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Lesson No.

2.1 Reference and Information Services

2.2 CAS & SDI services : Need, Purpose, Techniques and Evaluation

2.3 Bibliographical Services

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2.5 Document Delivery and Translation Services

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Department website : www.pbidde.org

BACHELOR OF LIBRARY AND INFORMATION SCIENCE

PAPER - BLIS-107
INFORMATION SOURCES AND SERVICES

LESSON NO. : 2.1 **WRITER : MEENU SHARMA**

Reference and Information Services

8.1. Introduction

Library is a vast collection of documents and the documents are properly utilized depends upon how well the staff communicates that to the reader. That means, to make judicious use of the library resources, there must be someone who could encourage and guide the readers to make use of the library resources effectively. Moreover, the reference books are also little bit complex to use, so there must be someone who could help in consulting the same.

8.2. Reference Service

Reference service is the personal assistance provided to library users who are looking for particular information. James I.Wyer defines reference service as *"that part of library administration which deals with the assistance given to the readers in their use of the resources of the library". He also said that "it is a sympathetic and informed personal aid in interpreting library collection for study and research".* According to S.R. Ranaganathan *"Reference service is the establishing of contact between a reader and book by personal service".*

Thus, reference service is the personal assistance/guidance help provided by

the librarian (usually the reference staff in the reference department) to the library users in search of information or sources of information. Reference service provides a personal contact between the library staff and the library users. It is a highly personal service and is usually provided free of charge.

8.3. Need and Purpose of Reference Service

In today's world there is so much information published everywhere, and available in different media and in various languages. It has therefore resulted in the growth of variety of documents in the libraries ranging from books to audio-visual materials. As a result, so there is so much growth of material in libraries. Therefore, it has become difficult for a person to keep pace with all the developments in his subject field and allied fields. The classification and cataloging techniques are fine but there is still a need of some human agency that can help in guiding through this amazing maze of information storage facility.

Ranganathan has given three special reasons for the reference service:

1. Artificiality of the Book : That is the appreciation of the value of the book has to be
   induced among the library users.
2. Artificiality of the Catalogue : Catalogue availability in the library is not enough. There should also be someone to explain otherwise the catalogue and shelf guides would be confusing and difficult to consult especially for a person who is new to the library.
3. Psychological Needs : There must be quick and effective service in the libraries to help the reader get the book at the right time.
   In a nutshell, there is a need for some intermediary to establish and maintain contact between the reader and the document.

The aim of providing reference service is to assist the library users in the most efficient, timely and professional manner in the use of reference sources and getting answers to their factual information queries.

The six functions of reference service as analyzed by ALA during 1942 are :

1. Supervision Function : To maintain an efficient reference service through proper organization of facilities, selection of materials, direction of staff and study of clientele. Itemphasizes that the reference materials be properly organized in the reference room. A proper reference material should be selected keeping in view the demands of the readers. However, common and major reference sources like dictionaries, encyclopedias, directories, handbooks, bibliographies, at lasses must be kept in almost all the reference departments. The staff at the reference desk should also be trained well and should be

willing to take initiative to help the library users. Clintele also be studied well and their reference questions should be anticipated and corresponding materials should be well read and known by the reference staff.

2. Information Function : The reference department provides the information to the users. The kind of queries may vary from general to specific. However, the staff can classify the questions asked in the libraries by subject, purpose (for research work, or for just seeking knowledge), inquirer(e.g. students, organizations, professional, etc.) and sources consulted. The reference staff approaches the source and either provides the source or the information to the user.
3. Guidance Function : The reference librarian also guides the readers in selecting the abstracts, doing research on the internet, compiling, bibliographies, etc.
4. Instruction Function : Orientation programs of the libraries where the whole tour of library material and location is provided is generally done by reference librarians. The reference librarians also conducts short sessions in using the card catalogues, now a days instructing users in accessing the OPAC (Online Public Access Catalog)
5. Bibliographic Function : The reference staff prepares the bibliographies. A bibliography is a list of documents in a particular order. Collecting the basic elements of various documents, arranging them in proper order, providing footnotes to amplify the discussion or acknowledge the sources are prepared by the reference department. The bibliographies are helpful in research, promotion of reading and library use.
6. Appraisal Function : The reference staff must get the right material and know how to use that material effectively. Therefore reference staff must be well-aware as to what resources they have, where they have kept alongwith how to use them effectively.

According to Mukherjee, A.K. reference work consists of :

1. Attending to enquiries received from readers, either in person, or over the phone or through correspondence.
2. Helping readers at all levels in the use of library tools, viz. catalogues and other reference tools like bibliographies, and generally guiding them as to the reading material available in the library.
3. Providing general information.
4. Preparing reading list and adhoc bibliographies on request from

readers.

5. Helping in research by maintaining special abstracting and indexing services i.e. documentation work.
6. Providing facilities for copying of reading list, periodical articles, document, etc. by duplicating or documentary reproduction methods, viz. microfilm, micro card, photocopying, xerography, etc.
7. Making arrangements for inter-library loan, and if necessary, interstate or international borrowing.
8. Preserving university ephemera as research and reference material, etc.
9. Providing translation service.
10. Keeping in touch with and co-operation with bibliographical centers and union catalogs.
11. Collecting information regarding library resource of the region, nation and other countries.
12. Providing readers with copies of microfilms or photocopies of documents, in case he wants to own it.
13. Locating information required by research workers, scientists and technologists.
14. Retrieving research information.

Self-Check Exercise

What is reference service ?

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Name the six functions of reference service as given by ALA ?

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Why reference service is needed in libraries ?

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8.4. Origin of Reference Service

With the advent of the public libraries in USA, the assistance in the use of

library was started, to provide to the common masses. However, Samuel Swett Green invented the idea of reference service in Worcester Free Public Library in Massachussetts in 1870s. In 1880s and 1890s, there developed a need for full time trained reference staff. By 1900, most of the public libraries in USA had reference sections, reference tools and reference librarians. During the first half of the 20th century, the concept of reference service was expanded and further researched.

In India, the reference service came quite late. In 1930, with the initiation of Dr.S.R. Ranganathan, reference service was first started in Madras University library by five young graduates, who were imparted training in reference work. In 1937, a position with the name of reference librarian was accepted in Madras University Library.

8.5. Reference Librarian

Who is a Reference Librarian ? A person who provides reference service is called a reference librarian.

Characteristics of a reference librarian :

1. A reference librarian has the knowledge of complete library's collection, sources of information and information tools e.g. online catalogs, search systems, databases, etc.
2. A reference librarian selects, acquires, organize and manage the collections of reference department.
3. A reference librarian guides library users by recommending books relevant to their area of interest.
4. A reference librarian identifies the documentary and non-documentary formal as well as informal sources of information.
5. A reference librarian prepares bibliographies, directories, indexes and abstracts for use by the user.
6. A reference librarian also helps the users to develop search strategies to find out information on the Internet and databases.
7. A reference librarian also informs the users about the collection and services of library.
8. A reference librarian also provides Current Awareness Service **(CAS)** and Selective Dissemination **(SDI)** of information to library users.
9. A reference librarian takes initiative to help others, have a good memory, curious mind keep himself abreast of the latest developments and excellent communication skills.
10. Above all, a reference librarian encourages users to achieve the maximum by effective utilization of library resources.

Self-Check Exercise

Give any 5 characteristics of a Reference Librarian ?

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8.6. Aspects of Reference Service

The reference service has two aspects : Ready reference and Long range. This concept is based on the time involved in solving a reference query.

8.6.1 Ready Reference

According to Ranganathan *"Ready Reference Service is reference service finished in a very short time in a moment if possible".*

e.g. what is the Capital of Germany ?

Which Indian won the Booker Prize last year ?

What is the population of Delhi ?

Important features of Ready Reference Service :

* It is a fact-finding service
* Not only the reference sources help in providing the information but the librarian can also provide the information on his own especially in case of repetitive questions.
* The reference books usually consulted are dictionaries, encyclopedias, yearbooks, almanacs, statistical tables, geographical gazetteers, directories, bibliographies, etc.
* Ready Reference Service involves three processes : preparation, service and assimilation.
* Preparation Phase : Reference librarian becomes familiar with the reference sources, new editions and maintenance of file of recent newspaper cuttings and magazine clippings.
* In the Service Phase, (1) He puts the enquirer along right lines so that he can help himself by directing the reader to the source of information, (2) providing the enquirer with the exact information, and (3) Training the enquirer to find out facts by himself i.e. giving the user instructions

as to how to use the library tools.

* Assimilation Phase : Assimilation is the process of absorption of information. A reference librarian can share his day-to-day reference queries and experiences to solve them with his colleagues. he can also keep a record of the reference questions solved by him in the form of cards and slips and make available to the staff of reference section, so that in case any of the other staff member is approached by same kind of query he can solve that instantly by avoiding the duplication of query he can solve that instantly by avoiding that duplication of efforts.

8.6.2 Long Range Reference Service

Need : Long Range Reference Service is required because

(i) Information is increasing day and day and so is the literature growing. It has become very difficult now, for an average scholar to keep informed of what's happening in his subject area. So, therefore, reference librarian helps in keeping him well informed of the latest developments in his subjects area.

(ii) The reference service helps in saving the time of the reader by making literature searches.

(iii) The primary, secondary and tertiary sources of information are not easy to locate and consult. Therefore, the reference librarian helps in understanding those technicalities of reference documents and helping the reader in finding out the information.

Process : The process of long range reference service consists of three phases :

(i) Preparation : After determine the user's interest, reference librarian tries to find out the various sources of information and collect the information not only on demand but also in anticipation of demand and records it in an organized manner.

(ii) Service : Supplying the document and information to the users. It could be article or book or a periodical or a translated text.

(iii) Assimilation : Reference librarian maintains a record of long range reference service. He could also suggest if there are gaps in reference collection, and also share his experience with his colleagues in case; he faced any difficulties while searching particular information.

Self-Check Exercise

What are three steps in a general reference process ?

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What are the two aspects of Reference Service ?

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Give any two differences between Ready Reference Service and Long Range Reference Service ?

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8.7. Information Service

The literature in all the disciplines is growing at an alarming rate. The scientists or researchers are finding very difficult to cope up with huge amount of published literature. Moreover, with the advent of Information Technology and the Internet, the situation has become worse. Now a days' web pages, databases, electronic books, electronic journals are also added in the list of sources of information. However, it has been said that the literature in social sciences is doubling every 8-10 years and in natural sciences every 5-10 years.

Information Service was first introduced and practiced in Scientific and Technical Libraries. The scientists and researchers found it hard to cope up with the huge amount of information/literature and so they made one person of their team responsible for identifying, organizing and disseminating the latest information in their area of specialization to the whole team.

So, what is an Information Service ?

In the Information Service, two things are involve :

* Provision of Information on Demand : Suppose you need particular information, you walk into the library; go to the reference desk, ask the librarian and you get the information. This is information on demand.
* Provision of Information in Anticipation : When the reference librarian or the information officer keeps the users well-informed and up-to-date in their subject area or related subjects, it is called provision of information in anticipation. The reference librarian research the information needs of its clientele, identifies the authentic sources of information, organizes the literature and prepares documents like bulletins, newsletters, etc. to disseminate the information. Normally this second approach is found in special libraries, information centres,

R & D institutions, etc.

8.8. What's the difference between Information and Reference Service ?

Though there is not a clear demarcation line between reference and information service but there are certain characteristics which make them differ from each other.

* Reference Service is a traditional approach and information service is a non-traditional approach.
* Reference Service deals with the provision of documents to the users or users are referred to the location of documents to find their necessary information but information service deals with the provision of exact information required by the users.
* Reference service is always provided on demand but information service could be on demand or in anticipation.
* In reference service, the orientation to use the document is also provided to the user but in information service as the exact information is provided so there arises practically no such need.

Information service is generally provided by information officer / information scientist / reference librarian / documentation officer. No matter what the designation is, the person in charge of providing information service must have the following qualities :

* Literature Specialization : well versed with various sources of information
* Good observation
* Logical/analytical mind
* Sound/academic and professional qualifications
* Accuracy of details
* Organization skills
* Widely read and keep himself up-to-date with the latest in his field of study or its organization
* Skilled in library techniques
* Experienced in handling information queries
* Well aware of the information needs of the clientele
* Proactive and take keen interest in providing information service

Self-Check Exercise

Define Information Service ?

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Mention two differences between Information and Reference Service ?

8.9. Trend in Reference & Information Services

The reference and information service in today's world is gaining much importance. Information and communication technologies have played a vital role in developing reference service. Today almost all the libraries are making efforts to :

* Make provision of reference section, adequate reference tools and reference staff
* Provision of electronic reference tools
* Provision of Current Awareness Service
* Provision of Selective Dissemination of Information
* Automated Indexes and Abstracts
* Direct access to online databases
* Make use of the Internet and World Wide Web as source of information
* Provide specialized training to reference staff
* Make use of the Internet as the mode of delivery of reference service
* Provision of reference service 24 hours and 7 days a week

8.9.1 Ask Jeeves

8.9.2 Virtual Reference Desks

Reference Desk provides direct personal assistance by providing specific information to library users. It guides the library user with the instruction in using the various library users, and refers to the various sources of information both outside and inside the library. The reference desk provides the information face-to-face and also by telephone. With the advent of application of information technology in libraries, the reference desks have extended their scope to virtual environments i.e. providing reference service in virtual time. In other words, the patrons in search of information need not have to visit the library physically in order to benefit from the reference service. The virtual reference queries and their answers are achieved in the FAQ. Patterson (2001) defines virtual reference as "any reference activity conducted through an electronic medium". Virtual Reference Desks is an efficient way of answering questions to many patrons at the same time, without having them to visit the library premises. e.g. The Virtual Reference Desk (VRD) project dedicate to the advancement of digital reference and the successful creation and operation of human-mediated, Internet-based information services. VRD is sponsored by the United

States Department of Education. It is an Internet-based question-and-answer service that connects user with experts and subject expertise (http: www.vrd.org./about shtml).

8.9.3. Question Point

Self-Check Exercise

What kind of questions you can ask on "Ask a Librarian" Service ?

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What is Virtual Reference Desks ?

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Why reference service is needed in libraries ?

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8.10. Concluding

So, as you have seen that the process of reference includes :

i) Showing interest and willingness to help whenever the readers approach with a query.

(ii) Researching the information needs of the users and locating the information/information resources corresponding to the needs of the users.

(iii) Taking Feedback : After providing the service, making sure that the information needs of the users have been met.

Therefore, reference librarians must be well versed with different reference sources and proactively provides the reference to the library patrons.

Reference and Reading List

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LESSON NO. : 2.2 **WRITER : Dr. Sewa Singh**

CAS AND SDI SERVICES : NEED, PURPOSE, TECHNIQUES AND EVALUATION

STRUCTURE

9.O. OBJECTIVES

In this lesson, students are introduced to CAS and SDI. They will be able to :

1. Explain the need and purpose of CAS.
2. Describe the characteristics and types of CAS.
3. Discuss the criteria for evaluation a CAS.
4. Explain the concept and objectives of SDI.
5. Mention the Components of SDI System.
6. Understand how to provide SDI.

9.1. INTRODUCTION

Current awareness is usually describe as “Knowledge of recent developments”. It is derived from the need to keep upto date with progress within a field. The need for it may be related to special in an area or simply from curiosity as it could be a matter of pleasure or pride in the professional life. However, according to Kemp, current awareness involves a knowledge of :

- new theoretical ideas and hypotheses
- new problems to be solved
- new methods and techniques for solving old and new problems
- new circumstances affecting what people do and how they may do it.

Sometimes, even knowledge of contents of current publications is current awareness. Luhn believed that making members of an organization aware of such new information which will most likely contribute to performing their individual

tasks with highest possible competence, is current awareness.

9.2. DEFINITION

Current Awareness Service(CAS) has been defined differently by different experts. Some four decades ago, Starauss, Strieby and Brown defined CAS in a comprehensive statement as "the establishment of a system for reviewing publications immediately upon receipt, selecting information pertinent to the program of the organization served, and recording individual items to be brought to the attention of those persons to whose work they are related."

Kemp has defined CAS as :

System for reviewing newly available documents, selecting items relevant to the needs of an individual or group, and recording them so that notification may be sent to those individuals or groups to whose needs they are related. The two definitions are quite identical, and they involve the following :

i. The review or scanning of documents ;
ii. The selection of items, by comparing them with the needs of those to whom the service is provided ;
iii. The notification to these people of the items of interest to them.

Ranganathan defined it as "Documentation periodical.....Listing the documents appearing during the period covered, and without being selected to suit the requirements of a particular reader or of a specific topic under investigation. This is of the nature of a general appetiser. It endeavours to keep the clientele informed promptly of all the nascent thought created in their field of work and related fields."

Thus **CAS** may be said to be a device of the information system through which the users of information can be informed promptly of current literature on a broad subject or in the field of their interest.

9.3. NEED FOR CAS

Since after the Second World War there has been enormous growth of scientific and technical information. It led to the problem of keeping uptodate about the recent development in different subject fields. The need for **CAS** arises from the need for information required for professional development, decision making, keeping upto date, etc.

9.3.1 Rate of Growth of Literature

The rate of growth of scientific and technical information has been so high that even in a narrow field researchers found it difficult to keep abreast of new developments. **CAS** enables researcher to keep himself up to date and well informed.

9.3.2 Interdisciplinary Nature of Research

As a result of team research there has been interdisciplinary nature of research scattered in journals of other related subjects. It necessitated the CAS for access to such scattered information.

9.3.3 Variety of Documents

In recent years, a variety of documents have appeared in addition to the journal and the book. These include patents, standards, technical reports, conferences proceedings, thesis, and the non-print media such as computer disks, electronic databases, etc. CAS covers the entire range of documents.

9.3.4 Saving of Time

Benefits to library users are another reason for providing CAS. The library may reduce the time and efforts spent in obtaining latest information by individual users separately. In library and individual or a small group of information personnel can scan literature on behalf of a large number of users, and notifying them the results may be cheaper (in time and effort) and more effective. Thus library and information staff can avoid wasteful duplication efforts by individual users and thereby save their time.

9.3.5 Ability for Literature Search

It is experienced that there are many users who do not possess the necessary ability and skills (or even willingness to undertake literature scanning for their current awareness needs. CAS is very useful to such library users.

9.3.6 Promoting Library Services

In the time of financial crunch, it is essential to promote and market library services. By CAS, the library and information centre resources are being brought to the notice of its clients, and are kept aware of the existence of the library. This creates an image of the library as an agency of active service.

9.4. CHARACTERISTICS OF CAS

Guha has stated the following characteristics of CAS :

4.1 It is an announcement mechanism for new information in the documentary form.

4.2 It is designed to meet or help cultivate the current approach to information.

4.3 The service is not usually intended to answer any specific query as current approach to information is only for obtaining a panoramic view of current developments.

4.4 The service shows the recent developments in a subject field through a judicious selection and featuring of current literature.

4.5 It is on a broader subject area so that a user gets a view not only his own subject of research but also of related subjects.

4.6 It is mainly addressed to those workers who cannot depend entirely their own information channels. What they miss there, is intended to be covered here.

4.7 Compare to all other formal channels, speed or timeliness is the essence of this service.

4.8 Due to the very nature of current approach, ease of scanning has to be ensured in a current awareness bulletin.

CAS is usually brought out in a published form. However, more recently, the service has been using electronic means of production. This then takes the form of an electronic bulletin board which is computer based, and accessible to users through their terminals. The user browses through items covered in the electronic board just as he would do in a published document.

9.5. TYPES OF CAS

The following major types of current awareness service are recognised :

9.5.1 Contents-by-Journal Service

This service requires only reproduction of the contents pages of selected journals in a broad subject area. Reproduction of table of contents is either done by the library in the information centre, or a commercial publisher can distribute the copies. The Current Contents is the best example of this type of service. It is published by the Institute of Scientific Information (ISI), Philadelphia **(USA).**

One reason for such a service is that journals are the predominant medium of communication new information. Library users can be regularly informed of journal articles appearing in current journals in their areas of interest. The simplest way of doing it is by duplicating the contents pages circulating them to users.

Another reasons for this type of service is that users value certain journals highly and link forward to browsing them when received in the library. The contents pages service enable them to identify quickly the articles published in journals of their interest, and they can read them soon.

Advantages

The advantages of the Contents-by-Journal service are that this method is quick, cheap and demands little intellectual effort in providing the service. It provides the maximum facility for scanning the current information. The used do not need to have any search formulation.

Disadvantages

It is said that this service encourages the user to look into the contents of his favourite journals only. Again, since this type of service provides only titles of papers, it is difficult to determine the usefulness of papers without examining the text.

9.5.2 Documentation Bulletins or Current Awareness Lists

This type of CAS is compiled by the library by scanning primary journals and other sources of current information received in it. The bibliographical details of these journal articles are collected, and grouped by subjects by giving them subject headings, class numbers, etc. These entries are then duplicated and circulated to users fortnightly or monthly.

In order to facilitate easy browsing of the documentation bulleting, there is a

contents page, and an author index as well as an alphabetical subject index, helping user easy location of useful items of information.

A current awareness list may include abstracts of papers also as they greatly enhance the usefulness of the list by providing additional information about the papers. If abstracts are well prepared they can often be substituted for the original papers in the journals.

Bulletins or lists are published both by the library or an organization for use within the organization as well as by professional or learned bodies, international agencies, commercial organization for use by any other user interested in the subject areas covered by the list. Examples : (1) Chemical Titles or the Chemical Abstracts Service, and (2) Current Chemical Papers of the Chemical Society, U.K. another kind of this category is the local current awareness list produced by the library suiting the needs of its users. The points to be kept in view are :

- The selection of items can be made keeping in mind the subject interest, research projects, product profile, etc. of the organization and its staff.
- It is possible to slant the abstract to highlight usefulness of documents to the organization
- The list can be featured to reflects the areas of interest or product profile of the organization.
- The list can include information from more than one type of information source.

9.5.3 Research-in-Progress Bulletins

The main function of such a bulletin/list is to help the user to find out whether anybody else is working in an area in which he is working or intends to work.

Thus it alerts the users to new research projects and progress made in ongoing research projects. Such lists are also valuable for those responsible for planning of research, grant of research funds, and management of research in general.

A **Research-in-Progress** type **CAS** can not be provided from a local documentation centre, and requires the joint effort of more than one national level organization working in similar or closely related areas. A parent body which funds or controls a group of research organization (e.g. **CSIR, ICAR** in Indis) could also bring out Research-in-Progress bulletins. An example of this type of service is the United States Department of Agriculture's **(USDA)** service, called Current Research Information System **(CRIS)**. All **USDA** laboratories and research stations contribute their inputs to **CRIS.**

Another example of a Research-in-Progress service that is international in scope is the **Current Agricultural Research Information System (CARIS)** if the **FAO (Food and Agriculture Organization).**

A Research-in-Progress bulletin usually contains the following information:

- laboratory at which the project is being done,
- names of principal and associate researchers,
- funds and sources of funds,
- duration of the project,
- special equipment in use, if any,

These days computer-based database is created and maintained for this type of service. Such a database can then be used both for retrospective search before a new project is formulated as well as for current awareness services.

9.5.4 Newspaper Clipping Service

The importance of newspapers as source of current information can not be over-emphasized in the political, social, and economic lives of people of a nation. Newspapers carry useful information to everyone from housewives to top management in corporate sector. Some newspapers are local or regional, others are national or international. Further, some specialise in economic or financial matters, and contain a depth analysis of trade, banking, industry, etc.

Newspapers being the valuable sources of current information, many libraries have attempted to provide the Newspaper Clipping Service to their clients. While preparing this service, the library carefully scans the newspapers for the items of news considered to be of interest to the user group. These news items are then clipped and pasted on a sheet of thicker paper, and assigned one or more subject headings. These clippings are arranged by subject headings and disseminated to users, may be daily or on weekly basis. This type of CAS is quite common in libraries of government department, banks and financial organizations, industry, etc.

9.5.5. Notification of Forthcoming Meetings

This is another type of CAS identified in literature. It is observed that knowledge of a forthcoming meeting, conference, seminar, symposis, etc. sufficiently in advance, is quite useful to many people. Gupha says that a research worker who has something new to communicate to his peers in the field can prepare to contribute a paper and get response from those attending the meeting or conference. Even a person without contributing a paper can attend a seminar or conference if he gets the information in advance. Researchers, scientists, academics attending or participating in such events always get the latest information about the recent development in the area of their interest. Even librarians need to know about these notifications about the meetings so that they could acquire the conference papers for their users.

Publication of notifications of forthcoming meetings has become an important service, and a regular feature in many journals. In India also such notifications are published in many periodicals and newsletters, etc.

9.5.6. Accession Lists

Many libraries bring out their accession lists regularly which can also be considered as a sort of current awareness service. These lists are intended to inform users of the newly acquired books and radicals that many may be of interest to them. But accession lists are not selective enough for the special interest of the individual user. They also do not provide enough information about the items listed, hence their usefulness is limited.

9.6. TECHNIQUES OF CAS

Kemp has identified the following techniques for communicating current information to library users :

9.6.1. Distribution of Current Awareness Bulletins

A typical bulletin might contain the following information :

i. General library publicity and announcements;
ii. General new items;
iii. Announcements of forthcoming meetings and conferences;
iv. Details of contents of recently received documents;
v. Details of publications taken from secondary sources.

However, the scope of the bulletin depends upon the needs of the organization and the resources made available to the library. But these services may be found more useful as these are tailor made.

9.6.2. Selective Dissemination of Information (SDI)

SDI is a highly personalized service directed towards individuals so as to cater to their requirements. **SDI** involves the provision of a service whereby the individual client is sent notification of items which match a statement of his requirements, called a 'profile'. The records of document are compared with the user profiles and notifications printed with the help of computer. The aim is that user should neither be provided too much of information nor made to miss information essential towards his requirements. **SDI** services is often provided with the intention of increasing the coverage of literature, and even the use of commercial services can also be made. However, with the use of computer for cataloguing in libraries, **SDI** service becomes a by-product of cataloguing operation.

9.6.3. Routing of Periodicals

It is considered an important technique of **CAS.** There are two main methods of routing the current issues of journals received in the library.

(1) Each issue of journal is sent to the first person named on a list of those who wish to see that journal regularly. It then goes to the next user on the list returning ultimately to library.
(2) In the second method, the library sends the issue of each periodical to

the first user on the list, who returns it to the library, and the library staff will passes it on to the next user, who again returns the issue to the library, and so on. This method will enable the library to monitor the routing process.

9.6.4. Display

It is usual practice for libraries to display either all or selected items of their recent acquisitions. This enables library users to keep abreast of the recent publications in their subjects. It is closely linked with library publicity, especially with regard to how and where documents are displayed. Display therefore is a very important aspect of current awareness services.

9.6.5 Selective Dissemination of Documents

The idea of this service is to combine the selective element in **SDI** with the availability of documents. It consists of sending copies of materials to groups of users at remote locations for retention there. These copies are often in microform, and so the service is often known as **SDM.** In addition, full-size contents lists are sent for distribution to the individual users of that they receive the library services at their place of work.

9.6.6. View data

Viewdata, according to Kemp, is the generic name for three services developed in Britain as a means of conveying current information, involving the use of television equipment. These services are **Ceefax (BBC),** Oracle **(ITV),** and Prestel service (formerly known as Viewdata, and run by Post Office Telephones). Use of Ceefax and Oracle enables one to select information using buttons on the decoder. Both are very similar, and offer about 100 pages of information through same channel as is used for the television programmes. On the other hand, Prestel service provides information to the user's television set via a telephone line. Selection of particular pages of information is made by using the buttons on a push button telephone. In Prestel, by contrast to Ceefax and Oracle, only the information demanded by the individual user is transmitted. In India also, such a service is available through Doordarshan TV network.

9.6.7. Telephone Calls and Personal Contacts

Telephone call is made to individual user regarding the availability of a particular document or some desired information. A good librarian can also pay a visit to the user with news about the availability. Such technique, thought of as courtesy, goes a long way to establish a new kind of relationship with the clients.

Thus there are many techniques and methods for providing currents awareness services. These are not as alternatives only, but as complementary and useful in different situations.

9.7. EVALUATION CRITERIA

Evaluation of current awareness services is necessary part of the librarian's job. A knowledge of how to do it is an important item in his skills. He can compare the existing and new external services with each other, and assess their usefulness in relation to the needs of his users. The principles which apply to the evaluation of **CAS** involve considerations of coast and effectiveness.

The following criteria may be employed to evaluate a **CAS :**

9.7.1. Costs and Cost Calculations

The various kinds of costs taken into consideration while calculating the total costs of a **CAS** are : visible costs, hidden costs, information service charges communication costs, costs of equipment, etc.

9.7.2. Contents

There are two aspects of contents : coverage and quality of information

9.7.2.1. Coverage

An external CAS may provide either selective or comprehensive coverage of the field, but it is unlikely to be comprehensive. Therefore, coverage may be considered in relation to : subject, kind of primary source, language, country of publication, category of users.

9.7.2.2. Quality of Contents

Here we are concerned with how much, and how clearly and accurately, information is given. If abstracts given librarian, should know their kind, accuracy, reliability and authority of compilers, bias, etc.

9.7.3. Arrangement

The ease of use of a service, particularly in printed services, depends or the arrangement of entries. It could be under broad subject groups, or closely classified arrangement.

9.7.4. Indexes

An index is another means of access to the service. For retrospective searches user is interested in the frequency of cumulated indexes. However, in machine-reachable services, it depends on the quantity and kind of descriptors and identifiers included in profiles. As far as possible, indexes to personal author, subject, corporate author, substance/material, geographical, king of document number, etc be prepared for easy access to items.

9.7.5. Currency

The currency of a service referees to the upto-dateness of the primary documents covered in it. The range of currency can be very great : from announcement in a current contents publication to three years after publication. Currency of **CAS** is a matter of great importance to clients in technical and commercial environs.

9.7.6. Frequency

Since frequency and currency are related, the frequency of publication of a service obviously affects the currency of the contents. A monthly service is the minimum acceptable for a **CAS,** but many are issued weekly to be more current.

9.8. SELECTIVE DISSEMINATION OF INFORMATION (SDI)

9.8.1. Definition

SDI is a refinement of the idea of current awareness service H.P.Luhn, a computer scientist proposed in 1961 a method of using computers to provide **CAS,** which he called as **Selective Dissemination of Information (SDI)**. Luhn defined **SDI** as "that service within an organization that concerns itself with the channeling of new items of information, from whatever source, to those points within the organization where the probability of usefulness, in connection with current work or interests, is height." This definition indicates that the concept puts new emphasis on our library and information service in response to changing circumstances. This brought qualitative changes in personalized information services.

9.8.2. SDI System

An **SDI** system may be said to comprise the following components :

1. User Profile
2. Document Profile/Database
3. Matching
4. Notification
5. Feedback from Users
6. Modification of User Profile

These are described as follows and given in the flowchart.

9.8.2.1. User Profile

According to Kemp "A profile is an expression of the current interest and needs of a client, stated in a way which enables it to be used to identify the records of documents which will meet those interests and needs." Thus the building of a user profile that truly represents the users interests and information seeking habits is the crux of an SDI system. The user is asked to state his needs in his own language, and define the concepts. Such elaboration or definition of concepts provides clues about the scope of the concepts. But it is not easy, as the users fail to express needs in precise terms. Hence a standard thesaurus need to be used to use the accepted terms.

The user is also asked to give a list of papers relevant to his needs. This will provide clues about related areas of interest, and about narrower and broader areas. Besides, user is also asked to provide information on names of person's names of organizations in which he may be interested.

The user profile represents not only users subject interests but also his

searching patterns and other approaches.

9.8.2.2. Document Profile/Database

It contains document descripting the subject content of the documents being described, as and when received in the library. Since SDI is a computer- based service, the document database is in computer-readable form. The document database used in SDI is usually for current literature. The terms selected to describe document content are usually taken from a thesaurus. The document descriptions are then organized into document profile file.

9.8.2.3. Matching

At regular intervals, say weekly or fortnightly, the two files, i.e., the user profile and the document database are compared and matched with the help of computer. In fact, a computer program running inside the computer does the matching of user interests with documents, and the details of both the records are noted.

9.8.2.4. Notification

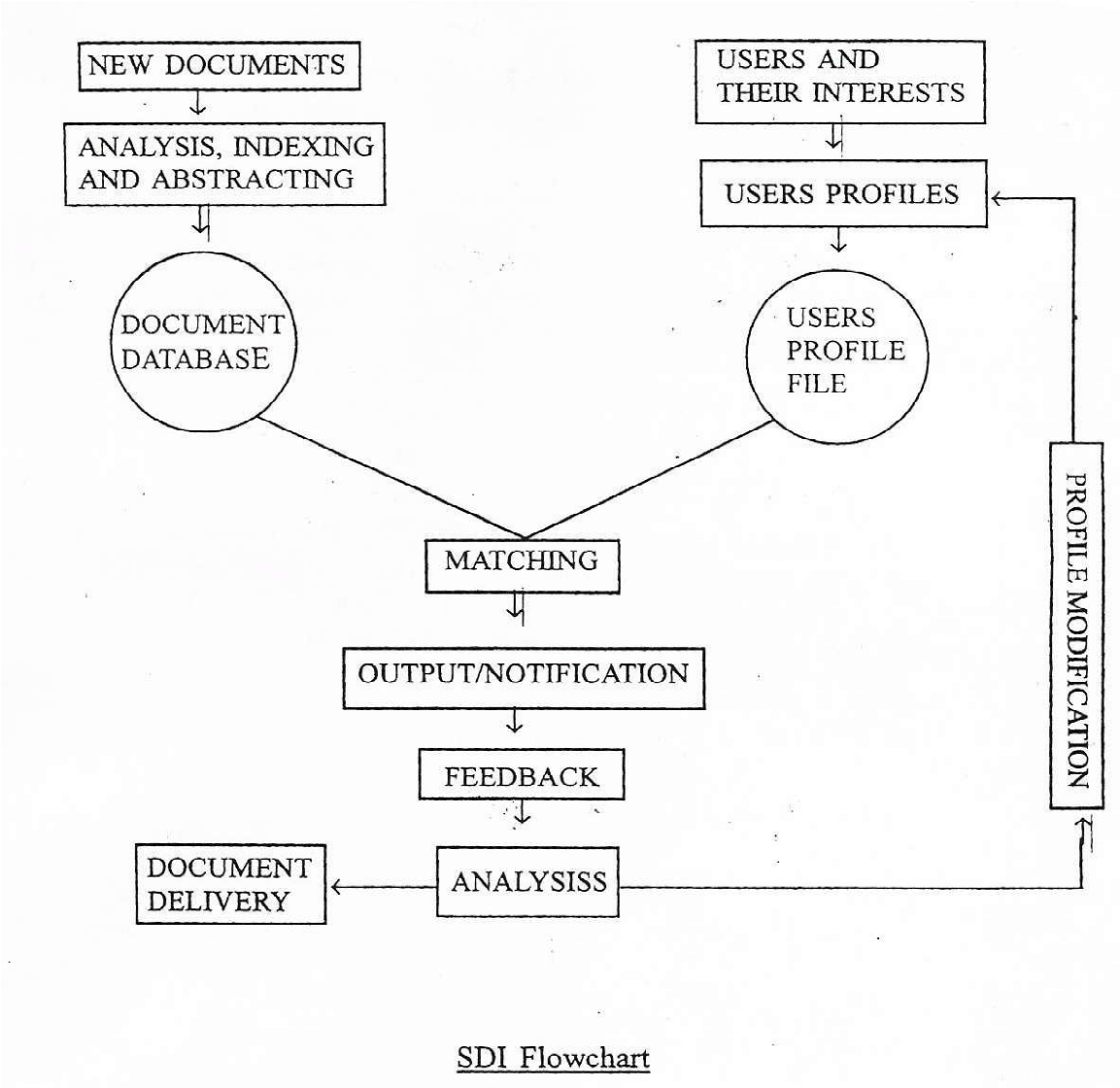
After matching, documents which satisfy a given user profile are selected for dissemination and notification to the user. The notification usually takes the form of a list of references with abstracts of keywords. The notification is sent to alert the user about current literature likely to be relevant to his interests. It is therefore important the detailed abstracts of documents is the best way of informing the user about the contents of documents.

9.8.2.5. Feedback

Feedback is an important feature of SDI system. The user is expected to respond to each notification sent to him. He is asked to check how far the notified references were of interest to him or relevant. Once the feedback from the user is received in the library, it will be analysed to ensure if the items notified are in fact useful to him. In case he is satisfied by majority of the items, the User Profile is considered well prepared. But if many items are found not useful, changes in the Profile will be made according to the feedback.

9.8.2.6. Modification

Feedback (response) received from the user is carefully analysed, and User Profile is modified as suggested, if output not found relevant or useful. The **SDI** system analyses the reasons for the dissemination of the items that were not found useful. This will help in modifying the User Profile or search expression for the user. Once it is done, the performance of the modified profile is again monitored to ensure that it has improved.



SDI Flowchart

9.9 SUMMARY

CAS and **SDI** have become necessary because of growth of literature publishing current research findings, advances in the industrial and technological fields, socio-economic developments, etc. These developments are sufficient reasons to keep scientists, technologists, managers, engineers, planners, etc. abreast of current information in their respective fields. As an alerting service, the main types of **CAS** have been described. **SDI,** on the other hand, is oriented to user information needs, and is based on the construction of user profiles. These are matched with document profiles to obtain citation of interest to users. These are notified regularly and feedback obtained to modify the user profiles, if need be, to improve the **SDI** system.

9.10. GLOSSARY

1.	Database	:	Information stored on computer files and accessible through remote terminals
2.	Feedback	:	A response to a message in communication.
3.	Profile	:	Outline of an object.
4.	User Profile	:	an expression of user interest as a combination of subjects and non-subject terms.

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BIBLIOGRAPHICAL SERVICES

Structure

10.0. Objectives

This lesson introduces the students with some of the important bibliographical services. After studying this lessons, they will be able to :

1. Explain the need and usefulness of indexing services.
2. Understand various indexing languages.
3. Describe the uses and types of abstracts.
4. Know about the various digest services and literature reports.

10.1. Introduction :

In recent years, there has been enormous growth of published literature, diversity in forms of publications, scattering of published information, publishing in many languages of the world. To meet with the information requirements of researchers, scientists, etc. libraries have developed bibliographic services including indexing services, abstracting services, digest services etc. Many new methods of document description and representation have also been evolved. These will perform the basic function of location of documents as well as retrospective searches.

10.2. Indexing Services

10.2.1. Definition

Indexes help the researchers to reach to the material of lasting value. Indexes according to Grogan have been among "the most important bibliographical tools for controlling the periodical literature." An indexing service usually provides sufficient bibliographical information about each item to enable it to be identifies and traced.

An index has been defined as a "systematic guide to items contained in or concepts derived from a collection. These items or derived concepts are represented

by entries arranged in a known or stated searchable order."

10.2.2. Need and Purpose

The following factors have contribute to the instituting of indexing services.

10.2.2.1. Growth of Primary Literature

It is widely believed that during recent years there has been enormous growth of scientific information. It is estimated that published literature in science and technology is doubling every seven to eight years. This speaks about the need for indexing services.

10.2.2.2. Forms of Publications

The total literature published around the world is brought out in a variety of formats. There include book, journal articles, research reports, conference papers, proceedings of conferences/seminars, dissertations and theses, patents, standards, specifications, etc. This makes it clear that indexing services are required by researchers.

10.2.2.3. Language Barrier

The literature mentioned above is not published in one or two languages of the world. English is no more the pre-eminent language of scientific communication. It is estimated that more than 50 percent of world's scientific literature is published in non-english languages, such as Russian, German, French, Japanese, Italian, Spanish, Chinese, Arabic, etc. Therefore, there is need for a service that collects all the publications in different languages.

10.2.2.4. Problem of Scatter

In addition to the above stated problems, there is also the problem of the scatter of literature in a number of publications. It is found out that literature on one subject is not only published in journals of that subject but in sources peripheral to the core area, and sometimes even in alien fields. This has been amply proved by Bradford's law of scattering.

From the above discussion it is obvious that in order to keep abreast of all the relevant literature published in a given subject, there is need such services as indexing services, abstracting services, and other bibliographic services.

10.2.3. Functions

One of the primary functions of indexing services is to bring together all or at least significant publications which are scattered in many documents. These services may be limited to a subject or discipline, irrespective of the country of publication, language or form. Indexing services are brought out at national level covering all documents published in a country. For instance, Guide to Indian Periodical Literature, is an example of national level indexing services. Similarly, these services are also published by international agencies, for example, Agrindex is brought out by the food and agriculture organisation, Rome.

- Another function of indexing services is to provide access to all published literature on a subject with full bibliographic details.
- Through their annual and the other accumulations, indexing services facilitate retrospective searching.
- They help in preparing subject bibliographies.
- They are also excellent records of contemporary published literature, which can be analysed for useful indicators for further research.

10.2.4. Computerization

Most of the indexing services have been computerized by turning the basic data maniputable so as to produce a range of services in many formats such as CD-ROM, online version, etc.

10.2.5. Indexing Language

Document description with more emphasis on document representation with efforts to make documents accessible, indexing techniques have been refined and systematized. When one index term does not represent the document and its content adequately, more than one term are used and arranged in more searchable order. This ordering involves a definite syntax, semantics and orthography that make indexing an artificial language, different form the natural language. Even a classification is a readily available language, different from the natural language. Even a classification is a readily available language used in an indexing system.

10.2.6. Development of Indexing Languages

Indexing languages developed so far can be grouped into two major systems : pre-coordinate system and post-coordinate indexing system. These are briefly outline as below :

10.2.6.1. Pre-coordinate indexing system

In such a system of indexing "a compound or composite subject is analysed into its constituent concepts according to a plan and these constituent concepts are then represented by symbols or words of the indexing language in use." These components are then synthesises and arranged in the order recommended by the rules of a given language.

Some important pre-coordinate indexing systems developed by eminent personalities are mentioned below.

10.2.6.1.1. Systematic Indexing

This indexing language was developed by **J.Kaiser** for finding a sound theoretical basis for fixing the sequence of terms or order of significance in headings. His main recommendation was to analyse a subject so as to distinguish the constituent concepts into two main classes-concrete and process and would arrange the terms in that order only, i.e. the concrete element to be the entry element.

10.2.6.1.2. Chain Indexing

This indexing language was developed by S.R. Ranganathan by making explicit use of classificatory language by taking help from classification scheme. Here the class number of subject is retranslated using the schedules of the same scheme of classification and obtaining the neatly structured formulation of the subject. Thus the indexes can provide alphabetical approach to a classified file.

10.2.6.1.3. Postulate-base permuted subject indexing (POPSI)

POPSI indexing procedure was developed by G. Bhattacharyya and other teammates at documentation research and training centre, Bangalore. As and indexing language, **POPSI** can be used for such purposes as formulating subject headings, deriving subject index entries, determining the subject of reader's query, serving a base for the presentation of ideas in the text of a document, etc. Like chain indexing, **POPSI** is not base on any scheme of classification but uses ideas and theory of classification in analysis of subjects and structuring of the names of subjects.

10.2.6.1.4. Current technology index (formerly BTI)

E.J. Coates has given one of the finest exposition of subject indexing. He put his ideas into practice on a large scale in British Technology Index now called as Current Technology Index. Regarding order of significance, coated holds that "the most significant term in a compound is the one which is readily available to the memory of the enquirer." The psychological basis of thinking process is also reflected in the choice of word in a composite subject heading, to give **Thing-Material-Action.**

10.2.6.1.5. SLIC Indexing

Believing that conventional indexing systems are unable to provide necessary number of entries, **J.R. Sharp** has devised a new system of deriving additional headings in and economical way which has been named the **SLIC index (Selective Listing in Combination)**. In **SLIC** index the emphasis is entirely on the combination or the method of rotation of elements irrespective of the citation order.

10.2.6.1.6. Preserved context indexing system (PRECIS)

The most important development in alphabetical approach to subject specification in recent years has been the design and use of **PRECIS** in **Britain**, It was mainly devised by **Derek Austin** to be use in **British National Bibliography (BNB),** and made further refinements to take account of work done with other languages. It was used to generate subject headings for an alphabetical catalogue. **PRECIS** has also developed a theoretical basis for the ordering of component terms of a composite subject, and each term is allocated a role operator.

10.2.6.2. Post-coordinate indexing system

The pre-coordinated system of indexing was not all satisfactory. Those who were dissatisfied with them devised system which would do coordination of concepts at the time of search. These indexing systems were called post-coordinate indexes.

These are briefly mentioned below :

10.2.6.2.1. Uniterm System

This indexing system was devised by Mortimer Taube, as the most simple, bringing out the characteristics and logic of a post-coordinate system of indexing. in uniterm indexing system, the index entries are to consist of unit terms as opposed to composite headings. The subject content of a document is analysed and individual concepts isolated and separate term cards are prepared with a unique document number. At the time of search the posted members for times are compared, and the common numbers would represent the document on the subject sought.

10.2.6.2.2. Optical Coincidence System

It has many variations such as peek-a-boo system, peephole card system, the batten system, These are all base on the same principle of coordination. It is the Result Of The Batten system and Selecto System of cordonnier. In a typical optical coincidence system, term cards representing each of the constituent concepts of a subject are prepared in the same way as in the uniterm system. In each of the term cards a hole representing the number is punched and detect the holes against light at the time of searching.

10.2.6.2.3. Zatocading System

It was devised by **Calvin Mooers** where the main record for a document is an edge-notched Zatocard. For the representation of the subject content of a document Mooers devised a system of coding in which the class labels are called 'descriptors'. These are represented by notches on the top edge of a card. At the time of search the request is translated into descriptors and then a pattern of codes.

10.2.6.3. Mechanized Indexes

The development and use of post-coordinate indexing and use of computer in bibliographical data handling made it possible to develop machine indexing. H.P.Luhn of **IBM** was a pioneer in this field who developed a completely machanised indexing system which was name **KWIC** (Key-word in context) index. Since then a number of variations of **KWIC** index, e.g., K**WOC, KWAC** have been developed. These indexed have come to stay and are being used in a number of indexing services, bibliographies, etc. Most of the KWIC indexed are based on the titles of documents indexed and produced by the rotation of all the significant terms in the titles with aid of computer without any intellectual effort.

10.3. Abstracting Services

In subjects with considerable volume of primary literature and they are scattered over different sources, abstracting services are important signposts or guides. In fact, abstracting periodicals were considered as a device that became necessary to be introduced into the science communication system as a result of steady and exponential growth in primary literature. Abstracting service can essentially provide

a scientific worker a bird's eyeview of the progress and development of his subject by bringing to him in a condensed form the latest literature of the subject.

10.3.1. Meaning of Abstract

An abstract in simple words, means summary, abridgement, precis. William Katz states that an "abstract offers an objective analysis of what a given article, book, film.....contain."

10.3.2. Uses of Abstract

As a tool for the researcher, abstracting service has the following uses to offer :

(i) It alerts him (the way an indexing service does) to newly published work scattered in many journals and other sources that he is likely to miss without its help. It is called current use function.

(ii) It can obviate the need for actual perusal of the original articles in a journal.

(iii) It helps the researcher save his time by grasping at the steady living tide of the publications.

(iv) It allows retrospective retrieval of specific information.

10.3.3. Types of Abstracts

Technically, there are two types of abstracts as given below :

10.3.3.1. Indicative Abstract

This type of abstract merely tells "briefly what the document is about." It is brief abstract or short summary written with the intention of enabling the reader to decide set her he should refer to the original publication or article. It indicates what it is about, which its little can seldom do adequately.

10.3.3.2. Informative Abstract

According to Robert Mainzell and associates, "Information abstracts are longer and present the essential data and conclusions so that the reader has no need to refer to the original document." It is one which summarizes th principal arguments and gives the principal data in the original publication or article. It therefore describes a summary of the significant contents of the original.

10.3.4. Use of Computer

With the application of computer, there are some abstracting periodicals which are produced from computerized databases that are online. they make special effort to get certain materials abstracted within a week. These are few more which have their own document deliver service and can supply copies at an early time. Computerized printing of abstracting services reduces the time lag considerably, and make the services more upto date and useful

Most of the international abstracting services are non brought out from computerized database, and therefore produce a range of spin-off services which

include both print and computer tape material. For example, CAS has the following services :

- Chemical Abstracts on Microfilm
- CA Condensates
- Chemical titles
- CA Patent Concordances
- CA Selects
- CA Subject Index Alert
- and so on.

10.3.5. Indian Science Abstract

It may be useful to point out that many abstracting services are published in India also. In 1965 NISCAIR (then INSDOC) started a new abstracting service Indian Science Abstracts. All scientific communication published in India, as well as work done in India but published abroad are reported in ISA. It includes about 1000 Indian scientific periodicals, while it scans about 2000 foreign scientific periodicals for preparing about 36,000 abstracts per annum in 24 issues. There are more abstracting services brought out by the Indian Council of Social Science Research, Central Board of Irrigation and power, Central Food Technological Research Institute and so on. However, there is need to bring out more abstracting and indexing services for researchers covering India literature.

10.4. DIGEST SERVICES

10.4.1 Year Books

These services are primarily concerned with bringing current information to the notice of the readers. All the published information on topics of current interest as well as current information on different subjects is packaged in digest form and brought out in yearbooks, almanacs, etc. These yearbooks are updated every year to include latest data and information on topics of interest. Thus yearbooks are not only digests of current information, but also annual services of world history.

The importance of these digest services lies in the fact that these are quick reference sources put to frequent use by the reference librarians in answering a variety of questions on recent information, basic facts, recent trends, latest developments etc.

10.4.2 New Digests

If the information is too current to be included in year book, then another obvious source if the newspaper. Since it is the time consuming to search through runs of newspapers, these are news digest services available which are indexes to current events.

These is facts on file, which is a weekly world news digest service. Thus being international in scope, it is quite an uptodate service providing weekly summaries

of events from about 70 major newspapers and magazines of the world. It is also available online as well as on CD-ROM.

Similarly, there is another international news service form Britain, called Keesing's Record of World Events. It includes detailed subject reports by experts in certain area so as to provide a complete view. It records national and international affairs based on constant monitoring of the world's press and information sources. It is also available in CD-ROM version.

For Asian events there is Asian Recorder, a weekly digest, but it has now been released by Asian News Digest since 2000. And or Indian events, there is a weekly service called Data India covering significant events, facts, data about India's economic and social development.

10.5. LITERATURE REPORTS

A literature report usually describes the literature available on a particular subject. This service is provided generally on demand and not in anticipation of the demand.

- It includes a description of how the literature was collected.
- It describes the literature objectively, and if asked comments may also be added.
- It is tailored to suit the needs of the patrons.
- The content must be such that the patron can have a clear impression of literature treated without reading it.
- It need not contain any critical comments unless asked for.

10.5.1. Types

Broadly speaking, there are two types of literature reports :

10.5.1.1. Descriptive Reports

Such reports generally attempt to cover complete literature of a particular subject, and describe it as per requirements. It can thus give a comprehensive bibliography at the end of the report.

10.1.2. Critical Reports

In such reports the concentration is usually on new ideas or controversial aspects of literature on a subject. It therefore provides only a selective list of literature.

10.6. CONCLUSION

Some of the important bibliographical services have been described in the foregoing pages. these services are quite popular among a vast array of researchers, scientists, academicians, students, educationists, etc. and are provided by the library and information professionals to meet with their patrons requirements for current information. These services are therefore quite essential for research and development in a given subject.

10.7. SUMMARY

In this lesson attempt has been made to discuss various types of bibliographical services such as indexing services, abstracting services, digest services, news digest and literature reports. Attempt to explain their need and purpose, functions, computerization of these services, with special reference to the various indexing language developed over the years. Provides also the Indian scene regarding the abstracting and indexing services.

10.8. SELF-CHECK EXERCISES

1. State the factors that necessitated the publication of indexing and abstracting services.
2. Discuss briefly the functions of indexing and abstracting services.
3. Define indexing. Discuss various types of indexing languages.
4. Distinguish between pre-coordinate and post-coordinate indexing systems.
5. Define abstract. Discuss various types of abstracts.
6. Explain the meaning and need of digest services.
7. Write a note on the importance of literature reports.

10.9. GLOSSARY

1.	Bibliographical Control	:	To get a complete recording of published information
2.	Bibliographical Information:		Information about the author, title, periodical, volume, year, pages, etc.
3.	Exponential	:	Growing at particular rate.
4.	Spin-off	:	Anything derived from something already in existence without any damage to it.

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REFERRAL SERVICES

Structure

11.0. OBJECTIVES

This lesson is prepared with the following objectives :

1. To acquaint the students with the concept of 'referral services'.
2. To know the referral process, and its need.
3. To understand the factors that can influence the referral service.
4. To know how it helps to improve the image of the library.

11.1. INTRODUCTION

It is an established fact that there has been enormous growth in scientific and technical literature in recent years. One can well imagine the problems of researchers, scientists, academicians, etc. due to growth of literature. There also emerged increasing demand for information, and the libraries responded by providing various types of services. Denis Grogan once observed : "There is no area of knowledge which can be excluded as a possible subject of an enquiry in any library." But at the same time, no library can be self-sufficient to attend to all the users' queries. This has led to library cooperation, also called resource sharing. It is at this point that the new reference activity called "Referral Service" has occurred.

11.2. DEFINITION

There are various definitions available in literature on the subject. In referral service, reference staff can tell the users about the persons and institutions who may be able to provide information sought by them.

According to Suseela Kumar, since no library has all the available material on a subject, in several case "enquiries are directed to specialist associations of libraries and in some cases also tot he subject experts"' such a service is called referral service.

According to Goneberger and Luck, referral service is defined as "the process of linking a person with a need or problem with a service which will meet the need or solve the problem."

Ruth Fineer was of the opinion that referral service "connects a searcher for specialized information with an appropriate personal or organisational source". This makes it clear that the primary purpose of referral is not to provide answers to enquiries, but to function as intermediary directing enquired to suitable source of information.

William Katz, on the other hand, calls this service as "Information and Referral Services", because the term has undergone many changes over the years. He states there are other terms used to describe this service, such as "Community Information Centre" where the users are offered access to resources that will help them with health, rent, consumer, legal, and similar problems. Libraries can provide free information on such subjects.

Although, referral is rarely offered by any centre exclusively, yet the term "Referral Centre" exists in literature. In Harrod's Librarians' Glossary, the information and data to appropriate sources such as libraries, information evaluation centres, documents or documentation centres and / or individuals". It is thus clear that the referral centre does not provide information, but directs the enquirers to available sources.

11.3. NEED FOR REFERRAL SERVICE

The need for referral service can be described as given below :

11.3.1. VARIETY OF INFORMATION

The growth of information and the variety of information available has made an impossible situation for the libraries where they can not acquire all that is published around the globe on all conceivable subjects. As stated earlier, in such a situation, no library is able to satisfy all demands for information made on its limited sources without taking help from outside sources. Thus the "reach out" aspect of referral service is an important characteristic, particularly when there is need for current information on a highly specialized subject. This brings in the need for referral service where the enquirer is directed to some specialist agencies or subject experts. This specialist agency could be a museum, a government department, a learned society, an association, a specialized institution, information/documentation centre, an individual, or a group of individuals, and so on.

11.3.2. PROFESSIONAL RESPONSIBILITY

Library personnel being the intermediate agents, have a professional role and responsibility to give counseling and provide advice regarding the availability of the required sources of information outside the premises of the host library.

The referral queries are of multi-dimensional type like community and social information, consumer education and protection, health and hygiene, financial tax advice, education, job training and employment opportunities, recreation and entertainment, information about aging and children's needs, psychological and medical consultancies, geographical and tourist information, housing and welfare schemes, and so on. The enquirer can be a lay person or an expert with a simple to complex problems. the reference librarian and / or technological gatekeeper are suitable agents for referral service. Since referral function is found to be relevant and prevalent in every type of library, the professional responsibility calls for an adequate awareness and analysis of referral service.

11.4. PROCESS OF REFERRAL SERVICE

Generally library personnel provide reference and other information services systematically. Like any other library service referral service should also be provided in a systematic manner. Grogan, while quoting Gail Dykstra, has advised the library and information professionals that "either librarians must learn how to do referrals the right way or they should not do them at all". The process of referral service can be described with the help of following steps :

i. The librarian should arrange for a talk with the enquire to discuss the latter's information need.

ii. Reference librarian should relate the query to appropriate agency, i.e. an expert, or an institution. The choice of the person or of the institution

should be made after referring to referral database developed in the library.

iii. Should make contact with the person or the institution, and provide them some back ground information about the user's problem.

iv. A query description form should be designed and filled in by the reference librarian, containing name and address of the contact person and query description.

v. The enquiry form should be handed over to the enquirer with a request for feedback.

vi. After getting the feedback, the library staff should make a proper not of it, as this could be useful for further service.

It is better if the staff is given appropriate orientation/training in order to provide the referral service in the right way.

11.5. FACTORS INFLUENCING REFERRAL

A few factors that influence the effectiveness of referral service are as follows :

11.5..1. Willingness
11.5..2. Identification of the problem
11.5..3. Identification of the sources
  11.5..3.1 Familiarity
  11.5..3.2 Firmness
  11.5.3.3 Options
11.5.4. Time Factor, and
11.5.5. Feedback.

11.5.1 WILLINGNESS

The referral process cannot take place without the willingness and mutual faith of the trio, i.e. the patron, the match-make (reference librarian), and the source (provider of solution). The match-maker's interest in the problem and patron, and his commitment to professional service are the foundation on which depends the success of referral service. His skill is referring the patron to the right and appropriate source (s) in just sequel to his willingness to cooperate with the patron. His rapport with the source will enhance the effect of referral, as the patron will be better attended to at the source.

The patron, on his part, should be serious about his enquiry, and should not loose interest subsequently. This will make him committed to approach the source referred to. In other words. the patron must have faith in the matchmaker as well as the source.

On the other hand, the source must also be willing to receive and attend to the patron's request for a need. This is required because the patron may or may not have acquaintance with the source. The source's primary job though is to cater to its

own patrons, and as much not obliged to help the outside patron. It is only on the strength of the matchmaker's recommendations that the patron gets attention. In short, willingness of matchmaker, patron, and source must be seen in practice, and not to be taken for granted.

11.5.2 IDENTIFICATION OF PROBLEM

The reference librarian should employ all the techniques of reference interview to identify the problem of the patron. At this stage the reference librarian (match maker) can decide whether he can handle the enquiry or not, and if yes, how far can he help the patron. He should not give the impression that he has failed to get information for a patron and hence passing the buck. However, referral does not by any stretch of imagination, mean failure of reference service. It is a positive quality of the reference librarian. He refer the patron because the particular enquiry does not fall under the scope and preview of his own library and information centre, and thinks some other person or institution is better equipped in solving his problem. By resorting to this approach he is attempting to practice the fourth law of library science, "save the time of the reader", as well as that of staff.

11.5.3 IDENTIFICATION OF SOURCES

Once the problem of the patron is adequately identified, it usually enables the matchmaker in identifying the appropriate source. This is the core activity, the summun bonum, of referral service. This linkage of patron to the source may be just a flash of thought or may require handling of reference sources such as directories, handbooks, yearbooks, who's who, union catalogues, etc. to identify the right and suitable source(s).

11.5.3.1 FAMILIARITY

It would be stating the obvious that the reference librarian has to be familiar with the reference tools, patron as well as the source. this desirable familiarity of the matchmaker with the source is an additional factor in identification of sources to be referred to.

11.5.3.2 FIRMNESS

The reference librarian should not be speculative, but quite firm about the source which referring. Awareness and knowledge of specific sources of information makes referral more exact service. It no only satisfies the patron but also strengths his belief in the library and library staff.

11.5.3.3 OPTIONS

In the process of identifying the source followed by directing the patron to such source, the reference librarian (matchmaker) should not be biased. It is not appropriate for him to rank or rate the source(s). It is better to provide all the options than to recommend any particular source, as the reference librarian has no expertise for evaluating the service of the providers of solution. The wisdom in the world of

reference, according to Grogan, is "never offer a personal opinion". The patron must make his own choice, though he can be informed of the immediate availability or non-availability of a particular source.

11.5.4 TIME FACTOR

A smart and swift act of matchmaker, followed by patron's persuasion and the quick response of the source will accelerate the process of referral service. Any delay caused at any of these points could mar the success of referral activity. Hence, time consciousness of all the three participants is quite essential.

11.5.5 FEEDBACK

Feedback is the barometer of the success of referral service. Only the patron can judge the usefulness of information received form the sources. The provision of feedback from the patron contributes to matchmaker's exactness of a particular referral activity and its effect on patron. Feedback actively given by the patron to the matchmaker will enable him to perform referral with more precious and firmness. But this is not always possible, for the patron is busy in pursuit of his work. However, the patron should be given a feed back from while introducing him to the source, so that he would return the same to the library.

The feedback also results in 'follow-up', which aims at finding out if the patron needs further assistance. this is necessary when the patron is not satisfied with the first level of referral service, and also, if the patron choose to pursue the problem further.

11.5.5.1 ANALOGY FROM MEDICAL PRACTICE

An analogy could be drawn from the medical practice, where referral service is practised with a great success. When a medical practitioner refers a patient to a clinical laboratory or to an expert for an opinion, he is doing referral. Such a clinical laboratory or an expert gives its/his opinion addressed to the doctor who has referred the case. It is seldom given straight to the patient.

The doctor continues to hold the responsibility of his patient's health. But this is usually not practised in referral when applied to library situation. However, at least the reference librarian should be kept informed of the patron's pursuit of that particular problem. The bondage between the patron and the reference librarian is not always as strong as that between the doctor and his patient. This, however, could be achieved by the reference librarian's invitation in securing the feedback from each patron referred to some source.

11.6. CONCLUSION

From the above discussion, it is amply clear that referral can not take place in isolation without the active participation and cooperation of all the three, i.e., the patron, the reference librarian, and the source. Since the referral activity would improve the image and status of librarians in society, it is imperative that librarians put forth initiative efforts. If library acts as a source where a patron is referred by a matchmaker it should not only attend to the patron to its best of a ability in solving

the problem, but also inform the matchmaker about the progress of that particular case. However, not much is known about the nature and extent of referral service provided by libraries is India.

11.7. SUMMARY

In the present age of information overload, it is desirable to provide referral service by directing patrons to specialists as well as institutions. The need for referral emanates form the variety of information and sources, as well as the professional function of the librarians. Discussed that the process of referral service should be in a systematic manner to make it effective. The factors that influence referral service are identified for making it a successful service and thereby raising the image of the libraries and information centers.

11.8. SELF-CHECK EXERCISE

1. Define 'referral service', and distinguish it from 'reference service'.
2. Discuss the importance and need for referral service in a modern library.
3. Enumerate briefly the steps into he referral process.
4. Describe the factors that influence the referral process.

11.9. GLOSSARY

1.	Matchmaker	:	A person (usually the reference librarian) who directs the patron to a source for information
2.	Patron	:	A person who visits the library in search of information.
3.	Refferral Centre	:	An organisation for directing reseachers for infomation to appropriate source.
4.	Sources	:	A person or an institution that provides the information to patron.

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LESSON NO. : 2.5 | **AUTHOR : DR. SEWA SINGH**

DOCUMENT DELIVERY AND TRANSLATION SERVICES

Structure

12.0. Objectives

After reading this lesson, the students will be able to :

1. Explain the need of document delivery service.
2. Give an account of electronic document delivery.
3. Explain the need and importance of translation service.
4. Develop acquaintance with the translation centres.

12.1. Introduction

The efficiency and effectiveness of literary and information system lies in the case of use of its resources and services. This ease of use is concerned with not only the physical accessibility but also intellectual accessibility. A library can always improve its performance by making its resources and services as easily accessible as possible.

12.2. Document delivery

Researchers who are busy in their academic programmes, and are unable to spare sufficient time to visit the library for material or information would like it to be delivered at their work place. The library can evaluate the strength of its collection and the speed of service required for document delivery. Similarly, the performance of library is also judged when a document requested is not available in its collection, and it has to be obtained form outside sources on inter-library loan basis. The terms 'borrowing' and 'lending' describe two aspects of an inter-library transaction. Mostly libraries in academic institution do not lend the physical volume or journal issue, and they rather supply photocopies of the material requested. This entire area of library service can be described by the term 'Document Delivery. By implication Weaver suggests that it "refers to sharing of information resources by libraries, rather than to the lending of libraries."

12.3. Need

The need for **Document Delivery Service (DDS)** has been recognised because of the following factors :

(i) Increasing cost of journal subscriptions because of escalating prices.
(ii) Static library budget/decreasing budgets year after year.
(iii) Increasing demand from the library users.
(iv) Tremendous development in research activity.
(v) More and more awareness about the DDS among the library users.
(vi) It is a cost-effective service

12.4. ELECTRONIC DOCUMENT DELIVERY (EDD)

The recent developments in technologies have had far reading impact on all areas of human work. These have brought about significant improvements in document delivery through conventional means. The development of online union catalogues have greatly facilitated location of various documents of interest. Similarly,

the development of computerized networks massaging systems have made the transmission of a request from one library to another a virtually instantaneous process. And the internet facilities offer wide accessibility of computerized data bases to all the users.

12.4.1 Definition

Cardyn Weaver, while defining Electronic Document Delivery (EDD), states that it "refers to the use of electronic technologies in support of the interlending activities of libraries. It includes the use of electronic methods by libraries both for the transmission of requests and for the physical transmission of the full-text document." The **EDD** service therefore can be referred to as "one part of a multi-stage process." It provides the flexibility to access the required material across the world from a number of sources.

The concept of **EDD** service suggests that it delivers on loan or supplies documents as physical objects. It provides access to information not immediately available in the library and information centre approached by the user. It involves a dynamic interaction among the following **three groups** :

(a) Library and information professional including library management.
(b) Information suppliers including even the publishers ; and
(c) End-users of libraries/information centres.

12.4.2. Benefits

It may be mentioned that the benefits of electronic request transmission accrue both to the borrowing an lending libraries. Through the use of electronic networks, the borrowing process is reduced to one step.

The unfilled requests are automatically referred from one potential lender to another without intervention by a third party. Borrowers will also receive computer-generated statistical reports on their borrowing activities.

For the lending library, the processing of filled requests remains virtually unchanged, because it has to check the availability and ask for its transmission.

Since holdings data is available online, fewer requests for unavailable items must be processed.

Transaction reports can be transmitted electronically rather than by mail. Statistical reports and billing information are generated by the computer system.

It eliminates the need for referral of unfilled requests, as it will automatically do the same.

12.4.3. Electronic Systems for ILL

For the delivery of **ILL** requests, the electronic system begins with the least sophisticated and reaches the most sophisticated form. These are categorized as follows in that order.

12.4.3.1 Teletype and Telefascimile

It is the oldest, the slowest, and least sophisticated forms of electronic request transmission. Telefacsimile, like teletype, is useful in request transmission primarily as a means of saving time in sending requests between cooperating libraries.

12.4.3.2. Electronic Mail Systems

These have displaced teletype as the major form of electronic communications between libraries. The use of e-mail for ILL transmission has proved to be less expensive than teletype, more flexible than telefacsimite, and as fast as telephone.

12.4.3.3. Online Circulation Systems

These have proved useful **ILL** mechanisms for multi-branch libraries or group of libraries using the same automated system. Online circulation system provides immediate information about the circulation states of a particular item, thereby reduces delays.

12.4.3.4. Online Union Catalogues

Online union catalogues could be simple systems, i.e. only the electronic versions of a union card catalogue. It could also be highly sophisticated system which provides users with an online ILL work form, automatic ranting of requests and many statistical reports.

12.4.4. Major Commercial EDD Services

The commercial EDD services can be broadly divided into the following three categories :

12.4.4.1. Collection based Services

These includes the following :

(i) British Library Document Supply Centre (BLDSC) ;
(ii) The Canadian Institute of Scientific and Technical Information (CISTI)
(iii) University Microfilms Inc. (UMI) ;
(iv) The Institute of Scientific Information (ISI); and
(v) Knight-Rider Information/ Uncover

12.4.4.2. Non-Collection based Services

(i) Online Computer Centre (OCLC);
(ii) Both Information and Data Service (BIDS);
(iii) Infotrieve ;
(iv) The Research Libraries Group (RLG);
(v) Silver-Platter Information

12.4.4.3. Specialized Collection based Services

(i) The Institute of Electrical and Electronic Engineers (IEEE) ;
(ii) Engineering Information Inc. ;
(iii) The Welding Institute (TWI) ;
(iv) ADONIS ;

(v) Royal Society of Chemistry ;

(vi) BIOSIS

From the above discussion, it can be stated that academic and research libraries are facing a number of problems with regard to the collection management. Their limited budgets stand in their way to cope with the increasing information demands of their users. In this context **EDD** service is one of the effective means to meet the situation. The recent network developments at the national and international lends including the internet have paved the way for initiating **EDD** services.

12.5. TRANSLATION SERVICES

12.5.1. Definition

The **Random House Dictionary** of the English Language defines the term 'translate' as "to turn (something written or spoken) form one language into another." It is thus an expression of a subjects in one language to another language.

12.5.2. Importance

In recent times science has not only become interdisciplinary in nature but also published in more languages than ever before from more number of countries. A researcher with the knowledge of one or two foreign languages cannot cope up with the exponential growth of literature published in so many languages. It is estimated that only about 50% of scientific and technical literature is published in English language every year, and about same amount in non-english languages. Russian has occupied the second position (about 20%) followed by German (about 8%), French and Japanese (5% each). Other languages such as Italian, Spanish, Portuguese, Chinese, Arabic are also steadily coming up the language table. This speaks about the importance of translations of scientific and technical literature as well as in some of the social sciences. No researcher can have access to all information in his subject without translation to overcome the language barrier.

12.5.3. Need

Most of the abstracting and indexing services as well as current awareness services, reviews etc. have been bringing current information to the notice of scientists, researchers, academicians, etc. in English language, thereby attempting to overcome the language barrier. For an English language abstracting service, say, Chemical Abstracts, all the abstracts are published in English irrespective of the language of the original publication. Similar is the case for a Russian language abstracting/indexing service, or the one in Chinese or Japanese. But, it may be mentioned that abstracts are not more than short summaries of the original publication. These abstracts indicate about the type of information available in the original publication, and do not become their substitute. This arises the need for translation of the original publication in foreign language into the language of he researcher.

12.5.4. Developments

In order to solve the problem of language barrier in the flow of information, the following developments have taken place :-

(i) Giving foreign language training to researchers.
(ii) Development of such tools as multilingual dictionaries and glossaries.
(iii) Machine translation or computer-aided translation.
(iv) Cover-to-cover translation of scientific journals, etc.
(v) Translation on customer demand.
(vi) Formation of translation pool.

12.5.5. Problems

Some of the problems in translation are as follows :

(i) Multiplicity of languages is the foremost problem. The scientists and researchers cannot learn all the languages in which scientific information is generated. Moreover, they do not have sufficient time to learn so many foreign languages.
(ii) Lack of standardized terminology in view of lack of multilingual dictionaries and glossaries.
(iii) Customer-oriented translation is very costly as well as time consuming.
(iv) Cover-to-cover translation of journals is also very expensive and time consuming.
(v) Computer-aided translation perhaps still cannot replace human translators.

However, despite these problems the importance and need of translation is realised among the researchers, academicians scientists, etc.

12.5.6 . Electronic translation

Translation is an area where the computer has immense possibilities. It has also been referred to as **Machine or Electronic Translation**. Research is being conducted in linguistics and it is being used with the help of multilingual/bilingual dictionaries on **CD-ROM**. The foreign language is input to the computer system in machine readable form. Each word received is compared with the dictionary of words already available in the computer. A French **CD-ROM**, for example, translates English documents into French or French documents into English because it is with a bilingual direction. But even the "best **CD-ROM** does not match the expert who often will turn a bewildereing electronic translation into one of common sense. "Electronic translations are only rough translations."

12.5.7. Translation pools

It has been realised that translation work by its very nature is extremely expensive and time consuming. This has prompted all those who are interested in

translation work to seek mutual help and cooperation at international level. This cooperation has resulted in what are often called translation pools or translation banks. Over the years, a number of agencies have been set up to help the scientists and researchers in their translation problems. Some of the important pools are given below :

12.5.7.1. The National Translation Centre NTC

The **NTC** is located at the John Carar library, Chicago. It is a voluntary project of the science and technology division of the special library association **(SLA)**. It was formally organised as the National Translation Centre in 1953 for translating the valuable research work by foreign scientists for the English speaking scientific community. It is a cooperative non-profit enterprise and its services and designed to eliminate costly duplication of translation effort. It acts as a national clearing house for information on translations. Many scientific and professional societies, government agencies, universities and other institutions in the **USA** and abroad deposit in the Centre the translations prepared by them. It also answers enquiries on the availability of translation from the Centre and elsewhere. Thus, it is the biggest pool of translations.

It has published the following indexes :

1. Author list of translations, 1953 and its supplements.
2. Bibliography of translations of Russian scientific and technical literature, 1954-56.
3. Translation monthly, 1955-58.
4. Technical translation, 1959-67.
5. Consolidated index of translations into English, 1969.

Since 1967, the **NTC** is publishing a semi-monthly under the title Translations Register-Index **(TR-1)**. The **TR-I** register section announces newly accessioned translations of the **NTC**. These are arrange by the **COSATI** classification and terminology.

Translations at the **NTC** are also available from the **BLDSC** on loan or in photocopy. In turn, translations of the **BLLD** are available from the **NTC**.

12.5.7.2. The International Translation Centre (ITC)

The ITC came into existence in 1960 under its former name the European Translation Centre, at Delft in Netherlands. It was set up under the guidance of OECD and supported by Western European countries and cooperation of many governments and agencies throughout the world.

Its **main objectives** are as follows :

- To act as referral centre in relation to the national centres and those organizations holding translations.
- To maintain a central information file.

- To perform a central distribution function and therefore hold a stock of translations.
- To arrange for the announcement and indexing of translations and keep a list of translations and agencies, etc.

ITC has been publishing **World Index of Scientific Translations** and **List of Translation Notified**. It has been replaced since 1978 by **World Tranindex**, published monthly in 10 issues per volume per year.

ITC also publishes jointly with BLDSC, Journals in Translation, giving a list of journals which are currently translated from cover-to-cover.

12.5.7.3. British Library Document Supply Centre (BLDSC)

BLDSC is an important depository of translations, and promotes a large number of translations with special emphasis on Russian literature. Its teacher publication **BLL Announcement Bulletin** has been replaced by the **British Reports Translations** and These **(BRTT)** to become a comprehensive bibliography of material falling within the category of grey literature. BLDSC also publishes Journals in Translation not only journals with cover-to-cover translation, but also list journals which consist of translations of articles collected from multiple sources. **BLDSC Review** is another quarterly publication which covers book translations.

12.5.7.4. Association of Special Libraries and Information Bureau (ASLIB)

ASLIB is another important agency that handles enquiries about translation and cooperates with the **BLDSC**. In 1951 the commonwealth index of unpublished translations was crated through the cooperation of the commonwealth countries. This is only a location tool. **ASLIB** also maintains an approved list of translations.

12.5.7.5. Transatom

It is a specialized information pool located at Brussels. It is created jointly by the **European Atomic Energy Committee (EURATOM),** and the **U.S. Atomic Energy Authority (USAEA)**with the objective of pooling their efforts in order to collect and disseminates information on translation of nuclear literature. It publishes since 1961, a monthly indexing journal **Transatom Bulletin**, which has been merged with **World Transindex**.

12.5.7.6. UNECSCO

At international level, **UNESCO** has under taken the translation of certain books of high literary value of each country into the languages of other countries. **UNESCO** is mainly concentrating in the fields of humanities and social sciences. It has been publishing Index Translationum since 1948, giving a list of translate books.

12.5.7.7. NISCAIR (formerly INSDOC)

In India **NISCAIR** (formerly **INSDOC**)has been offering translation services on request since it inception in 1952. The **National Science Library** located at **NISCAIR** is subscribing to cover-to-cover translated foreign periodicals. It has undertaken, in

a regular programme, cover-to-cover translation of Russian periodical. It maintains staff translators and a panel of part-time translators. In India, **NISCAIR** is responsible to maintain a copy of common wealth index, and it was its participating national member. It also cooperates with the **ITC** by sending to it lists of translations done at **NISCAIR**. It is bringing out a monthly bulletin **National Index of Translations**. Its translation services division has been regularly engaged in translation work from Chinese, French, German, Japanese, Russian, Spanish, etc. and get regular assignments.

12.5.8. Translation Tools/Directories

The translation pools or centres as discussed above answer the question of a translation of a specific document is readily available. But translation tools/ directories answer the question as to who can translate a document in a particular language. For this purpose, a number of directories are available. Some of the well-known directories, are :

1. Directory of Technical and Scientific Translators and Services by Patricia Millard.
2. Translators and Translation Services and Sources in Science and Technology, edited by F.E.Kaiser, 2nd ed. 1965.
3. Index Translation is another important international tool, by UNESCO, for humanities, brought out annually.
4. International Directory of Translators and Interpreters, edited by Bob Pond, 1967.
5. Roster of Indian Scientific and Technical Translators, by INSDOC (now-NISCAIR), 1978.

12.5.9. Other Tools

There are numerous bilingual and foreign language dictionaries and CD-ROMs available for use by the translators. For example, Languages of the World (CD-ROM) is a relatively inexpensive approach to translation, and such an ideal CD-ROM in a library with occasional translation of words enquiries. This CD-ROM has 18 dictionaries in 12 languages. There are many examples of such tools available.

12.5.10. Role of Library

The role of the library, in this scenario, is to have information about translation pools and centres, professional associations, government agencies, commercial publishers and their products and directories of translators and translation firms. The library should maintain those published sources on an up-to-date basis, to assist client. Finally, as appropriate, Marlin Sable suggests that library staff members (and/ or resource people who are available when needed) should be able either to translate, to abstract, or to make summaries of materials needed in English translation.

12.6. SUMMARY

Discussed about the various problems with regard to collection management which necessitated the document delivery service. The development and application of computer has made the transmission of requests and documents possible electronically and increased efficiency. Moretimes about the electronic system and major commercial EDD services. Explains also the need for translation service to remove the problem of language barrier, translation complay in this context.

In future, the role translation is bound to increase, because the world is growing smaller.

12.7. SELF-CHECK EXERCISES

1. Define document delivery service and discuss its need.
2. What is electronic document delivery service, how it has facilitated access to documents
3. Enumerate the ways in which the problem of language barrier can be tackled.
4. Discuss the reasons for building uptranslation pools.

12.8. GLOSSARY

1. Translation bank : It is cooperation at national and international level in the field of translation.
2. Translation tool : A reference source giving list of translation items.

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LESSON NO. 2.6 **AUTHOR : DR. SEWA SINGH**

Introduction Documentation and Information Centres : Information system and Networks

STRUCTURE

13.0. OBJECTIVES

After reading this lesson, the students will be able to :

i. know about the role of documentation and information centres.
ii. know about the emergence of documentation and information centres.
iii. identify different types of documentation and information centres.
iv. explain their functions and services.
v. know the information systems and their role in information management.
vi. explain the types of information systems.
vii. know the meaning and topologies of networks.

13.1. INTRODUCTION

After the Second World War 'the governments of various countries developed interest in scientific research, industrial development, technological growth, socio-economic development, etc. The researchers, scientists, engineers, planners, etc. needed, among other things, support from literature and other information sources. In order to fulfil their information requirements, the need for documentation and information services was realised. This gave Sixth to new types of documentation and information centres resulting in the development of information infrastructure. It comprises of various organisations, institutions, etc. which support the handling and delivery of information. This information centres, referral centres, information analysis .centres, etc. and they make the total information system of a country.

13.2. DOCUMENTATION AND INFORMATION CENTRES

13.2.1 Definition of Documentation Centre

It can be defined as an organization that performs these functions:

(i) selects, acquires, stores and retrieves specific documents in response to request from specialist users;
(ii) announces, abstracts, extracts, and indexes documents; and
(iii) disseminates documents in response to requests for documents or for their contents.

13.2.2 Definition of Information Centre

It is indeed what documentation centre stands for except that it places emphasis on information contained in the documents as a unit of service to the specialist users.

13.2.3 Need

The need for documentation and information centres can possibly be

explained as given below.

(i) Knowledge explosion after the Second World War led to the complexities in information generation, handling and use.

(ii) Due to pressure of time for research activities, and lack of adequate search skills, users could not scan the vast amount of literature.

(iii) Traditional library services could not meet effectively with the growing users needs for information rather than documents.

These factors, among others, contributed to the need for developing documentation and information centres which could provide services to users based on microdocuments.

13.2.4 Emergence of Documentation and Information Centres

There has been emergence of special libraries in the beginning of the twentieth century to provide information support for commercial enter-prises, research organizations, higher education, etc. After the Second World War these activities were further intensified and repanded to include innovative research processes and projects, research and development activities in science and technology, socio-economic programmes of the government, and so on. These activities led to the organization of documentation and information services through specialised documentation and information centres. In this way, new types of documentation and information centres began to evolve and take a definite shape.

It happened in the industrially developed countries to begin with. The documentation and information centres evolved from the special libraries. The major functions of the special libraries of collecting and storing documents and disseminating information were extended to the newly established documentation and information centres. In India also, these centres were mere extension of special libraries, where techniques and practices were extended and refined in these new type of centres.

With the development of scientific and industrial research, not only special libraries strengthened but documentation and information centres were also established in most of these research organizations. These documentation and information centres were set up in specialized subject fields, and started offering subject based documentation lists, current awareness lists, SDI services, and other new products. For this purpose subject specialists as documentation officers were employed who had sufficient skills and competencies for consolidation and repackaging services. The new breed of documentation officers would do, among others, analysis, synthesis, and evaluation of information and present the new service/product to the end users as required by them.

13.3.0 TYPES OF DOCUMENTATION AND INFORMATION CENTRES

Documentation and information centres can be grouped under three broad categories:

i. By specialised Interests : Include those institutions that cater to specialists in different subject areas of research;

ii. By Ownership : Include those institutions that are funded and run by the government agencies, or learned societies, or professional associations, etc;

iii. By Levels of Operation : Included those institutions that operate at global, regional, national, or local levels.

A brief description of these types of centres is given below, though some of them overlap these categories.

13.3.1 By Specialised Interest

These can be further sub-grouped as mentioned below:

3.1.1 Subject Fields

There are documentation and information centres devoted to such subject fields as sciences, social sciences, engineering, technology etc.

Examples

3.1.1.1 Science and Technology: National Institute of Science Communication and Information Resources (NISCAIR), New Delhi (formerly INSDOC).

3.1.1.2. Social Sciences: National Social Science Documentation Centre (NASSDOC) of ICSSR, New Delhi.

13.3.1.2. Mission-Oriented

It covers those documentation and information centres that are devoted to missions, sectors, etc. of national economy.

Examples

3.1.2. 1. Centre for Documentation on Rural Development, Hyderabad.

3.1.2.2. Defence Scientific Information and Documentation Centre (DESIDOC), Delhi.

13.3.1.3. Types of Materials

There are documentation and information centres devoted to particular types of materials such as patents, standards, reports, etc.

Examples :

3.1.3.1. National Technical Information Service, Virginia (USA) for reports.

3.1.3.2. Patents Information System, Nagpur.

3.1.3.3 International Translation Centre, Delft, Netharlands.

13.3.1.4. Kinds of Information

There are documentation and information centres dealing with

bibliographical information, industrial information, management information, etc.

Examples:

3.1.4.1. Bibliographical Information: NASSDOC, NISCAIR, etc.

3.1.4.2. Industrial Information: Small enterprises National Documentations centre (SENDOC), Hyderabad.

3.1.4.3 Management Information: National Informatics Centre (NIC), New Delhi.

13.3.2 By Ownership

These can be further sub-grouped as under:

13.3.2.1. Public Documentation/Information Centres

These centres are established by the government, funded by the government, and attached to some laboratories, etc.

Examples

3.2.1.1. Defence Scientific Information and Documentation Centre (DESIDOC) New Delhi attached with Defence R & D Organisation (DRDO).

3.2.1.2. National Institute of Science Communication and Information Resources (NISCAIR), New Delhi.

13.3.2.2. Semi-Public Documentation/Information Centres

These are established by learned bodies, professional societies, trade associations, etc.

Examples

3.2.2.1. Information centre for Iron and Steel, by Steel Authority of India Ltd. (SAIL), Ranchi.

3.2.2.2. National Information Centre for Textiles and Allied Subjects (NICTAS), by ATlRA, Ahmedabad.

13.3.2.3. Private Documentation/Information Centres

These are generally established by private business enterprises, commercial firms, etc., and therefore cater to the requirements of their parent organizations.

Examples

3.2.3.1. Institute of Scientific Information, Philadelphia, USA.

3.2.3.2. Tata Energy Research Institute, New Delhi.

13.3.3 By Levels of Operation

13.3.3.1 International Information Centres

These centres offer services on a world-wide basis.

Examples

3.3.1.1. International Patent Documentation. Centre (INPADOC), Vienna.

3.3.1.2. Trade Information Service, International Trade Centre, Geneva.

13.3.3.2. Regional Information Centres

These centres are established to foster collaboration and cooperation by countries belonging to a geographically contiguous region. They help in exchange of information among these countries with identical interests.

Examples

3.3.2.1 Commonwealth Regional Renewable Energy Resources Information Service, Melbourae, Australia.

3.3.2.2. SAARC Documentation Centre, NISCAIR, New Delhi.

13.3.3.3. National Documentation/Information Centres

These centres are quite comprehensive and wide is scope, and perform such functions as are useful to the country.

Examples.

3.3.3.1. Institute of Scientific and Technical Information, Chine, Beijing.

3.3.3.2. Bangladesh National Documentation Centre, Dhaka.

13.3.3.4. Local Documentation Centres

These centres are generally attached to individual organizations at local level. They perform such functions as to fulfil the information requirements of their users in the institute.

Examples

3.3.4.1. Inmost of the university libraries a documentation/Information unit is established to serve the users by offering personalised information services.

3.3.4.2. Most of the Research and Development (R&D) establishmens have set up their own documentation/information unis to cater to the local needs.

13.3.4 Functions and Services

As discussed above, there are so many types of documentation and information centres which perform different functions according to their nature, scope, area of coverage. A local documentation/information centre, for instance, has different set of functions limited to providing services for supporting the programmes of its present organization. For this purpose, the local documentation unit would select and acquire suitable materials, organize them for use, and serve to the users to meet their information needs. On the other hand, a national documentation/information centre would offer a variety of services at the national level. It would perform the functions of collection of documents, their processing, storage, retrieval, and dissemination, etc.

However, the following functions and activities are performed by docu-

mentation/ information centres.

13.3.4.1. Collection Development

One of the major functions of documentation and information centres is to develop an adequate and balanced collection of all types of documents based largely on the user needs.

13.3.4.2. Compilation of Union Catalogue

Compilation of union catalogue of periodicals, or theses, or conference proceedings, or theses, etc. is another important function. These union catalogues could be on the basis of entire country, regions, subjects, types of libraries, types.of documents, etc. These are useful as a tool for readily locating documents in the libraries.

13.3.4.3 Document Procurement

A documentation and information centre will be a principal agency for procurement of documents required by scientists. It can thus exploit the resources already available in the country, and resert to procurement of those documents, from foreign documentation centres, which are not available in the country. This ensures greater access to information resources.

13.3.4.4. Reprographic Facilities

These facilities in full range are usually provided by a documentation and information centre to its users in the country and even beyond.

13.3.4.5. Translation Services

Providing translation service on request from foreign languages, and for this purpose maintaining a panel of part-time translators is significant to achieve its objectives.

13.3.4.6. National Bibliographical Services

Various bibliographical services such as indexing services, abstracting services, bibliographies, etc. at the national level should be brought out so as to have comprehensive access to the literary output of the country.

13.3.4.7. Subject Bibliography

Regular and adhoc bibliographies on specific subjects are being prepared by the documentation and information centre for various purposes against request and in anticipation of demand.

13.3.4.8. Current Awareness Services

The provision of current awareness services (CAS) is usually the familiar pattern in the documentation/information centre. A CAS is generally brought out as a bare list of articles appearing in current journals being received in the centre.

13.3.4.9. Abstracting Services

In order to cover domestic as well as foreign literature, documenta-

tion/information centre should being out abstracting services. These services should be confined to specific fields for purposes of both curent awareness and retrospective search.

13.3.4.10. SDI Service

Providing SDI services is another function performed by documentation and information centre. These services are highly specialised and readily tailored to individual needs of scientists and scholars.

13.3.4.11. Data Banks/Data Centres

Plans should be worked out to create discipline-oriented databanks in specialised subjects. Similarly, data centres should be established to meet the needs of not only scientists and academic, But also of government organizations for storage and dissemination of socio-economic data.

13.3.4.12. Information Service for Industry

Industrial information centres need to offer efficient services to support the industrial research in a country to give a filling to industrial progress.

13.3.4.13. Information Analysis

In order to provide that information can help to solve the problems in industrial and technological fields the information has to be culled out, analysed in detail and served by the documentation/information centre. It can renew the state-of-the-art in specific fields as its function.

13.3.4.14. Referral Service

Providing referral service to users for unpublished information, and directing them to sources such as subject experts, institutions, data centres, etc. is another important function of a documentation/information centre. For this purpose it can also set up a referral centre within, where an inventory of all types of information sources in the country is maintained.

Thus it can organise its services either in response to the users requests or in anticipation of their demands.

13.4. INFORMATION SYSTEMS AND NETWORKS

13.4.1 Definition of Information System

An information system is one whose prime function is to transfer or transform information. According to B.C. Vickery: “An information system is an organisation of people, materials and machines that serves to facilitate the transfer of information from one person to another. Its function is social; to aid human communication.”

Jennifer Rowley defines information systems as : “The acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information by a microelectronics-based combination of computing and

telecommunications."

In another definition Rowley said, "Information systems means the collection, storage, processing, dissermination and use of information. It is not confined to hardware and software, but ackowledge the importance of man and goals he sets for this technology, the values employed in mating these choiers, the assessment criteria used to decide whether he is controlling and being enriched by it."

13.4.2 New Methods of Information Systems

Information system, so far as related to information management, have offered the new methods in the following areas:

13.4.2.1. Methods and tools for recording knowledge include computer storage media such as optical and magnetic dishs. Multimedia data bases, including that, graphics, video, animation and sound offer exciting storage opportunities which support the creation of a very different range of documents.

13.4.2.2. Methods of keeping records about activities are the objective of transaction processing systems, such as financial central and library management systems;

13.4.2.3. Methods of indexing documents and information, both in relation to the creation of printed indexes, and also access to the contents of computer based databases.

13.4.2.4. Methods of communicating knowledge including:

- e-mail systems;
- fax transmission systems;
- electronic journals;
- teleconferencing;
- data communication networks.

13.4.3 Types of Information Systems

Some of the types of information systems in organizations as given by Rowley can be as follows.

13.4.3.1. Transaction Processing Systems

These record data about events or transactions. These functions as data capture in relation to transactions; file processing transactions; and a printed report of the data.

13.4.3.2. Management Information Systems (MIS)

MIS support managers in making decisions, and produce reports for managerial use. MIS is suitable for support in decision-making situations where the information requirements can be determined in advance.

13.4.3.3. Decision Support Systems (DSS)

DSS have been developed to meet those situations where MIS donot

provide appropriate information. DSS are information systems that assist managers with unique, strategic decisions, in situations where risk with any error is high and a mistake can have serious consequences.

13.4.3.4. Executive Information Systems (EIS)

EIS are designed to assist top-level executives in the acquiSition and use of the information that is necessary to support them in their top management of the organization. Top managers need to be able to achieve a grasp of key issues, without being overloaded with detail.

13.4.3.5. Expert Systems (ES)

ES are computer systems which mbody some of the experience and specialized knowledge of an export, and thereby act as a consultant in a particular area.

13.4.3.6. Office Information Systems (OIS)

Office automation system support all other information systems by providing free from of data and information throughout the organization. Office information systems perform functions depending upon the nature of office such as text preparation, fax transmission, electronic data interchange, electronic filing, etc.

13.4.4 Information Systems and Users

The users may interact with an information system at work, at home an educational environment, in the bank, while travelling and soon. When there is more than one way to access information, user is likely to choose a computer-based system for access to a database or for managing information.

This is because it is :

i. cost effective, i.e. does not cost more than any other method;
ii. convenient, i.e. easily accessible and available;
iii. easy to use, i.e. instructions are clear;
iv. regarded as a more prestigious, economically attractive proposition;
v. entertaining;
vi. the way in which the user has always performed that procedure.

13.4.5 Information Systems and Society

According to Rowley, information systems are changing society. It will ultimately lead to a virtual society, where all communication is electronic, and processes such as teleworking, telelearning and teleconforencing, or even videocon ferencing, substitute for actual person-to-person contact.

13.4.5.1. Improved telecommunications will help form global village of people with similar interests, policies and objectives.

13.4.5.2. It is changing employment patterns with increased focus on

flexible working patterns, variety of different contractual arrangements between employees and employers.

13.4.5.3. It is a means of access to information. For effective use of information it is important that in the new society sight information be made available at the right time, in the right place, and at the right price.

13.4.5.4. In the new society as a result of information systems, information will be available for a prise making people information rich and information poor.

13.4.5.5. In the new environment it will be difficult to enforce appropriate
intellectual property and copyright protection with electronic documents.

13.4.5.7. Some data needs to be kept secure. Data protection is concerned
with the privacy of the individual. .

13.4.5.8. The market struggle in relation to standards for computer industry may act as a hinderance to the creation of a fully networked society.

13.4.5.8 Libraries have been interested in maintaining an archival record of information. Electronic documents pose many problems for the maintenance of an archival record. Electronic documents may be dynamic and changing documents, and the creation of a number of different versions is relatively easy. But it is difficult to decide which version constitutes the document.

13.5. NETWORKS

13.5.1 Meaning

Networks have been a part of society for a long time. A network can however, be defined as the interconnection of points (nodes) for the purpose of communicating information. The network is the mechanism that connects the points.

A computer network is a mechanism that connects computers so they can exchange or communicate digital information with one another. The effectiveness of IT depends upon the effectiveness of the tile communication networks.

13.5.2 Network 'T'opologies

The network topology is the way in which the communications links connect the equipment. Some of the common network topologies are given below.

13.5.2.1. Star Network Topology

Star networks have a single network mode at the centre, which is attached directly to a number of subscriber teminals. These. teminals cannot com-

municate directly with on another, and must communicate thought the central mode. This topology is appropriate when teminals need to access a central database.

13.5.2.2. Ring Network Topology

In ring networks all nodes are linked together on an equal basis. Data is input via any node, and communicated through the network.

13.5.2.3. Multi-drop Network Topology

These networks have many terminals hanging off links to a central node. Multiplexing is used to allow many terminals to there the same channel. This topology reduces the line costs by using a single branched circuit to connect all nodes. It is suitable for connecting terminals to a host computer.

13.5.2.4. Bus Network Topology

A bus network is a single end-to-end cable from which connections to the peripherals are made. All terminals are in direct contact with one another. This topology is suitable for Local Area Networks (LANs) because nodes can be plugged in or out depending upon need.

13.5.3 Network Applications

Some of the different types of network application are mentioned below.

13.5.3.1. Local Area Networks (LANs)

A Local Area Network (LAN) is a data communications network used to link together a number of computers, terminals, printers and backing storage devices over a limited geographical area. The limited area means that the high speed data transmission can be achieved. The primary objective is to share computing resources, such as processors, disk storage, printers and communications gateways to other networks.

13.5.3.2. Wide Area Networks (WANs)

Wide Area Networks (WANs) are those networks that cover a large geographic area spread over cities, countries, or even continents. A WAN consists of a number of interconnected switching nodes. A transmission from anyone device is routed through these internal nodes to the specified destination device. Their purpose is to provide a switching facility that will move the data from node to node until they reach this destination. They may use star, ring and bus topologies, LANs and WANs may be connected into one all embracing network. The Internet is a series of linked WANs.

13.5.3.3. Metropolitan Area Networks (MANs)

MAN is often used for a new high speed network technologies push the carrying capacity of the communication links into Gigabits per second (Gbps)

range. These are used over a larger area than a LAN. These frequently encompass a large city or several cities.

13.6. SUMMARY

Explains the need for the establishment of documentation and information centres, and the factors that contributed to' their emergence. These are considered as the information infrastructure, and as such these help to improve the capability of a country in information handling, service and utilization. Information being the essential resource for supporting national research and development activities, documentation and information centres serve the purpose of providing access to information to all scholars and scientists. Different types and levels of documentation and information centres have their role to serve the purpose of providing access to information through their services from collection development to reprographic facilities to CAS, SDl, etc.

Discusses the used for information systems so that the old methods of recording and processing knowledge could be made more efficient and effective. Various types of information systems are developed in different organizations depending upon their nature and needs. These have over the years, changed the complexion of the society making it a global village.

Networks though have been part of society, the recent developments have helped to exchange or communicate digital information. States how both LAN and WAN can make use of different network topologies": star network, ring network, multi-drop network, and bus network.

13.7. GLOSSARY

1. Database: It is an organized data stored in a computer which can be searched automatically.
2. Information Analysis Centre: It gathers information in well defined subject fields, analyses and evaluates information, and consolidates and repackages it.
3. Infrastructure: A set of institutions, organizations that supports the flow, handling and delivery of information from the generation to the user.
4. Network: A set of inter-related information centres and systems associated with communication facilities.
5. Performance: A major factor in determining the over all productivity of a system, performance is primarily tied to availability, through put, and response time.
6. System: In the broadest sense, a system is a set of components. The components can be entities or processes.

13.8 SELF-CHECK EXERCISE

1. State reasons for the need for documentation and information centres.
2. Write a brief note on the emergence of documentation and information centres.
3. Discuss various functions and services of documentation and information centres.
4. Differentiate between an MIS and a DSS.
5. Describe briefly various types of network.
6. Explain the impact of information systems on modern society.

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STRUCTURE

2.9.2 NSDL

2.9.3 CSIRE-Journals Consortium

2.10 Regional Centres

14.3. DESIDOC

14.3.1 Introduction

14.3.2 Objectives/Functions

14.3.3 Library

14.3.4 CAS

14.3.5 SDI

14.3.6 Internet and E-mail Services.

'14.3.7 Multim'edia Library

14.3.8 Reprographic Services

14.3.9 Patents Information Alert

14.3.10 Defence Reports Abstracts

14.3.11 State-of-the-Art Reports

14.3. 12 Translation Services

14.3.13 Union Catalogue of Periodicals

14.3. 14 Popular Science and Technology Series.

14.3.15 Technical Information

14.3.16 Human Resource Development

14.3.17 Technical Advice and Consultancy

14.3.18 Database Development

14.3.19 Publication Activities

14.4. NASSDOC

14.4.1 Introduction

14.4.2 Functions

14.4.3 Resource Centre

14.4.4 Services

14.4.5 Information Products

14.4.5.1 Union Catalogue of Social Science periodicals

14.4.5.2 Union List of Social Science Serials

14.4.5.3 Union Catalogue of CD-ROM Databases

14.4.5.4 Union Catalogue of Newspapers

14.4.5.5 Directory of Social Science Libraries

14.4.5.6 Directory of Social Science Research Institutions

14.4.5.7 Directory of Asian Social Science Research Institutes

14.0. OBJECTIVES

After reading this lesson, the candidates will be able to :

i. explain national-documentation/Information centres in India in the promotion of information services.

ii. discuss the functions being performed by Indian documentation/information centres.

iii. describe programmes and activities undertaken by such organizations in the coordination and development of information products and services.

iv. Identify the role played by NISCAIR, DESIDOC and NASSDOC.

14.1. INTRODUCTION

These days information is regarded as power With the technological advancement and increased .competition, the technological progress depends largely on the availability of the latest information. The demand for information services increased further with the rapid industrialization and exploitation of science and technology for the benefit of the society. The Government of a country also considers science and technology as a tool for socio-economic development of the country. In India also organized scientific research activity, started and got a further filling after independence. To sustain effectively such increased research and dr:.velopment activities and to build up the necessary infrastructure facilities, the need to strengthen documentation services was increasingly being fell. On the recommendations of various committees for the establishment of a national system of documentation and information services, the beginning was made

for the setting up of a documentation centre for providing full range of documentation services to the existing laboratories, scientific and' technological institutions, industries, universities, etc.

In the following paragraphs services and products of some of the documentation and information centres in India are discussed.

14.2. NATIONAL INSTITUTE OF SCIENCE COMMUNICATION AND INFORMATION RESOURCES (NISCAIR)

14.2.1 Introduction

NISCAIR came into existence with the merger of the National Institute of Science Communication (NISCOM) and the Indian National Scientific Documentation Centre (INSDOC) on 30 September 2002. Both NISCOM and INSDOC, as the premier institutes of the Council of Scientific and Industrial research (CSIR) provided excellent services to the scientific community over the years. INSDOC was established in 1952 to provide information support to the scientists and researchers of the country. INSDOC then had the objective or providing documentation, information and translation services at the national level. Over five decades of its existence, INSDOC has been fulfilling its basic objective and also expanding its role to modern areas such as library automation, design and development of databases, access to international information resources, human resource development, consultancy services, etc. Now the emphasis is on reaping the benefits of information technology to effectively serve the national and international community.

14.2.2 Objectives

The major functions of NISCAIR are :

(i) To provide formal linkages of communication among the scientific community in the form of research journals in different areas of S&T.

(ii) To disseminate S&T information to general public, particularly school students, and to inculcate interest in science among them.

(iii) To develop human resource in the field of science communication, library and information science, documentation, and S & T information management' systems and services.

(iv) To harness information technology applications in information management with particular reference to science communication and modernizing libraries.

(v) To ad as a facilitator in furthering the economic, social, industrial, scientific and commercial development by providing timely access to relevant ?.nd accurate information.

(vi) To collaborate with international institutions and agencies having objectives and goals similar to those of NISCAIR.

14.2.3 International Collaboration

NISCAIR : attaches great importance to mutual cooperation among various institutions in different countries.

2.3.1. As member of the International Federation for Information and Documentation (FID), it has been actively involved in the activities of FID. The headquarters for the FID Commission for Asia and Oceania is located at NISCAIR since January 1996. It also hosted the 49th FID conference and Congress in New Delhi during *11-11* October 1998.

2.3.2. NISCAIR is associated with the International Federation of Library Associations and Institutions (IFLA) which has been sponsoring candidates for training at NISCAIR.

2.3.3. The SAARC Documentation Centre has been working at NlSCAIR since January 1994 for exchanging S&T information among SAARC countries.

2.3.4. NISCAIR is the National centre of the ISSN International Centre for assigning ISSN members for serials published in India.

2.3.5. NISCAIR has been exchanging publications with over 150 institutions in 44 countries. .

2.3.6. Distinguished experts from other countries visit NISCAIR every year and vice-versa.

14.2.4 Dissemination of Information to SOT Community

NISCAIR provides communication links among members of the scientific community engaged in research in India and abroad through publication of 19 scholarly research journals of international repute. It covers all the major disciplines of science like Biologic.al services, chemical/physical sciences, and Library sciences. The NISCAIR Website (www.niscair.res.in) is regularly updated providing contents list and abstracts of all the periodicals.

14.2.5 Popularization of Science

Popularization of science among the masses is a major programme of NISCAIR. For creating awareness and scientific temper among youth, the Institute publishes three will-circulated popular science magazines - Science Reporter (English monthly), Vigyan Pragati (Hindi monthly), and Science Ki Duniya (Urdu quarterly). a also publishes popular books for this purpose in English and Hindi. It also brings out CS1R News (fortnightly) and CSIR Samacher (Monthly) covering R & D activities of CSIR laboratories.

14.2.6 Information Resources

For its products, services and activities, NISCAIR draws extensively from the rich information resources systematically consolidated and maintained over the years. The information resources can be briefly described as follows:

14.2.6.1 Wealth or India

It was started in 1942 as **Dictionary of Indian Raw Materials & Economic Products**. Now an encyclopaedic publication, **The Wealth of India,** describes the plant, animals and mineral resources of India. The entries for raw materials covered in 11 volumes (alongwith two supplements), while the parallel series on industrial products comprised nine parts. Wealth of India First Supplement Series is published to update information. All the volumes on raw materials are also available in CD format.

14.2.6.2 Bharat Ki Sampada

Launched in 1969, it is the updated version of **The Wealth of India-Raw Materials series.** So for 10 volumes and two supplements of this series have been brought out with updated and latest information regarding import and export, statistical data on area and production, etc.

14.2.6.3 National Science Library'

National Science Library (NSL) was set up at erstwhile INSDOC in 1964 with the basic objectives of building up a comprehensive collection of S & T publications in the country and offering services on a national scale. It aims at acquiring all important S & T publications, and foreign periodicals on CD-ROM or other electronic form. The library has more than 1,90,000 monographs and bound volumes of books and periodicals. NSL subscribes to almost all the Indian S & T periodicals, and about 3,500 foreign S & T periodicals are in electronic form.

The rich collection of NSL continues to support other activities of NISCAIR like preparation of Indian Science Abstracts, Document Supply Service; contents: Abstracts and Photocopy Service (CAPS); etc.

It also meets with the demand for books through interlibrary loan - services It also provides photocopy service to its users.

14.2.6.3.1. International Serials Data System

The ISDS Centre is operating from the NSL since 1985 for assigning ISSN to Indian serials.

14.2.6.3.2 NISCAIR Library, Pusa Campus

The Library has a collection of over 63,000 documents dealing with various aspects of S&T. It provides photocopy service, interlibrary loan service, document supply service, e-mail service about journals received everyday.

14.2.6.4 Raw Materials Herbarium and Museum (RMHD)

The Herbarium and Museum of Economic Raw Materials was set up in 1976 and became RHMD in 1984. It holds sample of economically important raw materials of plant, animal and mineral origin of India. It also acts as a repository of photographs, illustrations and transparencies of economic raw materials. It caters to the needs of

scientists, researchers, industries, students, and the public.

RMHD also provides consultancy services since January 1994. It also offers short-term training courses on Herbarium Techniques.

14.2.7 Information Products and Services

Some of the information products and services evelved over the years are desribed below.

14.2.7.1 Contents, Abstracts and Photocopy Service (CAPS)

This service has been introduced to fill the gap created by a sharp decline in the availability of foreign periodicals to Indian S & T community. This service is of great help to the scientists who do not have access to foreign periodicals. One can get contents of journals of one's choice on year by subscription. On browsing the contents, one can place order for abstracts and/ or photocopies of full articles, It is also available on diskette either as a textfile or as a database.

14.2.7.2 Indian Patents Database (INPAT)

INPAT in a bibliographic database providing information on about 51,000 patents granted in India from 1975 to 2002. This database includes information on Patent title; Applicant(s) and Inventor(s); Patent and Application Numbers; Application and Publication Dates; International Classification Code; and Country. .

14.2.7.3 Technical Information Services

New developments in Information technology and faster modes of global communication have brought changes in the approach of information service providers to their cheats. The increasing availability of online version of scientific journals and other information products has proved beneficial to researchers and information scientists. In view of the need for authentic information, NISCAIR suns specialized information services. These include;

(i) Medicinal and Aromatic Plants Information Services (MAPIS), with bimonthly (a) Medicinal and Aromatic Plants Abstracts (MAPA); and

(b) Patent information about Medicinal and Aromatic Plants published in database.

14.2.7.4 Bibliometric Services

The Bibliometric Services Division is engaged is carrying our bibliomatric analysis of research papers of individual scientists, institutions, etc. It also conducts searches from Journal Citation Reports for getting import factors. ,

14.2.7.5 Online Information Retrieval Service

NISCAIR helps scientists by providing a list of research papers in their field of interest by searching international CD-ROM database and online search of international databases. It has online access to databases available with DIALOG, EASYNET, ESA and

STN.

14.2.7.6 Translation Services

NISCAIR provides translations services in such foreign languages as Chinese, Czech, French, German, Japanese, Portuguese, Russian, Spanish. It also carries and interpretator assignments as well as consultersey services.

14.2.7.7 Document Procurement and Supply

It has been offering document copy supply right from 1952, and NISCAIR continued it fromits own library collection the resources of other S&T librarties in the country.

14.2.7.8. Abstracting Journals

It brings out at least two abstracting services.

(i) Medicinal and Aromatic Plants Abstracts (MAPA), provides comprehensive coverage of the world literature on medicinal and aromatic plants since' 1979. Each bimonthly issue contains about 600-700 information abstracts by scanning 600 journals from 55 countries as will as books, research reports, conference proceedings and patent services.

ii. Indian Science Abstracts (ISA) is a fortnightly service with abstracts of original scientific work appearing in S&T journals available in the National Science Library. It covers research papers, short communications, review and informative articles, conference & seminar proceedings, Indian patents, standards, theses, etc. Abstracts are classified according to UDC scheme. Each issue has Author, Keyword, Generic and Geographic Indexes. ISA on CD-ROM is an excellent replacement for hardcopy of ISA.

14.2.7.9 NUCSSI

NISCAIR has already published a National Union Catalogue of Scientific Serials in india (NUCSSI) in four volumes. It has been converted into a computerised database which is updated from time to time. It is a reliable source for document procurement and supply. NUCSSI on CD-ROM is a good product of NISCAIR.

14.2.7.10 Directory of Scientific Research Institutions in India

The fourth edition of this directory is being updated (third edition was published is 1994), and contents are being prepared on CD-ROM, and database is almost ready.

14.2.8 Human Resource Development (HRD)

NISCAIR organises several HRD programmes to train and prepare information, documentation and science communication professionals in meeting the challenges of the changing IT scenario. It conducts the following programmes:

i. Associateship in Information Science (AIS), a two-year course.

ii. Short-term training courses, particularly on 'Computer Applications'

in Library and Information Activities, is more popular.

iii. Attachment Training. Programmes are on-the-job training in information science, information management, information technology, etc.

iv. NISCAIR is the Programme Study Centre for some of the IGNOU sponsored programmes.

14.2.9 Recent Initiatives

Some of the recent initiatives are given below.

14.2.9.1 Traditional Knowledge Digital Library (TKDL)

India is endowed with immense traditional knowledge which is either undocumented or available in ancient literature and remains inaccessible. Documentation of this existing knowledge on various traditional systems of medicine has become imperative to safeguard it from being misused for grant of patents on non-patentable traditional knowledge NISCAIR in collaboration with the Department of Indian Systems of Medicine and Homeopathy (ISM&H) has created a TKDL in Ayurveda. The project would also soon cover Unani system, Yoga, Siddha system, etc.

14.2.9.2 National Science Digital Library (NSDL)

NSDL is envisaged to be set up during the Tenth Five Year Plan as the first of its land in the country. It will provide Internet access to digital resources of curriculum-related material in science and technology. It is thus targeting the students in Indian universities and colleges, particularly those in remote areas.

14.2.9.3 'CSIR Electronic Journals Consortium

It is a Tenth Five Year Plan project which aims at providing electronic access to about 4,500 worldwide S & T' periodicals. To begin with an agreement is signed with M/s Elsevier Science, one of the largest publisher of S&T journals for providing access to its, 1,700 S&T journals among all the laboratories/units/centres of CSIR, NISCAIR is the implementing agency for this consortium.

14.2.10 Regional Centres

Erstwhile INSDOC had setup three Regional Centres at Bangalore, Chennai and Kolkota have been closed in April 2002.

14.3 DEFENCE SCIENTIFIC INFORMATION AND DOCUMENTATION CENTRE (DESIDOC)

14.3.1 Introduction

DESIDOC was formed in 1967, out of Scientific Information Bureau, as a central agency of the Defence Research a Development organization (DRDO) for meeting the scientific information reqirements of the defence scientists. It became a self-accounting unit in 970 to function as one of the DRRO establishments. It has made significant contributions through its information and documentation services to the DRDO scientists. It also serves several other organizations of the Ministry of Defence. It is located in Metcalfe

House, Delhi.

14.3.2 Objectives/Functions

The main functions are given below.

(i) To cater to the information need of all the defence R&D. laboratories/ establishments int he country.

(ii) To collect, collate and disseminate expedetiously scientific and technical information. (on all aspects of defence science to those engaged in defence research and development.

(iii) To act as a repository for all technical and research reports of foreign/ Indian origin particularly those connected with defence science.

(iv) To maintain close liasion with NISCAIR and other similar information agencies in the country.

(v) To translate literature and reports from foreign languages and make it available to the scientists in defence R&D work.

14.3.3 Library

DESIDOC maintains a well-equipped library in the Defence sector. It has a collection of about 2,65,000 documents and provides document supply quite fast. .If a document is not available in its collection, it procures from outside sources. The library has computerised its housekeeping activities, with the hale of an integrated library management software called SUCHIKA.

14.3.4 Current Awareness Services (CAS)

This documentation centre provides fortnightly and monthly current awareness services to DRDO scientists and others. It includes Newspaper clipping Service, IEE/lEEE. contents, current connts in Military Science and Technology.

14.3.5 Selective Dissemination of Information (SDI)

Based on about ten CD-ROM databases available with it, DESIDOC provides to DRDO monthly SDl services.

14.3.6 Internet and E-mail Access

DESIDOC took initiative and started providing e-mail and Internet access to the DRDO Laboratories across the country through leased line connection from VSNL. At present about 25 dial up TCP/IP Internet connection are being monitored for, top management. ‘

They have established two leased line communication links between the Internet gateway of VSNL and South Block, and also between VSNL gatway and DRDO Headquarters to provides scientists/managers high speed access to Internet and its resources.

14.3.7 Multimedia Laboratory

The Centre has established a multimedia laboratory to provide multimedia authoring, designing and presentation facilities to the top management. Similarly, expertise has been established in image processing, CD-writing, audio-video designing, desktop CD publishing and multimedia CD ROM production.

14.3.8 Reprographic Services

The reprographic facilities developed at DESIDOC computer-based 35 mm multicolour slide making system, a high quality colour printers, videorecorders.

14.3.9 Patents Information Alert.

In view of the importance of patents as useful source of information, DESIDOC brings out an abstracting service Patents information Alert covering various foreign Indian patents.

14.3.10 Defence Reports Abstracts.

This bimontly service gives abstracts of the technical reports issued by NASA, NTIS, RAND (USA), DRIC (UK), and other organization.

14.3.11 State-of-the-Art Reports

Some of the state-of-the-art reports published include: Thermal Imaging systems, Defence R&D in coming decades, Remotely Piloted Vehicles, Reconnaissance Sensor System, Chinese Space Programme, etc.

14.3.12 Translation Services

DESIDOC has been translating important documents of defence interest," published in foreign languages other than English, for the benefit of the scientists working in the various DRDO laboratories/establishments and headquarters. He translations done-current and retrospective-are maintained in Translation Bank. Information regarding the availability of these translations is disseminated through an annual publication Transindex. The translations are done from such languages as Chinese, French, German, Japanese, Russian, etc. 3.13 Union Catalogue of Periodicals in the DRDO Libraries With the cooperation of the URDO libraries DESIDOC has brought out a Union Catalogue of Periodicals in, those libraries. The Catalogue lists about 6,000 titles, and the date is maintained in computer-readable form at DESIDOC. The Common Communication Format (CCF) and the CDS/ISIS software have been used for the database. The database can be searched by title, subject, publisher, and ISSN. The Union Catalogue is also available in printed form.

14.3.14 Popular Science and Technology Series

This series aims at promoting the understanding of the applications of science and technology to defence situations. The presentation of material is genera1ly in a non-technical style targeted at the students, the defence personnel and the public. The

text is supported by attractive illustrations.

14.3.15 Technical Information Centre (TIC)

For meeting day-to-day library/scientific information requirements of the Directorates in the DRDO Headquarters, a TIC has been organized. TIC acquires a good number of periodicals and has a good collection of reference and general books. It is backed by the resources of the Defence Science Library.

14.3.16. Human Resource Development

DESIDOC organizes short-term training programmes in various areas of documentation/information science. Intensive training programmes/workshops of about one week duration are also conducted on subjects as automation, online searching, e-mail and Internet use, multimedia development, etc.

14.3.17 Technical Advice and Consultancy

For organizing a scientific/technical library with the best collections, equipment, and other facilities, DESIDOC has adequate expertise to advise other agencies for this purpose.

14.3.18 Database Development

The following bibliographic databases have been developed and maintained by DESIDOC.

i. OPAC : It is bibliographic database of books, reports, conference proceedings available in Defence Science Library.

ii. SPIE/lEE/IEEE conference proceedings database.

iii. Journals articles database.

iv. Full text databases

v. Newspaper clippings database

vi. lEE/IEEE Contents database

14.3.19 Publication Activities

DESIDOC functions as the publication wing of DRDO and brings out a number of publications, covering current developments in Indian defence research and development.

14.4. NATIONAL SOCIAL SCIENCE DOCUMENTATION CENTRE (NASSDOC)

14.4.1 Introduction

NASSDOC was established as' Social Science Documentation Centre (SSDC) in 1978. It was granted the status of a national documentation centre in 1986 and renamed as the National Social Science Documentation Centre (NASSDOC). It was set up by ICSSR with an objective to provide library and information service support to social scientists, policy makers, academicians, government officials, people in business and industry, social science researchers, etc.

14.4.2 Functions

Some of the major functions of NASSDOC have been as mentioned below:

i. To build up a collection of reference materials.

ii. To provide reprographic services.

iii. To provide select bibliographies on request.

iv. To provide document supply services to scholars outside Delhi.

v. To provide bibliographical information about Indian Publication of the social sciences to international documentation agencies.

vi. To strive for bibliographical control over social science materials.

vii. To provide consultancy to social science institutions in setting up documentation and information centres.

14.4.3 Resource Centre

NASSDOC has developed a good resource centre with a well-stocked collection of PhD theses, research .project reports and working papers. It has a collection of 1,50,000 bach volumes of various social science periodicals. The library has a good collection of basis reference works in social sciences including subject dictionaries encyclopaedias, bibliographies, indexes abstracts, etc. It has a collection of about 5,000 unpublished Ph.D. theses and about 3000 research project reports. Microfilms/microfiche of some documents are also available in the resource centre.

14.4.4 Services

'NASSDOC provides the following services to its users to ensure access and optimum use of its resources. .

14.4.4.1 Interlibrary Loan/Document Delivery Service

An Inter-Library Resource Centre (ILRC) was set up to help provide interlibrary loan for material not available is the NASSDOC. Books and photo duplicated periodical articles may be requested through ILL. However, the service is restricted and not available to outstation scholars.

14.4.4.2 Reprographic Services

It provides single or multiple copies of articles/text from documents for scholars/institutions to be used for research purpose only.

14.4.4.3 Bibliographies on Demand

NASSDOC provides short bibliographies on a specific subject on demand on nominal charges. This service has proved quite popular among social scientists.

14.4.4.4 Reference Service

Reference queries in the field of social sciences are entertained via e-mail, telephone, fax, in person and through correspondence.

14.4.4.5 Referral Services

Incase of non-availability of material or insufficient material, research scholars are referred to other institutional libraries or individuals.

14.4.4.6 Consultancy Services.

Some Indian Institutions as well as international organizations have availed advice and guidance for proper development of documentation activity in their institutions.

14.4.5 Information Products

The folowing information products have been prepared by NASSDOC to fulfil 'its various programmes.

14.4.5.1 Union Catalogue of Social 'Science Periodicals

The first major project undertaken by NASSDOC in 1970 was the compilation of this union catalogue covering 31,125 serials in 550 libraries in the 17 states and two Union Territories, with a separate volume on the National Library, Calcutta. The union catalogue helps as a reference tool to locate a recognised volume of social science periodicals/ serials. It helps the participating libraries to share their serial resources with one another for the benefit of their patrons. The Union Catalogue has been revised and is now available in CD format also.

14.4.5.2 Union List of Social Science Periodicals/Serials

This Union List has been compiled for periodicals in Andhra Pradesh, Bombay, Delhi and Karantaka libraries. The Delhi list has been updated four times covering about 30 libraries, and is non available on floppies.

14.4.5.3 Union Catalogue of CD-ROM Databases of Social Science

This unique union catalogue gives details of about 200 databases available in 40 libraries and information centres in India.

14.4.5.4 Union Catalogue of Newspapers in Delhi Libraries

Based on a demand a separate union catalogue of Newspapers in Delhi Libraries was compiled in microform. It was subsequently revised to update the data of more number of newspapers.

14.4.5.5 Directory of Social Science Libraries and Information Centres in India

This directory covers 447 social science libraries and information centres attached to government agencies, research and training institutes under various ministries, universities and autonomous bodies, banks, industry, trade, etc. Each entry provides the address of library, e-mail, staff strength, election, budget, subject coverage, computerization details, services provided, etc. This product may enhance cooperation and resource sharing among there libraries.

14.4.5.6 Directory of Social Science Research and Training Institutions in India

It covers 450 social science institutions engaged in research and training in India. It contains details on areas of research, important achievements, special facilities, current research projects, publications, staff, library collections and services, relations with national and international organizations, address with telephone, fax, e-mail. It was updated in 1996.

14.4.5.7 Directory of Asian Social Science Research Institutes/organizations in India

This directory provides information on 42 teaching and research institutes on sian Studies in India. Each entry gives complete information about the institutes covered.

14.4.5.8 Mahatma Gandhi Bibliography

NASSDOC has compiled this bibliography as a multivolume set covering a wide variety of literature.

14.4.5.9 Annotated Indian Economic Bibliography

It has compiled this major project 'Annotated Bibliography on the Economic History of India, 1500-1947.' It covers all the materials in English language in four volumes.'

14.4.5.10 Retrospective Cumulative Index of Indian Social Science Periodicals

This project is being compiled as a series covering about 240 periodicals on different social science subjects. Already some volumes providing index to journals in Education, Anthropology, Psychology, Sociology, Social work, etc. have been published.

14.4.5.11 Area Studies Bibliographies

This project aims at bringing together all social science materials of research value pertaining to different states and Union Territories.

14.4.5.12 Language Bibliographies

This project is wider in prope. It covers research materials in all disciplines in social sciences in Indian regional languages.

14.4.5.13 Database of Research Project Reports

NASSDOC has created a bibliographic database of about 3,000 reports of research projects funded by ICSSR.

14.4.5.14 Database of PhD Dissertations

This bibliographic database has been created for about 5,000 Ph.D. dissertations acquired by NASSDOC. It gives information about name of researcher, topic of dissertation, year of award of Ph.D. degree, etc.

14.4.5.15 State-of-the-Art Reports

NASSDOC brings out periodically survey reports in the various disciplines of social sciences.

14.4.5.16 Abstracting Services

NASSDOC has been publishing the following abstracting journals:

i. **ICSSR Journal of Abstracts & Reviews : Economics :** Started in 1971, it is published four times a year.

ii. **ICSSR Journal of Abstracts & Reviews: Geography:** Initiated in 1975, it is published twice a year.

iii. **ICSSR Journal of Abstracts & Reviews: Political Science:** Started in 1974, it is published twice a year.

iv. **ICSSR Journal of Abstr:acts & Reviews: Sociology and Social Anthropology:** Started in 1972, it is published twice a year.

v. **Indian Psychological Abstracts:** Initiated in 1972, it is published four times a year.

vi. **ICSSR Research Abstracts Quarterly:** Started in 1971, published four time a year.

vii. **Indian Dissertation Abstracts:** Initiated in 1973, it ii's published quarterly.

14.4.5.17 National Register of Social Scientists In India

A computerized database on social scientists containing information about their academic background, research interests, research publications, etc. is being maintained on a continuous basis.

14.4.5.18 International Cooperation

i. NASSDOC is actively participating in UNESCO's Asia Pacific Information Network in Social Sciences (APINESS). While promoting APINESS activities in India, it is bringing cut the APINESS newsletter.

ii. NASSDOC is also represented in FID and IFLA.

14.4.5.19 Documentation Centre on Asian Studies (DOCAS)

DOCAS has been set up with the financial assistance of Japan government at NASSDOC to help the policy makers in Asia to establish bitter relations among the Asian countries. It has been performing various documentation activities.

14..5. SUMMARY

The need for information support in scientific and social service research, industrial development, planning and decision making led to the development of documentation and information centres in our country. Such national level centres as NISCAIR, NASSDOC and DESIDOC have helped to take care of the overall national needs for information services. To meet the growing demand for information services, these centres have designed and developed various products, programmes, services and databases.

14.6. GLOSSARY

1. Information Centre : An organization that collects, handles, processes and disseminates information the needy users.
2. Infrastructure : All institutional bodies holding information resources and facilities.

14.7. SELF-CHECK EXERCISES

1. Discuss the functions of a national documentation/information cen tre.
2. List out the objectives of NISCAIR.
3. Explain the in~ormation pro~ucts and services of NISCAIR.
4. Mention briefly the main functions of DESIDOC.
5. Discuss the services and products of DESIDOC.
6. Give briefly the functions of NASSDOC.
7. Explain the services and 'products of NASSDOC.

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LESSON NO. 2.8 **AUTHOR : DR. SEWA SINGH**

National Networks in India :

STRUCTURE

15.2.13.1 Creating Awareness
15.2.13.2 Metropolitan Networks
15.2.13.3 Institutional Networks
15.2.13.4 Accelerating Library Automation
15.2.14 Information Nodes

3. DELNET

15.3.1 Establishment
15.3.2 Objectives
15.3.3 Services
15.3.1.I ILL Online
15.3.3.2 Referral Services
15.3.3.3 Document Delivery Services
15.3.3.4 Retro-Conversion
15.3.3.5 Creation and Maintenance of Databases
15.3.3.6 Electronic Mail
15.3.3.7 Current Awareness and SDI Services
15.3.3.8 Training Programmes
15.3.3.9 Lectures and Workshops
15.3.4. Databases
15.3.4.1 Union Catalogue of Books: CCF
15.3.4.2 Union Catalogue of Books: MARC
15.3.4.3 Union List of Current Periodicals
15.3.4.4 Union Catalogue of Periodicals
15.3.4.5 Database of Periodical Articles
15.3.4.6 Specialists Data base
15.3.4.7 CD-ROM Database
15.3.4.8 Union List of Video Recordings
15.3.4.9 Union List of Sound Recordings
15.3.4.10 Union List of Newspapers
15.33.4.1 Union List of Serials of Management Libraries
15.3.4.12 Union Catalogue of Hindi Books
15.3.4.13 Database of Language Publications
15.3.4.14 Urdu Manuscripts Database
15.3.4.15 Database of Theses and Dissertations
15.3.4.16 DEVINSA Database
15.3.4.17 Serials: Petroleum and Natural Gas
15.3.4.18 Books in Print: New titles

15.0. OBJECTIVES

After reading this lesson, the candidates will be able to :

i. understand the need for INFLIBNET for resource sharing in libraries.
ii. know the efforts made for initiating action towards making individual library resources recessible at national level.
iii. identify the various information resources of INFLIBNET.
iv. know about the information products and services of INFLIBNET.
v. develop acquarictance with metropolitan city library networks like DELNET.
vi. know the role of DELNET in resource sharing at local level.

15.1. INTRODUCTION

National level networks have been developed in India to share the available resources in the country. INFLIBNET aims at linking all universities, colleges, R&D laboratories, etc. in the country by computer networks. The objective is to make all the available bibliographic and non-bibliographic resources in the country accessible to any researcher, scholar, academician, etc. It is major national programme towards modernization of libraries in the country. Thus all the national level networks aim to establish a mechanism for information transfer and access to scholarship.

Here only two of the national level networks, namely INFLIBNET and DELNET are discussed.

15.2. INFORMATION AND LIBRARY NETWORK (INFLIBNET)

15.2.1 Establishment

INFLIBNET was setup by the University Grants Commission (UGC) as an autonomous Inter-University Centre in 1991, with its Headquarters at Gujarat University, A humedo bad. It was felt that such a network is needed in India in

the context of computer and communication technologies making a great impact on the provision of library and information services.

15.2.2 Objectives

The main objectives of INFLIBNET are:

i. To evolve as a national network, interconnecting various libaries and information centres in the country and to Improve capability in information handling and service.

ii To provide reliable access to document collections of libraries by creating online Union catalogue of monographs, serials and non-book materials.

iii. To provide better access to bibliographic and numeric databases created indigenously.

iv. To establish gateways for online accessing of information.

v. To provide document delivery service by enriching information.

vi. To implement computerization of operations and services in the libraries and information centres in the country.

vii. To facilitate scientific communication amongst scientists, engineers, researchers, social scientists, academics, faculties and students through e-mail, bulletin board, file transfer, computer / audio/video conferencing.

viii. To create database of projects, institutions and specialists for providing online information service.

ix. To encourage cooperation among libraries, documentation and information centres in the country so that the resources can be posted for the benefit of helping the weaker resource centres.

x. To develop suitable professional manpower of appropriate enality to establish, manage and custain the INFLIBNET.

xi. To evolve standards, and uniform guidelines in techniques procedures, hardwares, softwares, services and so on, and promote adoption in actual practice by all libraries.

15.2.3 Services

INFLIBNET is multiple function/service network. It provides the following services:

152.3.1 Catalogue Based Services

i. Shared cataloguing of monographs, serials and non-book materials.

ii. Union catalogue of books, serials and non-book materials.

iii. Online catalogue access for shared cataloguing and location

identification.

iv. Catalogue production in card, book magnetic tape/floppy, optical (CD-ROM) form.

15.2.3.2 Database Services

i. Bibliographic database, services including retrospective, searches SDI, CAS services.

ii Database of non-bibliographic information such as on going and completed projects, institutions and speacialists.

Upto August 2019, the detail of Database services is :-

Database	No of Records	No of Universities
Books	1,41,27,338	179
Thesis	2,71,581	315
Current Serial	35,248	223
Serial Holdigs	59,164	89

15.2.3.3 Document Supply Service

i. Interlibrary loan request processing.

ii. Document delivery through fax or non-fax modes.

15.2.3.4 Collection Development

i. Acquisition and assistance in selection and procurement.

15.2.3.5 Communication Based Services

i. Referral services

ii. Electronic mail - transfer/receive message

iii. Bulletin board - view/update bulletin board

iv. Academic communication through electronic mail, bulletin board, file transfer, computer/audio/video conferencing.

15.2.3.6 Other Services

15.2.3.6.1. COPSAT Service: It provides contents of Periodicals in Science and Technology (COPSAT) in collaboration with Nation centre for Science Information, lISc, Bangalore, on monthly basis covering more than 4,000 top ranking journals.

15.2.3.6.2 Document Delivery Service : Researchers and others can obtain full text of journal papers covered in COPSAT.

15.2.3.6.3 OCLC's First Search: INFLIBNET provides this service to all its funded universities in a cost-effective manner.

15.2.4 Resources

As a cooperative venture the strength of resources of INFLIBNET depend upon its participants. It is envisaged 'to convert about 200 university li-

brary catalogues, 400 special libraries catalogues, the national library catalogue into machine readable form. It is further supported by collages, industries, public and private sector organizations.

15.2.4.1 University Catalogues

The collection of all the Indian university libraries put together are indeed the major national collection of documents. As such INFLIBNET considers this collection as its major national resource and can depend upon it. It has been estimated that an average of 4,000 to 6,000 volumes are added annually by university libraries. A manually prepared catalogue about the bibliographic informations is available at INFLIBNET.

15.2.4.2 R&D Library Catalogues

In India, a large number of R&D libraries have already computerized their cataloques and services. According to a survey, the average collection of an R&D library is betwc~n 30,000 to 40,000 volumes, with annual addition of about 400 to 500 volumes, and 300 to 500 current periodical titles.

15.2.4.3 National Library Catalogues

By virtue of Delivery of Books Act, the National Library at Kolkata receives all Indian publications in all languages. This Library prepares the national catalogues of these collections. in different languages which are now being comput.erized. These collections/catalogues also serve as a significant resource of the INFLIBNET.

15.2.4.4 National Union Catalogues

Both NASSDOC and NISCAIR (formerly INSDOC) have prepared fairly reliable and comprehe~sive union catalogues of social science periodicals and science and technology periodicals respectively. The union catalogue of NISCAIR all its can be accessed online through SIRNET, while the one by NASSDOC is also being made available in machine readable form.

15.2.4.5 Indigenous Databases

There are many o~.ganizations in India non which arer creating and maintaining indigenous databases of 'their respective collections in machine readable form. NISSAT (now closed) of the Department of Science and Technology, Govt of India, and its sectoral information centres have created data bases in different areas on which INFLIBNET can depend.

15.2.5 lNFLIBNET Library

It has its own fully automated library consisting of books and periodicals. It has been using SOUL software developed by INFLIBNET for automation. The library has a good number of databases and audiovisual materials. Some of the

on CD-ROM being subscribed to are;

15.2.5.1 CABSAC on CD : It is published by CAB international use is a bibliographic abstract database from and on South Asia about agriculture.

15.2.5.2 India Business Insight Database (IBID) : It provides extensive coverage of above 38,000 companies and more than 10,000 products.

15.2.5.3 VANS Electronic Library: It is a full text collection of leading Indian publications on CD-ROM published by vans Information Services, Mumbai. .

15.2.5.4 : Educational Resources Information Centre (ERIC) : database abstracts and indexes the US literature on education.

15.2.5.5 : Current Contents on Diskette: Social and Behavioural Sciences : This database is received weekly in floppies since 1999. It is useful for CAS.

15.2.5.6 : Dissertation Abstracts International: Humanities & Social Sciences: A comprehensive source covering about 1,000 universities around the world.

15.2.5.7 : Econ List: Economic Literature: It is produced by American Economic Association, covers international literature on economies.

15.2.5.8 : EMBASE Drugs & Pharmacology CD : It contains information pertinent to the speciality of drugs and phamacology.

15.2.5.9 : Inside Science: It is current awareness database containing table ofcontents of 13,000 highly used serials and 4,000 conference proceedings on all branches of science.

15.2.5.10 : Inside Social Science: It is a current awareness database containing able of contents of 7,000 most used serials and 4,000 conference proceedings covering all branches of social science and humanities.

15.2.5.11 Psy List: Psychological Literature: This database published by American Psychological Association covers publications in psychology and behavioural science.

15.2.5.12 SSCI : Social Science Citation Index: It is a multidisciplinary database, covering about 7,000 journals in the ISI database.

15.2.5.13 : Sociofile: Sociological Abstracts: Published by Sociological Abstracts Inc., contains abstracts from 2,300 journals and dissertations, etc.

2.5.14 :Unrich's On Disc : International Periodical Directory: It covers full citations of about 2,60,000 periodicals and serials.

Besides, there are many move CD-ROM data bases available at INFLIBNET.

15.2.6: Software for University Libraries (SOUL)

An integrated software for the automation of is-house functions of university libraries, called SOUL, has been developed. It has been well received by the university libraries, and 15 of them have already installed SOUL for comput-

erization purpose. There is demand from more libraries for its installation.

15.2.7 : Human Resource Development

INFLIBNET has been conducting training courses of short and long duration focusing on computer applications, workshops on practical aspects in use of computers to prepare the staff working in university libraries. It has also been conducting specialized training courses on advanced Networking, MARC 21, HTML and Web Design Techniques, E-learning, etc. Also training programmes have been conducted for the implementation of the SOUL software.

15.2.8 Consultancy

It provides consultancy service in the following areas:

i. Providing technical guidance for visitors
ii. Guidance to outside visitors
iii. Guidance to stddents
iv. Consultancy and guidance for automation.

15.2.9 Networking of University Libraries

All the university libraries funded under the networking programme are asked to subscribe to one of the network like ERNET /VSNL/ NICNET etc. It is planned to set up Wide Area Network UGCNET linking more than 170 universities and other academic institutions in the country.

15.2.10 National Conventions (CALIBER)

INFLIBNET has been organising National Convention on Automation of Libraries in Higher Education and Research Institutes (CALIBER) since 1994 when the first was held at Ahmedabad. It is organised every year on different themes related to library automation in different region's. ~

15.2.11 Database of Experts

INFLIBNET has created a Database of Experts from the universities and other institutions in various academic fields to provide full information about their work, papers published, unferences, seminars, books published, etc.

15.2.12 Access to INFLIBNET Databases

It has created databases of Books, Serials, Theses/ Dissertations, Experts in CDS/lSIS Unix Version. At present these databases can be searched in two modes. These are offline, for example a query via e-mail can be sent; and online to the INFLIBNET computer system.

15.2.13 Implications on Resource sharing

Some of these implications are summarized as follows:

15.2.13.1 Creating Awareness

Through various regional and national meetings with librarians, information scientists, academicians, teachers, etc. INFLIBNET has created some

awareness regarding sharing of library resources.

15.2.13.2 Metropolitan Networks

INFLIBNET has to collaborate with metropolitan city networks including DELNET, CALIBNET, MALIBNET, BONET etc.

15.2.13.3 Institutional Networks

Some institutions have developed their own networks for resource sharing. These include CSIR library network, lIT library network, DRDO library network, etc. and they be hooked up with INFLIBNET.

15.2.13.4 Accederating Library Automation

Realising the benefits of resource sharing, the university and academic libraries are computerizing their library services.

15.2.14 Information Nodes

The following nodes are to be created as future strategy :

i. College / Department Libraries
ii. University Libraries
iii. Documents Resource Centres
iv. Sectoral Information Centres
v. Regional Centres
vi. National Centre

15.2.15 Publication of Inflibnet :

1. Current Annual Report (April-March 31, 2013)
2. Current Newsletter Vol.22 Nov.1, Jan March 2015.

Further Information available in www.inflibnet.ac.in

15.3. DEVELOPING LIBRARY NETWORK (DELNET)

15.3.1 Establishment

These days sharing of resources is becoming more and more important and so is the interdependence on the resources of other libraries. With the use of computers in libraries they agreed to share their resources through network.

A meeting of libraries and academicians was held in 1988 for this purpose, and a committee bn Networking in Delhi Libraries was constituted and the basic equipments required were finalised. Thus came into being DELNET (Delhi Library Network) with 18 libraries in 1991. It was supported by NISSAT upto 1992 when it became a registered society. It has non been renamed as Developing Library Network (DELNET) and has extended its area of coverage beyond Delhi. Upto August 2019, Delnet has 6715 Libraries as its members, of which 286 Libraries are in Delhi; 6407 outside Delhi in 33 States and Union Territories and 22 overseas countries. For 2018-20, Dr. JayaKumar is the President and Dr. H.K. Kaul is the

Director of Delnet.

15.3.2 Objectives

i. To facilitate sharing of resources among the libraries through computerized r.etworking passing the way for optimum utilization of resources and better facilities for researchers and users.

ii. To aid participating libraries in cataloguing of documents.

iii. To avoid as far as possible the unnecessary duplication, reduction in foreign exchange expenditure and to coordinate efforts for suitable collection development. .

iv. To establish a referral centre to monitor and/or facilitate catalogue search and maintain a central online union catalogue of books, serials and other non-book materials of all the member libraries.

v. To facilitate access to information required by researchers and academicians.

vi. To reduce outlay on library holdings, particularly serials in various ways apart from ensuring optimum use through sharing.

vii. To help solving problems of locating the existing literature as it has *V* become difficult to physically more around to locate the desired materials.

viii. To facilitate and promote delivery of documents either manually or mechanically.

ix. To possess and maintain-mechanical equipment, for fast communication of information and delivery of electronic mail

x. To coordinate with other regional, national and international networks for mutual exchange of information and documents for the use of libraries.

15.3.3 Services

15.3.3.1 ILL Online

DELNET members can place their interlibrary 10aH requests through the ILL Online facility which is available on the union catalogue of books database.

15.3.3.2 Referral Services

DELNET maintains a referral centre that provides reference service to participating libraries. This centre also looks after the access to the central databases as well as international databases.

15.3.3.3 Document Delivery Services

DELNET provides the document delivery services to its users. This service is quite popular among them.

15.3.3.4 Retro-Conversion

It offers retro-conversion facilities to the libraries for the creation of MARG record.

15.3.3.5 Creation and Maintenance of Bibliographic Databases

DELNET helps the participating libraries in the creation of bibliographic databases. For making networking effective standard bibliographic data should be available in machine readable form to the libraries.

15.3.3.6 Electronic Mail

It provides E-mail facility to its member libraries which is introduced by the National Informatics Centre. This gives them access to both national and international E-mail users and to INTERNET users.

15.3.3.7 Current Awareness and SDI Services

DELNET provides CAS and SDI services to its users, among others, through its **Newsletter**. It is a forum for communication on the achievements.

15.3.3.8 Training Programmes

DELNET has been organizing training programmes on such topics as Web Page Designing, Internet Searching Strategies, Library Resources on the Internet, CD-ROM Networking, etc. .

15.3.3.9 Lectures and Workshops

Network specialists working'in different parts of the world are invited for lectures which are open to members and others. DELNET also from time to time organises national workshops, on library networking.

15.3.4 Data bases

In orderto provide efficient services to users in each member library.

DELNET has created the- following databases. .

15.3.4.1 Union Catalogue of Books: CCF

DELNET maintains an online union catalogue of books available in its member libraries. It is continuously updated and is growing in size. It can be accessed by author, title, subject, conference, series, etc. It has more than 2,66,61,564 bibliographic records.

15.3.4.2 Union Catalogue of Books: MARC format

DELNET has separately created a union catalogue of books for MARC records in view of the: international use of MARC.

15.3.4.3. Union List of Current Periodicals

It has created union lists of current periodicals in science and technology, social sciences, and humanities. This database is made available online with about 37,847 records DELNET users.

15.3.4.4 Union Catalogue of Periodicals

A union catalogue of periodicals containing full holdings data of the libraries is maintained by DELNET. Online records are available is 20,235.

15.3.4.5 Database of Periodical Articles

This database has details of articles which can be searched by author, title, subject, name of periodical, etc. This database having about 9,84,809 records in being extensively used.

15.3.4.6 Specialists Database

A database of Indian specialists having about 2,000 records at present, has been made available online to its member libraries. It contains complete information about eminent scientists, writers and educationists from all over the country. .

15.3.4.7 CD-ROM Database

A recently initiated bibliographic database of CD-ROMs available with member libraries is available online having about 22,234 records.

15.3.4.8 Union List of Video Recordings

This is a database of video cassettes available in DELNET member libraries. It has about 6,000 records in it so far.

15.3.4.9 Union List of Sound Recordings

This database contains a list of about 1025 audio cassettes records available in member libraries.

15.3.4.10 Union List of Newspapers

DELNET maintains a database of about 70 newspapers being subscribed by Delhi libraries. It contains such information as the newspaper title, editor, publication form, e-mail address, web address, etc.

15.3.4.11 Union List of Serials of Management Libraries

A database of about 800 serials in management libraries is created at DELN.ET with the aim of rationalising the periodicals.

15.3.4.12 Union Catalogue of Hindi Books

DELNET has created a database of about 3.000 records in Hindi.

15.3.4.13 Database of Language Publications

DELNET has created a sample database of language publications of various Indian and some foreign languages. This acts as a guideline for member libraries wanting to create their own databases.

15.3.4.14 Urdu Manuscripts Database

A database of Urdu manuscripts is made available online to member libraries. At present this database contains bibliographic details about 210 manu-

scripts on a variety of subjects.

15.3.4.15 Database of Theses and Dissertations

Recently a database containing about 70,293 records about theses and dissertations has been created and made available for use.

15.3.4.16 DEVINSA Database

DELNET provides access to DEVINSA database containing nearly 20,000 records for journal articles, books, unpublished materials on socio-economic issues on South-Asian countries.

15.3.4.17 Serials: Petroleum and Natural Gas

A recently started database about serials available Petroleum and Natural Gas Libraries in India is available online.

15.3.4.18 Books in Print: New titles from Indian Publishers

'This online database covering new titles published by Indian publishers has been launched since December 1996.

15.3.4.19 Database of E. books :

Delnet has 1613 recourds of E-Books.

15.3.5 Products

Some of the products of DELNET are as follows:

15.3.5.1 DELSIS

A powerful library networking software DELSIS (DELNET System for Information Services has been developed as an integrated modular system which supports DELNET online databases. DELSIS developed on BASIS plus handles not only Online Public Access Catalogue but also the tools for building up the union catalogues. It in a user-friendly and menu-driven package and contains many modules.

15.3.5.2 DEL-DOS

This product is based on DOS platform. It is used for creating MARC records of books published in English as well as for creating records in Indian languages. It is very s~mple and easy to use software.

15.3.5.3 DEL-PLUS

DEL-PLUS version I.0.0. has been realeased as an efficient tool for creating and retrieving bibliographic databases and catalogues. It can convert the simple PC into a powerful management information system. It is simple and easy to use. It is user-friendly with adequate window-menus for data inputting and search capabilities. It has the operational modules of (i) Data creation and maintenance, and (ii) Online Public, Access Catalogue (OPAC).

15.3.6 In Nutshell

The main features of DELNET in nutshell are:

i. A dial up model is provided for every library for information exchange and online access of union catalogue of book/ serials.

ii. Users of the system are provided with file transfer, e-mail and bulletin board services in the batch mode.

iii. Requests for interlibrary loan and other official communication is to be supported on e-mail.

Delnet Publications :

1. National Convention on Library & information, Networking (NACLIN) 2015.
2. Delnet Newsletter. Dec 2015
3. Directors Report 2015-16

15.3.7 Other Networks

Besides, there are other metropolitan city networks functioning in India. These include CALIBNET (for libraries in Kolkata), MALIBNET (for libraries in Channai), BONET (for libraries in Mumbai), PUNENET (for libraries in Pune), ADINET (for libraries in Ahmedabad), and so on. This upsurge in the member of library networks indicates their usefulness in resource sharing and automation of libraries.

15.4. SUMMARY

The exchange of information of resource sharing through network technology is expanding rapidly and various networks at national and metropolitan city level have emerged. Two such networks of significance in India are INFLIBNET and DELNET which propose to link all libraries in universities, colleges, R&D laboratorieis, and other institutional libraries. These networks aims at providing access to large information resources to used from any remote place in the country, while DELNET has spread its wings to outside countries also. Their major services include shared cataloguing, information access, retrieval and dissemination, document delivery access to databases, referral service, training, etc.

15.5. GLOSSARY

1.	Automation	:	It is the organization of machine handling of operations or activities requiring minimum human intervention.
2.	Database	:	Information stored on computer files and accessible via a remote terminal and telecommunications link.
3.	Document Delivery	:	It enables users to request copies of materials retained by online searches.

4.	Electronic Mail	:	The transfer of messages, litters, reports, etc. between individuals or organizations by the use of videotex, etc.
5.	Machine Readable	:	Information in a form that can be directly assimilated by computer input equipment.
6.	Network	:	A system of physically separate computers with telecommunication links, allowing the resources of each participant to be shred by each of the others.
7.	Node	:	A central switching point telecommunication networks.
8.	OPAC	:	An automated catalogue system stored in machine-readable form and accessed online by the library user.

15.6. SELF-CHECK EXERCISES

1. Explain the objectives of INFLIBNET.
2. Discuss the major servjces offered by INFLIBNET.
3. Describe the resources of INFLIBNET.
4. Mention the objection of DELNET.
5. Explain the main services DELNET offers to its members.
6. List out various datab~ses created by DELNET. ,
7. Mention the products of DELNET.
8. Discuss how INFLIBNET and DELNET have helped sharing of resources among the member libraries.

15.7. REFERENCES

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3. Kaul, H.K., DELNET : The First Operational Network in India, **DESIDOC Bulletin of Information Technology,** 16(2) Mar 1996 : 2334.
4. Kaul, H.K. **Information Networks in India: Problems and Prospects,** New Delhi: Virgo, 1992.
5. Ravichandra Rao, I.K., **Seminar on Library Networks in India,** Bangalore : Documentation Research and Training Centre and

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INFORMATION SYSTEMS AND NETWORKS AT INTERNATIONAL LEVEL

STRUCTURE

16.0. OBJECTIVES

After reading this lesson, the students will be able to:

* describe global information systems devoted to collection, processing and dissemination of information.
* explain programmes and activities of international information systems and networks. ;
* discuss the functions, services and products of some representative systems and networks such as OCLC, DIALOG, etc.

16.1. INTRODUCTION

There are many international documentation and information centres, information systems and networks for the library and information work. They help towards promotion, coordination and development of library and information services in different countries. In today's informations society their useful role is increasingly recognised in facilitating work in networking and resources sharing. Some of these international organizations like FID, IFLA and UNESCO are quite and have been providing opportunities for global programmes. These have been discussed elsewhere.

The use of computers for information processing has increased the possibilities of creating machine readable, databases, and the development of information systems at international level. These information systems invariably decentralize inputting of information, but computer-processing of information is centralized, whereas dissemination of informations is again decentralized.

Such international information systems as International Nuclear Information System (INIS) for nuclear services, AGRIS for agriculture, POPINS for population studies, SPINES for science Policy, DEVSIS for development science have been developed and functioning successfully. Similarly, there are computerized networks like OCLC, DIALOG, KNIGHT Rider, etc.

Some of these are discussed below.

16.2. UNISIST

1UNESCO established UNISIST (United Nations Information System in Science and Technology) in 1973 to promote work in documentation and information area. This work was further accelerated with the setting up of General Information Programme (PGI). It placed emphasis on scientific and technological information and the development of international network of information services.

16.2.1 Objectives

i. To improve the tools of system inter-connection.

ii. To strengthen institutional components of information transfer chain.

iii. To develop manpower for information work.

iv. To evolve national information policy by national governments.

v. To assist the member countries to develop capability in information handling and services.

16.2.2 Activities

Some of the major activities of PGI are given below.

i. To promote computer application to library and information activities in developing countries. By making use of computer and communication technologies help in network development and online facilities for sharing. and exchange of information.

ii. To develop and make available freely to developing countries userfriendly software packages such as CDS/ISIS. This has been a significant contribution.

iii. To develop a Regional Network for Exchange of Information and Expensive in Science and Technology in Asia and the pacific (ASTINFO). It helps to promote socio-economic development, regional cooperation, etc.

iv. To develop information manpower required for the establishment, management and operation of information system and services.

16.3. INIS (International Nuclear Information System)

Started in 1970, INIS is the world's leading information system in nuclear energy. It has 99 participating countries and 17 international rorganization which transmit data to INIS secretariat at Vienna.

16.3.1 Objectives

i. To collect data on peaceful uses of nuclear science and technology, merge into the database and make available to all members.

ii. To achieve maximum economy in time, money and effort by voiding duplication in handling nuclear science literature.

16.3.2 Features

* Each participating country transmits data of their bibliographical description in a standardized format.
* INIS has developed its own sources for subject indexing. The input received is checked and transformed into machine readable form.
* The output is magnetic tapes becomes part of database and is available for current literature search.
* It brings out INIS Automindex- a fortnightly abstracting journal with indexes. It is also received in the participating countries, and is used for providing CAS, SDI service, etc.
* India has been participating in this programme, and the library of BARC, Mumbai is the national centre.
* INIS also supplies non-conventional literature in microfiche form as well as CD-Rom.

16.4. AGRIS (International Information System on Agricultural Sciences and Technology)

Food and Agriculture Organisation (F AO) of the UN sponsored AGRIS which become operational in 1975 as a cooperative system. It has 125 countries and 20 international institutions as participating members.

16.4.1 Objectives

i. To create a comprehensive and current list of world-wide agriculture literature reflecting research results, food production, etc.

ii. To meet information needs by offering CAS, SDI, and other specialized services.

iii. To inter act with new and/ or existing secondary specialized information services so as to increase efficiency and eliminate unnecessary duplication.

16.4.2 Features

* Each participating country inputs in a standardized format.
* The output is produced in a monthly AGRINDEX and AGRIS magnetic tape with full bibliographical description.
* AGRIS database is being maintained online by many international data centres such as DIALOG, IAEA, etc.
* AGRIS database is available to national centres magnetic tapes. India has been participating in AGRIS programme with Agricultural Research Information Centre of ICAR as the national centre.
* Provides various CAS and SDI services.

16.5. GLOBAL COMPUTER NETWORKS

Networks of all types, from local to global, are operating in the world today. They are providing service support to all areas of human activity including the library services. With the development of computerized library networks, some of the networks became popular at the international level. Two of these facilities which provide a number of online services have discussed below.

16.5.1 OCLC (Online Computer Library Centre)

OCLC is a not-for-profit library computer service and research organization with international scope having more than 600 employes, with headquarters in Dublin, Ohio.

16.5.1.1 Establishment

OCLC was established in 1967 as Ohio college library centre with Frederick G.Kilgour as its first Director. It included libraries from academic, public and private sectors in its fold for sharing their resources. In 1973, its services were extended beyond the state of Ohio (USA), and by 1977, libraries in 38 states were participating in the OCLC system. Its scope was again extended in 1982 to include the participation of any library in the United States. Gradually, its service centres developed beyond the US and to the U.K. and Canada, which allowed other networks to affiliate with OCLC. Now it has 109 countries. It also meanwhile became Online computer Library Centre. Thus it grew from an Ohio-based consortium to an international resource sharing network.

16.5.1.2 Objectives

It had two chief objectives at the time of its establishment:

i. The increase of resources for education and research to faculty

and students of its member institutions, and.

ii. The deceleration of per student costs in its member colleges and universities.

iii. Thus the idea was develop a utility that would effectively support the librarians in the library services.

16.5.1.3 Membership

Upto Aug. 2014 OCLC has more than 16, 737 member librarians and users in the united states, Canada, Finland, Mexico, Sweden, The United Kingdom, West Germany, and Australia almost 109 countries.

16.5.1.4 Online Systems

OCLC has been organized into six sub systems which also reflect its functions components. These can be summarized as below:

	Function	**Operational stage**
1.	Cataloguing (shared)	operational fully
2.	Serials control	operational fully
3.	Interlibrary loan	operational fully
4.	Acquisitions	operational fully
5.	Circulation control	
6.	Information (subject) Retreival	operational fully

16.5.1.5 World cat

It is the OCLC online union catalogue developed as a result of the concept of shared cooperative cataloguing. It offers to scholars, researchers, librarians, and library users a new way of finding information. It is a globally networked, web-based information resource. It also supports millions of online interlibrary loans. In April 2004, it had completed 55 million records, and now adds a new record every 12 seconds. Thus, the database is the world's largest merged catalogue, consisting of English, German, French, Spanish, and other language records.

16.5.1.6 Interlibrary Loan Service

OCLC Interlibrary loan service has completed 25 years in 2004. This electronic message system enables libraries to communicate with each other to arrange for the sending of materials between them, thereby increasing access to library resources. It is supported by World Cat by meeting 136 million online ILL requests since 1979.

16.5.1.7 Regional Networks

There are about 18 regional networks that act as brokers for OCLC services, and provide the basic mechanism through which OCLC responds to cus-

tomer demands.

16.5.1.8 Catalogue Records/Data

Through OCLC-MARC subscription service it supplies the participating libraries the magnetic tapes of their online cataloguing for specified periods.

16.5.1.9 Participation in National Programmmmes

OCLC participates in several national level programmes such as CONSER, ARL/ NFAIS, etc.

i. The CONSER (conversion of serials) project in a cooperative effort initiated since 1975 for a machine-readable database of quality serials cataloguing information which may be used fox ordering, cataloguing, ILL, union lists, and bibliographies.

ii. The association of research librariesf national federation of abstracting and indexing services project (ARLfNFAIS) includes all serials titles converted by major abstracting and indexing services in the CONSER file.

iii. Another important contribution to the database is from the U.S. Newspaper programme with six national newspaper repositories entering bibliographic and holdings information on more than 30,000 newspapers.

iv. ARL is coordinating in cataloguing major microfilm sets and making bibliographic information available not only to OCLC members but to all libraries.

16.5.1.10 Serial control

Expenditure for serials subscription exceeds book budget for some library OCLC therefore integrated the subsystems with online access to uptodate, detailed holdings with location information for serials in their libraries and union list groups. It not only provided access to bibliographic information for serials catalogued in other libraries, but also helped in interlibrary loan.

16.5.1.11 Acquisitions

Introduced in 1980, the OCLC Acquisitions subsystem helps to automate the acquisitions and collection development process. It makes use of OCLCMARC subscription service tapes for selecting and evaluating library materials more effectively and free libraries from manual, repetitive tasks.

16.5.1.12 Research and Development

It has a research and development division for undertaking “mission oriented research that would yield information needed by every computerized library network for development.” OCLC carries out research according to Brown

in such areas as "maintaining its national and international online bibliograhic services, integrated local library systems, advanced communication and network systems, and information access." The staff in research and elsewhere in OCLC are involved 'as' a variety of activities in the 'identifies' arena.

16.5.1.13 Electronic Document Delivery

New electronic method of information transfer is being used for repackaging and distributing scientific or scholarly; annuals through online access.

16.5.1.13 Publications

OCLC has brought out many useful publications in the 'OCLC library, Information, and computer science series' from time to time.

16.5.1.14 OCLC Newsletter

This Newsletter has covered libraries, membership programmes, OCLC research initiative and OCLC online systems since 1967. Its first editor was Frederick G.Kilgour, and over the years, the **Newsletter's** content, frequency and format have adapted to the changing needs of OCLC and its membership.

16.5.1.15 Sum-up

OCLC operates an international computer network states Brown that "libraries use to acquire and catalog books, order custom-printed catalog cards, arrange interlibrary loans and maintain location information on library materials." It also provides local stand-alone computer systems for individual libraries. It also explores new technologies and concepts that can be developed . and/ or applied in cost-effective ways people to gain access to information.

The near future will see the further expansion of international dimension of OCLC.

16.6. DIALOG

16.6.1 Establishment

Realizing the importance of information in everyday human activity, and more so in research and development in science and technology, DIALOG was established as an interactive information retrieval system. Set up in 1966, DIALOG is the name given to an interactive, computer-based information retrieval language developed at the lockhead Polo Alto Research Laboratory. It consists of a series of computer programmes designed to make full use of direct access memory devices. It provides a user a fast and powerful means of identifying records within a file which satisfy a particular information need. It is the pioneer of online hosts/vendors in the world. Internet though was already created but its use was not so common place. Thus DIALOG was the first online information retrieval system launched as a commercial venture. In 1972 with the idea that

information matters- that it really can make a difference in the world. Today DIALOG is one of the largest providers of online databases delivering global news, business, scientific, medical, technical, and intellectual property information.

16.6.2 Development Application

The first application of DIALOG was made in 1967 when a DIALOG terminal was installed at the NASA Aimes Research centre, Moffett Field, California. The system was used to conduct online searches of the NASA document citation collection of 300,000 records. This database was stored in a mass storage device at lockhead polo Alto Research Lab and communication took place over a telephone line.

In the second phase of NASA application the terminal was now in Washington, and the file had grown to 450,000 records. It has the largest bibliographic collection of document citations searchable in an online, interactive mode. In the fIrst phase DIALOG was used mainly by engineers and scientists directly, while in the second phase it was mainly used by librarians.

16.6.3 Scope

DIALOG is the world's largest and most comprehensive provider of scientific information. It includes in its the following:

i. It has 450 separate databases containing more than 470 million documents.
ii. It covers scientific reports and publications from more than 150,000 journals.
iii. It includes 1.6 million dissertations.
iv. It has 2 million conference papers.

16.6.4. Precision

DIALOG databases are created with specialized indexing that enables the user to pinpoint exactly the type of information he needs without hunting through thousands of irrelevant articles. DIALOG search features, such as unique commands, output and reporting options, give the users the most powerful searching capability available.

16.6.5. Speed

DIALOG has the amazing speed of retrieving the results. It claims to be faster than other online information services, and continuously increases the information retrieval speed. The new Dialog link offers a faster Windows application to save time and money.

16.6.6 Reliability

DIALOG subjects and technical experts are always available for help-

ing users to create searches, setting up current awareness Alerts, and answering technical questions in a reliable manner.

16.6.7 Services

16.6.7.1. The Dialog Knowledge Centre

For many enterprises, information creates the foundations of their business. A right use of accurate, actionable information not only saves time and money, but also maximizes market potential. The Dialog Knowledge Centre is the premier source for information for the last 30 years or so. The Knowledge Centre has highly skilled individuals from a wide variety of professional backgrounds including biotechnology, business, law, library science and chemistry.

(i) This centre provides intelligent, reliable product and technical support.

(ii) It provides search assistance for the easiest to most difficult search queries.

(iii) It creates Alert for users from an easy to use online form.

(iv) It gives advice on time-efficient and cost-efficient search methods.

(v) It discusses and resolves technical issues.

It is a global information organisation with Knowledge Centres located around the world.

16.6.7.2. Dialog Custom Solutions

An easier way to access the information one is looking for, a team of custom solutions experts can harness the power of DIALOG content and send to users site. The custom solutions group helps to realize the benefits of a personalized DIALOG service.

i. It helps to know the power of searching without command language.

ii. It saves times and money to receiving consistent, focused results.

iii. It presences the integrity of the interface, existing look and feel.

In this way the possibilities are limitless, with DIALOG as information partner.

16.6.7.3 Datastar

It is the complete resource for pharmaceutical information. With its help one can search hundreds of databases included in Datastar's impressive collection of crucial pharmaceutical files. It will help to:

i. plan the implement new research projects more efficiently.

ii. identify evidence to support compound performance in chemical trials.

(iii) reduce product development cyc1es and avoid duplicating R & D efforts by making use of existing testing research.

(iv) synthesize and analyse information from Datastar's vast collection of pharmaceutical research.

(v) use Datastar's linking capability to extend e-journal collection, and thereby same time by gaining direct access to the publications needed.

16.6.7.4 CAS Linking (Chemical Abstracts)

This service offered by DIALOG makes easy to request and then purchase multiple corresponding full abstracts when searching CA search files which contain more than 16 million bibliographic references in chemistry and related subjects.

16.6.7.5 E-Journal Linking

It is the service that gives the ability to link to the full texts of more than 8,000 scientific, medical and technical e-journal published by more than 40 leading scientific publishers.

16.6.7.6 Document Delivery

DIALOG offers document delivery giving access an unparalleled array of articles and reports from over 1000 scholarly and professional journals. Documents are available in full form, either in high quality electronic format or as a photocopy. Source one allows to order full patent documents to be delivered by mail, fax or e-mail, etc.

16.6.7.7 DIALOG On Disc

DIALOG'S collection of On Disc databases provides the most important and reliable publications and reports for leading industries CD-ROM or the Internet. It provides opportunities for European company information, global scientific and technic.al research, industry, newspapers and journals, education and humanities news, u.S. and international business news, health and biomedical content, law and government development, and so on. The databases available from DIALOG On Disc are on a wide range of subject fields.

16.6.7.8 DIALOG News Edge

This service delivers right to the desktop the news that affects the users everyday. It provides the following:

i. Editor-reviewed news on the topic.s, industries and companies of internet.

ii. The ability to monitor breaking news throughout the day.

iii. A five year archive of stones from 10,000 global news and infor-

mation sources find information on the companies.

v. Stock and weather updates.

In view of its potential, DIALOG NewsEdge is truly a state-of-the-art business intelligence tool, offering content, convenient access and delivery, complete customization features and precision searching capabilities.

16.6.7.9 It can be stated from the above that DIALOG has been stated by **Forbes** as the "Best of the Web", and it has proved to be so during all these years. **Link-up Magazine** while evaluating various online information services reported that "The latest Web-based proprietary services, including Dialog have simplified, integrated search interfaces that are inspired by the intuitiveness of good web design." It was rightly stated by **Information Today** that "No company has been more important in the online business than Dialog."

16.7. SUMMARY

Information has been considered national and international resource and free flow of information always has been meaningful. Even then these is a wide gap between the information rich and the information poor. In order to bridge this gap widespread use of computer and communication technologies has been made, which have further helped to develop information systems, information networks at global level. The contribution of UNESCO and other bodies like FID, IFLA had been immense in this area. Global information systems like UNISIST, INIS, AGRIS are cooperation systems and services attempting universal control and dissemination. On the other hand OCLC and DIALOG are such online information retrieval systems and services that have changed the world.

16.8. SELF-CHECK EXERCISE

1. Discuss briefly the role of global information systems and networks in promoting free flow of information.
2. List the salient features of INIS.
3. Describe the objectives and features of AGRIS.
4. Explain the services offered by DIALOG.

16.9. GLOSSARY

1.	Global Information System	:	An international cooperative venture in terms of coverage of documents, services and products for saving money, time and effort.
2.	Compuer Network	:	A group of computers or computer systems linked

together with the help of communication links.

3. Information Centre : An organization that collects handles, processes and disseminates information to those who need.

4. Information Retrieval : Finding information contained as documents in a library or other collection selectively recalling recorded information.

5. Online Information Retrieval : It is information retrieval using a computer for searching and retrieving of selective information from the data hold on a computer database.

16.10. REFERENCES

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