIX

Marketing mix is one of the most important and fundamental development in the area of marketing. Marketing mix is a set of controllable, tactical marketing tools that the firm (organisation) blends to produce the response it wants in the target market. It consists of everything the firm can do to influence the demand for its product. Marketing mix is commonly referred to the four P's of marketing – product, price, place and promotion. This is a simple, yet effective means of considering the key elements necessary and the emphasis to be placed on each, in order to ensure effective implementation of marketing strategy.

Marketing mix is an important tool for creating and maintaining an offering that is of value to customers. Successful marketing depends on 'the right mix'. In other words, a product that lacks visibility among the potential customer group will fail and a marketing message that evidently does not reflect the product, will suffer the same fate. All elements of marketing mix are interdependent and must be consistent with one another. The most appropriate marketing mix depends upon the customer and is influenced by the marketing environment. An organisation needs to design and combine elements of marketing mix so as to create an offering that differentiates it from its competitors or to create a competitive advantage.

A strategy that is based on an excellent product supplied at an unsatisfactory price is a failure even if the other elements in marketing mix are properly calculated. The ingredients must produce a smooth mix working together to create an effective strategy. Each element in the mix is composed of sub-elements which form a mix such as: a 'product mix' a 'distribution mix' a 'communication mix', etc.

14.7. 1 Marketing Mix in Services

In context of the service, product refers to the service and pricing of services can be different from pricing of goods due to the difference in tangibility, industry tradition, etc. Promotion partly occurs during the service creation and delivery process, partly through traditional promotion channels such as personal selling and advertising. Place represents the distribution and availability of the service. For many services, for example, telecom services and certain financial services, it is a matter of applying information technology in the distribution for others, the physical proximity of a service-producing unit to the local market is an absolute necessity.

With the growing interest in services marketing, around 1980s it was felt that an important element with respect to services was missing the people "P". This then became the fifth "P" of the marketing mix. Recognising the importance of packaging in the marketing of branded packaged products, practitioners and researchers recommended that packaging be treated as separate variable. Packaging was considered to be treated as separate variable and was removed from 'product' and this gave birth to the sixth "P" of marketing mix. Soon this sixth "P" was modified to "physical evidence" in the case of services marketing. The six "Ps" however, appeared inadequate when researchers discovered that consistency in services couldn't be ensured without the support of "process". This brought in the seventh "P". The extension from 4Ps to 7Ps has been displayed in the Figure 14.3.

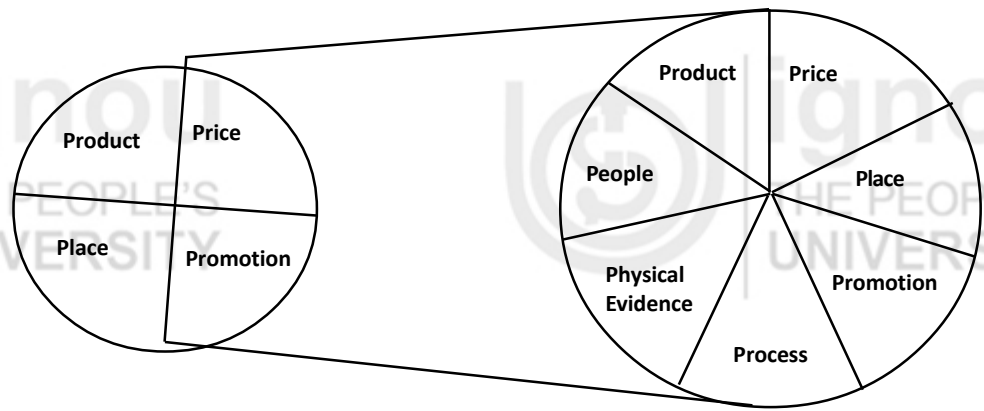


Fig.14.3: Extension from 4Ps to 7Ps

In this way, four Ps have been expanded into seven Ps, adding the following three ‘service Ps’: **people** (the service provider’s employees and customers who participate in the service delivery and thus influence its quality and present future purchases): **physical evidence** (the environment of the service organisation and all the physical products and symbols used in the communication and production process): **process** (procedures, mechanisms, flows of activities and interaction that form the service production and contact with customer).

14.7.2 Marketing Mix Concept in Library and Information Centres

Libraries take decisions about the location of the library, opening hours, planning new facility or service, offering services according to users/ user groups, making free or priced services, etc. These are simple examples, but, are **marketing decisions** and may be well covered in the elements of marketing mix if thought from marketing perspective. Libraries have found various parts of marketing functions so essential that they have used them.

Library and information centres are required to choose appropriate programmes relating to marketing mix so as to avail opportunities for optimum use of resources and to increase user satisfaction. The marketing mix in library and information services may be:

Product: All products or services or offers, present and potential, aimed at meeting the needs of the users.

Price: All costs put in by the user to find relevant information or service or product, may be money, time, efforts.

Place: The way in which information product/ service is made available to users, on campus or remote location, online or virtual.

Promotion: All methods of communicating with users one-way, two way and both.

People: People who are involved in the delivery of service.

Physical Evidence: Surroundings of the library, within and outside, through which users make use of it.

Process: Interaction of various activities by which services are created, performed and delivered.

Marketing mix approach has been criticised for being incomplete and manipulative and for not properly considering the needs of the user/customer. The marketing concept postulates that once you know your customers, through market research or otherwise, you can design, price, promote and distribute a product that matches their needs and become a success in the market place. The seller is considered the active party and the customer has to be persuaded to buy. The empirical base of marketing mix theory is mass manufacturing of standardised consumer goods. It has never become particularly successful for services as it disregards their unique features.

Four or seven 'P syndrome' is also criticised on the ground that it has more focus on the product or the producer and not on the customer. Interestingly, Kotler has attempted an update of 4Ps concepts to reflect this into 4Cs:

Four Ps	Four Cs
Product	Customer value
Price	Cost to the customer
Place	Convenience
Promotion	Communication

At first glance, some of these concepts in the marketing mix, whether they start with a P or a C, are only applicable to a commercial environment. However, they can also be useful tools for a library service to meet the needs of its users/customers. Many libraries are already using these techniques in an intelligent and focused way.

Self Check Exercise

- Note:** i) Write your answer in the space given below.
 ii) Check your answer with the answers given at the end of this Unit.
 6) Describe marketing mix as applicable to services.

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14.8 DEVELOPING A USER/CUSTOMER FOCUSED APPROACH

Every library has its main drive, the principal reason for its existence, from which all aspects of its policy, procedures and activities, which determines its culture and the attitude of its staff at every level. Many libraries either are collection centered or technology centered and some are organisation centered. Those libraries that will succeed in the future seem likely to be are user-driven and with a focus towards user satisfaction. User satisfaction has to be the focus of all thinking and activity for the survival of such a library. Excellent user service is

the key to user-driven service strategies. There is a continual discussion on making libraries user-centered and building a successful user-service culture while managing libraries. The satisfaction that a user or customer gets in a library will help in building loyalty that is the key to promoting a library. No one can afford to lose users. Excellent user service is the basis for effective managing library services.

LIS professionals must always remember that:

- Customers/users are the most important people to be served in a library and information centre.
- They are not dependent on the library rather the library depends on them.
- They are not just outsiders but part of the library.
- They are not just statistics, but also they are human beings.
- They are the people who come with certain needs and libraries and information centres are there to meet such needs.

Present day users want individuality, responsiveness and relationship that will last long.

Individuality: The new generation of user is a global citizen who is more individualistic, change seeking and value conscious.

Responsiveness: It is the willingness to help users and to provide prompt service. This dimension emphasises attentiveness and promptness in dealing with users' request, complaints and queries. Responsiveness is demonstrated in terms of access to employees, least waiting time and attention to problems. It also captures the notion of flexibility and ability to customise the service to users needs.

Relationship: To measure user satisfaction, the relationship between user and the library must be understood. A user relationship comprises a series of encounters through facilities, resources, services and service providers.

Therefore, the question to be answered is how can libraries become user/customer focused? Library and information service managers should begin with the identification of users and their needs. Identifying and understanding of needs require prior knowledge about the characteristics of users. This difference is borne out by the extensive surveys that many libraries carry out on their users, in order to establish their distribution by different characteristics. Unfortunately this kind of data reveals nothing about the individual users. Most of the time individual user remains invisible. Is it a right way to understand the users and their needs or could there be any alternative to such system, which help us in recognising, their needs properly in order to meet them. Libraries and information centres must start by providing quality services, because users *do not know what good service is -until they get it.*

User/customer satisfaction is the current day approach in library and information centre. The success or failure of any library and information centre is gauged from the extent of the user is satisfied from person, process or product. User satisfaction has a close linkage with the expectations of the users and their perceptions. Every user has some image of the service even before it is offered. Non-users are also aware that such service exists. However, they have never

crossed the threshold of a particular library nor have used resources somewhere else. Marketing promises may affect the image and the interaction with the services will redefine the image, every user expects some benefits from the service s/he uses or purchases and expectations are not static but have a direct relation with the image a user holds. To measure user satisfaction, the 'relationship' between user and the library is important. The sustainable relationship with user provides library managers to understand user's needs and expectations in a better way and make it possible to offer customised services and commitment to user's satisfaction.

14.9 IMPLEMENTING MARKETING IN LIBRARIES

Peter F. Drucker rightly said 'Sooner or later all thinking and planning has to degenerate into work' and all marketing thinking and planning accordingly has to be put into work. Effective implementation of marketing largely relies upon the following aspects:

- Developing a marketing culture throughout the library; everyone must realise this and work for the marketing success.
- Promoting service culture.
- Developing growth oriented, services oriented staff, as the staff makes marketing success in any service unit.
- Developing a clear statement of the expenditure to achieve the desired level of marketing success.
- Developing and implementing the marketing plan and actions associated with it.
- Asking for feedback, reviews and insights to help achieve the targets more efficiently.
- Putting marketing efforts consistently over a period of time.
- Monitoring marketing efforts as to know how the outcome of marketing activities has been effective.

14.10 SUMMARY

In this Unit, you have studied that marketing is an important activity in libraries. Marketing helps librarians prove their worth, mobilise resources, building a positive image and to become efficient managers. Marketing is no longer confined to mean promotional effort but is built on interaction with users, whether they are actual users or potential and are in the library or outside. The purpose of the marketing information services is to make such services more responsive to user needs and to increase user satisfaction. The information managers must employ well-integrated marketing approach to make full use of information products and services.

Marketing involves analysing marketing opportunities, selecting target markets, developing marketing mix, bringing out customer focus and implementation of marketing efforts. Marketing offers flexibility, responsiveness, market focus, service orientation and optimises decision making.

14.11 ANSWERS TO SELF CHECK EXERCISES

- 1) Marketing is necessity for libraries these days. Libraries are facing competition from other information service providers, their financial support is being curtailed. Libraries are under pressure to make optimum use of resources and they are also supposed to offer user-oriented services. There is a need to improve the image and develop confidence among users about the service so that they can make use of them.
- 2) American Marketing Association offered definition of marketing, recently, as 'Marketing is an organizational function and a set of processes for creating, communicating and delivering value to customers and for managing customer relationships in ways that benefit the organization and its stakeholders'.
- 3) The thrust area of five laws include: optimum use of resources, facilities and services, meeting users need satisfactorily, reaching out to users, reaching out to user benefits and preferences, and adapting to future user needs.
- 4) An organisation is affected with the changes in the external environment caused by technological, social, economic and political factors.
- 5) Marketing segmentation is the process of dividing market into meaningful smaller groups or parts or segments.
- 6) Marketing mix is popularly known as 4Ps, i.e. product, price, promotion and place which has been extended to 7Ps adding three more Ps, as people, process and physical evidence.

14.12 KEYWORDS

- Customised** : To make or change information products/ services according to users' preferences.
- Demands** : Human wants that are backed by buying power or resources.
- Exchange** : The act of obtaining a desired product or service by offering something in return.
- Markets** : The processes by which individuals and groups obtain what they need and want by creating and exchanging products and value with others.
- Marketing Mix** : It is the combination of product, price, place and promotion.
- Market Segmentation** : It is the act of dividing market into meaningful parts or segments.
- Needs** : Represent a state of felt deprivation; there are two ways of responding to it. One is by satisfying the need, the other is by reducing the need.

- Products** : Anything that can be offered to satisfy a need or want. It can be a service.
- Quality** : Quality is the totality of features or attributes a product or service has to offer.
- Transactions** : The trade of values between two parties. It is the unit of measurement of marketing.
- Value** : Value is the bundle of the benefits from a service or product a user is looking for.
- Wants** : Human needs that are shaped by experience, culture, peer group, etc. Wants are satisfied through appropriate products or services.

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