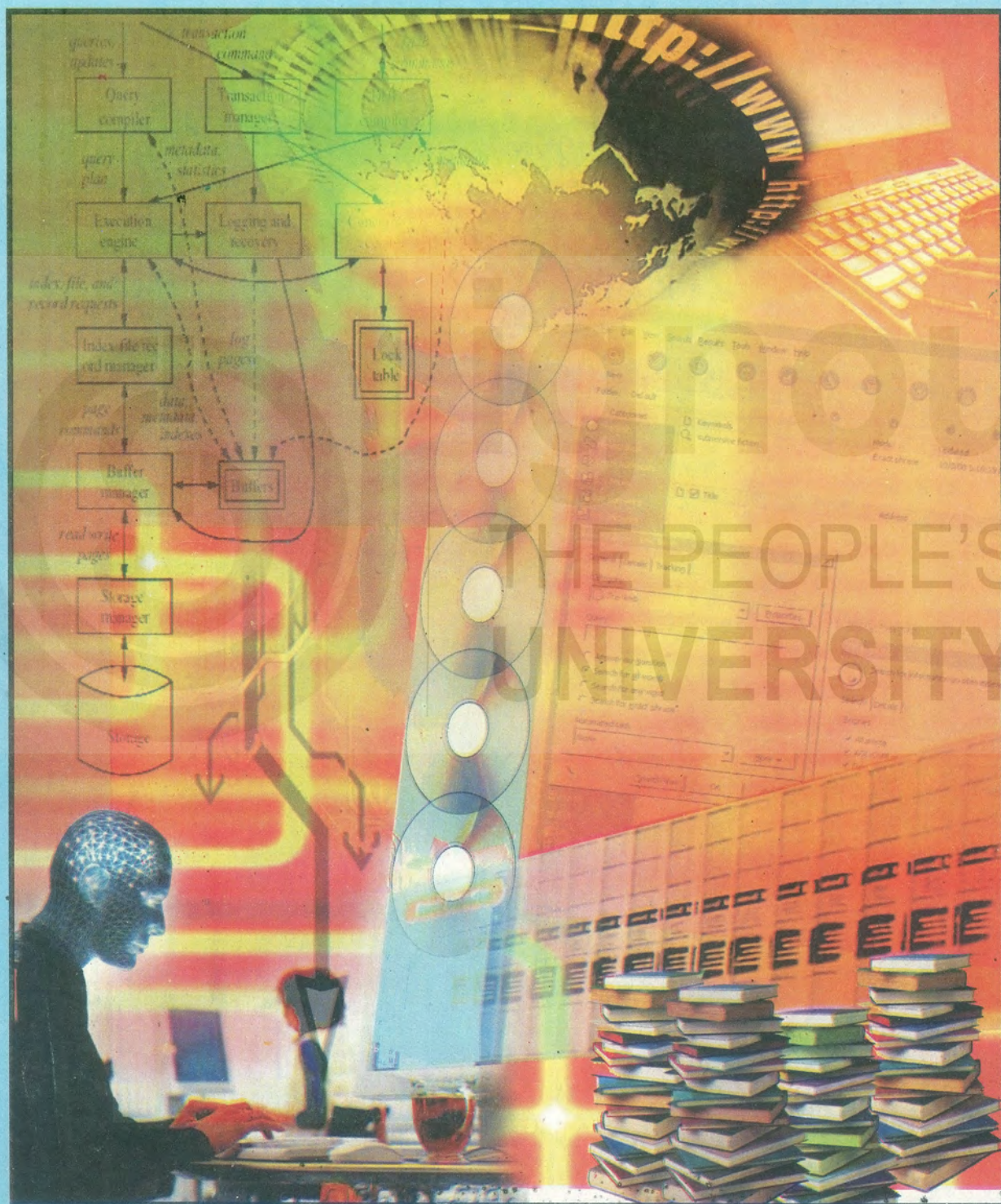


Master's Degree in Library and Information Science (MLIS)



“शिक्षा मानव को बन्धनों से मुक्त करती है और आज के युग में तो यह लोकतंत्रा की भावना का आधार भी है। जन्म तथा अन्य कारणों से उत्पन्न जाति एवं वर्गीकृत विषमताओं को दूर करते हुए मनुष्य को इन सबसे ऊपर उठाती है।”

- इन्दिरा गाँधी



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“Education is a liberating force, and in our age it is also a democratising force, cutting across the barriers of caste and class, smoothing out inequalities imposed by birth and other circumstances.”

- Indira Gandhi



BLOCK 1: DATABASE DESIGN AND MANAGEMENT

UNIT 1	: Database : Concept and Components	9
UNIT 2	: Data Structures, File Organisation and Physical Database Design	22
UNIT 3	: Database Management Systems	35
UNIT 4	: Database Searching	70

BLOCK 2: LIBRARY AUTOMATION

UNIT 5	: Housekeeping Operations	85
UNIT 6	: Software Packages: Features	118
UNIT 7	: Digitization: Concept, Need, Methods and Equipment	152

BLOCK 3: LIBRARY AND INFORMATION SERVICES

UNIT 8	: Alerting Services	191
UNIT 9	: Bibliographic Full Text Services	218
UNIT 10	: Document Delivery Services	247
UNIT 11	: Reference Services	263

BLOCK 4: INTERNET RESOURCES AND SERVICES

UNIT 12	: Basics of Internet	291
UNIT 13	: Search Engines	337
UNIT 14	: Internet Services	379
UNIT 15	: Internet Information Resources	437
UNIT 16	: Evaluation of Internet Resources	505

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December, 2008 (Reprint)

©Indira Gandhi National Open University, 2005

ISBN : 81-266-2078-1

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Further information on the Indira Gandhi National Open University courses may be obtained from the University's Office at Maidan Garhi, New Delhi-110 068

Printed and published on behalf of the Indira Gandhi National Open University, New Delhi, by Director, School of Social Sciences.

"Paper Used: Agrobased Environment Friendly"

Laser Typeset by : Rajshree Computers, V-166A, Bhagwati Vihar, Uttam Nagar, New Delhi-110059

Printed at A-One Offset Printers, 5/34 Kirti Nagar Indl. Area, New Delhi-110 015.

COURSE INTRODUCTION

MLIL-104 titled “Information Communication Technologies: Applications” has the objective of introducing the learners to the various aspects of ICT so as to enable them to apply these aspects in library and information services. After completing this course, they will acquire the competence to create databases of the holdings of their libraries as well as digitise the resources.

This course is divided into four Blocks. Each Block is further divided into four units each making a total of sixteen units. The Blocks are titled as:

- Block 1: Database Design and Management
- Block 2: Library Automation
- Block 3: Library and Information Services
- Block 4: Internet Resources and Services

Block-1 consists of Unit Nos. 1-4. It introduces you to the concept of database. There is a discussion on the difference between database and file structure and database design. You shall come to know the difference between traditional file structure and database design, its advantages over the former. The Block provides a detailed knowledge of database design and searching.

Block-2 is devoted to library automation. After knowing the importance of DBMS, designing and management of data ... databases in the first block, the second block introduces the learners to automate the activities performed in their libraries and digitise the resources. Unit-5 of the Block is on library housekeeping operations that have been defined as the activities undertaken in the library to provide services. These activities start from acquisition to processing of the documents and finally maintaining them. Such activities demand a lot of time and energy and are routine and repetitive in nature. Their automation is important to systematise the working; make the processes more effective and efficient; and relieve the staff from routine activities for providing innovative services. Unit – 6 provides a detailed discussion on library software packages, which includes their generations, functions, general requirements, and the implementation in libraries. Thereafter a number software packages, both Indian and foreign have been discussed at length in this Unit. Unit - 7 is on digitisation which is the most recent and important topic in library automation today. It is important to digitise the resources of the library in view of the trend today towards e-resources and digital libraries. This Unit describes the process, technology, planning and implementation of the process of digitisation. It would help the learners to undertake digitisation of their libraries in the future.

Unit Nos. 9-12 of Block-3 of the course elaborate on the services viz., Alerting Services, Bibliographic Full Text Services, Document Delivery Services, and Reference Services. CAS, SDI have been discussed in Alerting Services. Examples of various services and databases available have been given. Electronic News Clipping Services and Full Text Services have been explained. The concept, need and players involved in full text services have been described. Library consortia, e-print archives, and full - text resources available on the Internet also get proper mention here. Copyright, another important issue in full text resources has also been discussed. Unit-11 is on Reference Services; it covers digital reference service need and projects beside the reference process and query.

BLOCK 3

LIBRARY AND INFORMATION SERVICES

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UNIT 8 ALERTING SERVICES

Structure

- 8.0 Objectives
- 8.1 Introduction
- 8.2 Current Awareness Service
 - 8.2.1 Definitions and General Discussion
 - 8.2.2 Forms and Types of CAS
 - 8.2.3 News Filtering Services
 - 8.2.4 Modes of CAS Production
 - 8.2.5 Evaluation of CAS
- 8.3 Selective Dissemination of Information (SDI)
 - 8.3.1 Definitions of SDI
 - 8.3.2 Components and Operational Features of SDI
 - 8.3.3 Workflow in SDI Operation
 - 8.3.4 SDI Services: Some Examples
 - 8.3.5 SDI Using CD-ROM Databases
 - 8.3.6 Comparison of SDI and CAS
- 8.4 Electronic Clipping Services (ECS)
 - 8.4.1 Generalities of ECS
 - 8.4.2 Data Times: PASSPORT
 - 8.4.3 DIALOG: Alert Service
 - 8.4.4 Dow Jones: // CLIP
 - 8.4.5 NewsNet: NewsFlash
 - 8.4.6 Nexis: Eclipse
 - 8.4.7 ISI: Alerting Service
 - 8.4.8 Evaluation of Electronics News Clipping Service
- 8.5 New Directions for Alerting Services
- 8.6 Summary
- 8.7 Answers to Self Check Exercises
- 8.8 Keywords
- 8.9 References and Further Reading
- 8.10 List of URLs
- 8.11 Appendix (ICAR – CAS – Sample Page)

8.0 OBJECTIVES

After reading this unit you will be able to:

- understand the scope and method of offering Alerting Services like CAS, SDI and ECS;
- evaluate the services offered by a vendor or in an institution; and
- appreciate how Information Technology helps in offering alerting services easily and efficiently.

It may be noted that some portions of this Unit require a basic knowledge of Internet and web related concepts. It is recommended that after reading Units 12-16 of this course fully, you should re-read Units 8 and 9 once again to gain better understanding.

8.1 INTRODUCTION

Modern libraries have come a long way from being mere repositories of books and other publications, limiting themselves to just circulation of documents. The type of documents held by a library has also drastically changed: libraries now have a lot of documents in electronic form – ebooks, e-texts, ejournals, etc. Information proliferation or knowledge explosion adds to the librarians' problems. Therefore, in order to reach a large number of customers, to maximise the usage of documents among their customers, to satisfy the users' needs as much as possible and to bring the publications held by a library closer to its customers, a number of innovative services are being offered now. Such services may be broadly categorised into: Alerting Services, Bibliographic and Literature Search Services including Full text Services, Document Delivery Services, Reference and Referral Services, etc.

Information and Referral Services (IRS) is a generic umbrella service. It is a broad term denoting many similar services. Alerting Services, Bibliographic Services, Reference and Referral Services (that is, excepting document delivery) may be grouped under IRS. They are aimed at turning potential users into actual users of a library. Or, in converting existing dormant users into active users. In a public library, IRS may take the form of Community Information and Referral Service.

In academic and special libraries, IRS may take the form of Current Awareness Service, Selective Dissemination of Information, Electronic Clipping Service, etc. CAS, SDI, ECS – all these services have one thing in common: Current and recent information is the focus. As they are alerting in nature they are together called Alerting Services. An Alerting Service alerts an individual about some contemporary and current literature or information of relevance to him. Currency and relevancy are important issues. Alerting Services notify, inform, announce, signal, create awareness of, or forewarn the user about nascent, current information as it is generated and released for public consumption. Such information items need not necessarily be available readily in the library but accessible or otherwise procurable. At times, alerting services also concern themselves with future events, book releases, publications in progress, etc. Alerting services are offered to most customers throughout their membership as a continuous service. Alerting services are discussed in this Unit.

When a person starts a research project, it is necessary to conduct exhaustive and comprehensive literature search. The results would help him become up-to-date in the specific area from where he can do further work. This activity involves using several bibliographic and other databases – online, CD-ROM, or onsite. Bibliographic databases – abstracting & indexing databases, both online and CD-ROM versions, and the method of searching them have already been discussed in Unit 4. As Fulltext bibliographic databases are becoming available in larger measure nowadays, Unit 9 is devoted to Bibliographic Fulltext Database Services.

As a consequence of literature search, the user may want to read full texts of some of the articles noted in the literature search from journals or the conference proceedings, reports etc. In such cases the librarian provides Document Delivery services. This procurement aspect is discussed fully in Unit 10 of this course.

Many readers may come up frequently with information requests that cannot be met through sources within the library. In such cases the librarian tries to meet the query by referring the reader to external sources – be it an expert, research institution, library, or consultant. Such service is called referral service alternatively resources. The users may want to get answers to specific queries that can be satisfied through information contained in library publications. Such answering service is popularly called Reference Service this service is a continuous activity through out the lifetime of the library for all the users. Referral Services are closely related to Reference Services – they are the subject of study in Unit 11 of this course.

All the services mentioned above come under the broad topic: Library and Information Services – the subject matter of Units 8-11. Let us now discuss some Alerting Services.

Self-Check Exercise

1) List out three important services that can be called Alerting Services.

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

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

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8.2 CURRENT AWARENESS SERVICE

8.2.1 Definitions and General Discussion

Due to proliferation of the number of documents being published, not only in print media but in electronic media as well, the reader is unable to keep track of what is coming up in his areas of interest. Current awareness services seek to provide a solution to this problem. CAS is related to recent, nascent, current information available or accessible through the library to its customers. Let us look at a few definitions of CAS by eminent persons.

“The establishment of a system for reviewing immediately upon receipt, selecting information pertinent to the organization served, and recording individual items to be brought to the attention of those persons whose work they are related. It involves a combination of processes including the selection of pertinent information from periodicals, books, pamphlets, patents and reports and in fact anything of serious content that is received”

Straus: Library Science journal, 1971

“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. It is of the nature of a general appetizer. It endeavours to keep the clientele informed promptly of all nascent thought created in their fields of work and related fields.”

Dr. S.R. Ranganathan

“A current awareness service is the device of an information system through which the users of information can be informed promptly, as soon as possible after the publication but before absorption into comprehensive secondary sources, of current literature on a broad based subject field or on an area in which a group of persons are interested, and presented in a manner, volume, rhythm intended to facilitate or cultivate current approach to information. In the context of a library, the time limit should be after the receipt of the publications but well before the receipt of the secondary publications containing them.”

Prof. B. Guha

“One of the most important functions of an Information Service is to review publications immediately upon receipt, selecting information pertinent to the program of the organization served, and note individual items to be brought to the attention, by one means or the other, of those persons to whose work they are related”.

Atherton

We can observe that definitions given above do not agree with each other on all aspects. However, some common characteristics emerging out of these definitions are:

- Service has to be quick within reasonable period of delay
- Selection has to be made from different types of documents
- The service is generic
- Currency of information is important
- Developing current approach is the main goal of CAS

Therefore, we may mention the following as some of the objectives of CAS

- To keep users abreast of current trends and developments
- To save user's time in searching current information/literature
- To develop 'current' approach in users minds
- To promote quality research and avoiding duplication of efforts
- To aid creation of new ideas

It is useful to keep in mind some of the essential characteristics of CAS:

- CAS alerts the user about recent developments in his area of interest
- CAS does not answer any specific query
- CAS is a generic browsing tool at a very broad level
- CAS contents vary according to institution, customers, resources etc
- It is an announcement mechanism
- Form may be print or electronic
- It is aimed at a large group of users and not single person based
- No feedback or correction mechanism of input document selection criteria is present.
- Speed, currency and ease of use are important

While designing a CAS, we need to take care of the following factors:

- The requirements of the user group
- Type of literature to be included: books, journal articles, patents, standards, events, awards, publishing opportunities, reports, etc
- Degree of detail to be included: title, abstract, keywords, etc.
- Lay-out, presentation and fonts

Different Modes of CAS:

- CAS may be generated in-house
- CAS may be outsourced or purchased from readily available sources.

8.2.2 Forms or Types of CAS

Depending upon the library, customers, projects and resources, CAS may take several forms:

- a) List of Additions to the Library
- b) Current Awareness List / Bulletin

- c) Current Contents/ TOC Extracts
- d) Research in Progress
- e) Employment Opportunities
- f) Forthcoming Events List

We shall discuss each of these with some examples now.

a) List of Additions

The simplest of CAS forms is the traditional List of Additions. It is a listing of all items of reading materials acquired by the library during a specified recent period, say a week, fortnight or a month. The arrangement of entries could be under broad subject headings or by departments, projects, programs, etc. The idea is just to help user browse relevant parts of the list to get to know the recent additions.

While this can be manually prepared in a small library, regular and timely release of the List in a large library could be achieved easier using computer. Most library automation packages provide this as a routine facility. One needs to specify accession number or the date of acquisition from which the List has to be printed. These lists are customisable: you may choose the fields that have to be included. Report layout, fonts, colour, etc can be specified just once. Traditionally, Lists of Additions are printed on paper and distributed. Where readers are available on email or are available on a network, copies of Lists of Additions may be sent via email.

b) Current Awareness Lists or Bulletins

Libraries index articles from journals subscribed by them. Normally this is carried out as a part of the "Article Indexing" facility in library automation packages. A periodical listing of select articles from the index presented in some useful order becomes the Current Awareness List. The periodicity of the service, number of citations included, level of details (whether abstracts to be included or not), number of copies that will be distributed (if the output is paper print version) and other details have to be worked out.

When the output merely covers bibliographic data only, it is called Current Awareness List. If it also contains summaries or abstracts and or other information useful to users, then it is called Current Awareness Bulletin. Many libraries give unique names for such services. Central Drug Research Institute, Lucknow; National Institute of Rural development, Hyderabad; American Libraries in Indian Cities; are examples of libraries offering Current Awareness Lists/Bulletins.

Many library automation programs provide for generation of CAS listings easily. As in the case of List of Additions, the librarian can set up details for 'configuring' the CAS list once in the beginning. The arrangement within the list could be:

- 1) According to journal title
- 2) By broad subject headings
- 3) By departments/divisions/projects/programmes in the Institution
- 4) By classification scheme
- 5) A mixture of 1 to 4.

Depending upon the method of arrangement used for the order of the items in the Current Awareness List, one has to prepare standardised list of departments, programs, projects, subject headings, etc., for use in CAS programs.

Computers may be used in providing Current Awareness List or Bulletin in several ways. That this can be done as a part of the standard library automation package as has already

been mentioned. The List can be printed and distributed. If the users are reachable through email, then a soft copy can be sent by email. Some other methods/services are discussed below.

c) TOC Service or 'Current Contents' Lists

We shall discuss this topic under these sub-sections—

- i) TOC Service
- ii) CAS-TOC. Example – IIT Delhi
- iii) TOC from Journal Publisher's Website
 - Outsourcing TOC
 - JCC
- iv) Using Indexing and Abstracting Journal: Electronic Version
- v) TOC Service. Example: NCSI
- i) TOC Service.

In the case of a manual operation, this is a simple, quick and straightforward process. The library prepares a photocopy of the contents pages of journal issues as and when received at periodical intervals. Then, multiple sets are made for distribution to users. Here a selection of journal titles has to be made. Titles of articles may not be expressive of the topic dealt with- this is a drawback. It takes time to take photocopies of several pages and then making sets – the service may not be 'current' as expected. There is no search facility either by author or by subject keyword. Only browsing is possible. Colour to black and white conversion (while photocopying) may result in poor quality copies perhaps unusable at times. All these problems can be eliminated if the TOC service is carried out through use of computers.

ii) TOC Service: An Example of Hardcopy Service

The Central Library of Indian Institute of Technology, Delhi in co-operation with the Foundation for Innovation and Technology (in IIT Delhi), with the support of NISSAT, DSIR, Delhi brings out "Selective Technical Information" regularly. It is distributed to corporate customers in print form by post once a month or so. Essentially, it is a collection of photocopies of Table of Contents Pages of randomly selected journals and periodicals received in IIT Delhi library. There is no index of Journal titles showing specific issues covered. If present, it would be useful. Nearly 30-35 journal issues are covered each month. All areas of STM are chosen. Although the title of the service suggests that it is a "group based SDI service", it is in reality a CAS service based on TOC pages.

iii) TOC from Journal Publisher's Website

Current Awareness List may cover all types of documents but in special libraries, however, only journal articles are covered as a matter of routine. Most journal publishers make Table of Contents – and many even provide abstracts – on their websites. Publishers also allow the end user to register himself at the website. Thereafter, the user may request for a copy of TOC to be emailed to him regularly as and when new issue is released. This is a free service from most publishers.

The librarian can thus get TOC for several journals in which his users are interested as a one-time registration/request affair. Thereafter as and when new issues are available, the related TOC would be mailed to the librarian. He can set up automatic mechanisms in his email system to forward the same to different users based upon user's criteria.

If the users prefer to register them at publishers' websites, you may help and encourage them to do so. However, there are distinct advantages in librarian doing it on behalf of several users. One advantage is that you could avoid duplication of efforts – same TOC may be needed by many users from your library. Secondly, only one email arrives at your email server thus reducing data traffic relieving congestion in data flow. As an example,

iv) Outsourcing TOC service

When the publisher is a large publisher, you may choose to get TOC of several journal titles at one go. ScienceDirect of Elsevier is one such example. Going a step further, the library can opt for outsourcing the entire job of creating a database of all articles available in all currently subscribed journals to a third party. The third party (vendor) would provide the database with a powerful search facility whereby one can search the contents of the periodicals by Title, search titles of articles by key words, etc. One such service provider is Informatics India Limited, Bangalore.

v) Journal Custom Content (JCC)

Informatics offers a product called JCC, which stands for Journal Custom Content. The library can opt to include all or any of the titles procured by them, in JCC. If the original is already available in electronic form with the publisher then the bibliographic data including the abstracts are gathered directly by the vendor on his own. If the journal title is available only in paper form, then the librarian sends regularly, a photocopy of the contents pages as and when received in his library, to the vendor.

JCC goes beyond just being a current awareness tool. The unique feature of JCC service is that the database of articles is entirely yours even if you decide to discontinue the subscription. Abstracts are provided wherever available from the publisher. From there one can easily and seamlessly move on to the exact place on publisher's website giving access to full text of the article in question. Of course, this is possible only if the library has proper online access through a paid subscription either alone or through a consortium and has the necessary UserID and Password, etc.

All that the librarian needs to do in order to provide powerful CAS to his users is to subscribe to JCC service and send regularly photocopies of contents pages, wherever needed. If the users in the institution are on a local area network of the institution then every user can have direct access to the JCC database on the library server, from his desktop. The library can opt to host the database on the vendor's server computer, in which case every user in your institution can access the database using Internet browser like Internet Explorer or Netscape.

As an administrator, the librarian has to enter details of online access (IP address, UserID, Password, etc) into the vendor's system only once. When JCC is extended to a group of libraries under a consortium, then we have JCCC – Journal Gateway Customized Content for Consortium. Examples of several JCCC efforts are mentioned in next Unit under the sub-section on Consortia.

vi) Using Abstracting and Indexing Journals – Electronic Version

Another way in which Current Awareness Service may be provided is to subscribe to relevant abstracting and indexing services. A large number of specialised titles like Chemical Abstracts, Biological Abstracts, Current Contents, etc., available in print, CD-ROM, online and onsite versions. Licensing arrangements would permit many simultaneous direct online accesses to such databases for specified periods. Such services also lead on to full text access to original articles from publishers' websites. Based on this SDI, CAS and other services may be offered.

vii) TOC Service: An Example of ETOC: Softcopy

Email delivery of Table of Contents (ETOC) is a service provided by National Center for Science Information. It is derived from latest Current Contents issues brought out by Institute for Scientific Information, Philadelphia, USA, downloaded by NCSI via ftp. It delivers every week, by email, content pages along with abstracts of journals identified by the user in advance. It is restricted to users within the IISc campus.

The ETOC users can enroll themselves for the service through the web by selecting the journal titles of their choice. The enrollment form is received via email and a copy is sent to user as confirmation. A profile is created for the user by assigning a profile number. The form gives the journal titles available for selection. Every week, the CC issues are downloaded from ISI ftp site. All the records are downloaded using 'CCWin' a program supplied by ISI. This downloaded file is transferred to a Linux machine and processed using a C program which has been developed in-house. As there are 210 users, a batch processing of the files is done by creating inverted files for journals. Then they are compared with the user profiles of the users and the output is obtained. The output is emailed to user. The user can modify his profile at any time. He can select a maximum of ten journal titles.

You may observe that the ETOC service offered by NCSI, Bangalore is likely to be confused as SDI rather than CAS. However, there is no specific query of the user that is being matched. Only generalised output based on selected journal titles is given. Hence it is an example of CAS only.

d) Research in Progress

In academic and S&T institutions, scientists would like to keep a watch over current research in progress elsewhere in their chosen areas of interest. News about research projects, their interim findings, experts involved, would be very useful. This information can be culled out from leading periodicals and newsletters and distributed in the form of a newsletter.

Many organisations like National Aerospace Laboratories in Bangalore, National Chemical Laboratory in Pune, Central Drug Research Institute in Lucknow offer such services. If this service has to be offered in-house, then a database of useful items has to be created with report generation facility. Alternatively, such services may be bought out.

For instance, a website called Projects Monitor provides details of all pharma projects in progress. A librarian attached to a pharma industry may subscribe to get online access to this Projects database. It may be noted that CAS is not limited to technical articles but may also be for trade, business and commerce related topics.

e) Employment Information Newsletter

In institutions of higher learning, final year students would like to be constantly informed about suitable employment opportunities. Newsletter giving information about corporate companies coming for campus interviews, job opportunities, links to jobs-related websites like naukri.com, jobsahead.com, etc, may be compiled and distributed. The institution's intranet is the best place to host this information.

f) Forthcoming Events List

A list of forthcoming events like seminars, symposia, workshops, and conferences in areas of interest to the users of the library could be compiled. Such a service would help scientist present papers, meet peers and get publicity for their work. Data may be culled out from relevant journals, society newsletters, and websites offering specialised services for events, like: <http://www.papersinvited.com>. NISSAT publishes a bimonthly directory of forthcoming events as a priced publication.

Events Listing: An Example of ICAR Service

Indian Council of Agricultural research, New Delhi brings out a semi-monthly current awareness service called 'Directory of Seminars Symposia, Workshops in Agriculture and Allied Sciences'. A sample page from this bulletin from No 32, July-December 2003 is given in Appendix. This service is aimed at all the HRD and training departments, scientists, heads of research divisions, etc to identify training opportunities for their staff. It may be observed that complete information about each event including phone, fax, email, venue, eligibility criteria (target audience) to attend the event are all given. At the end of the directory, there is an index of subjects covered by the events. Nearly 150

events are included in each issue. They are arranged chronologically by month then the date of the event.

Suggestions to improve this CAS bulletin:

- Timely release—as the contents are very time sensitive
- Inclusion of index by venue
- Enlarging scope to exhibitions, round tables, conferences
- Enlarging the scope to include events outside the sponsorship of ICAR
- Inclusion of a list of explanation of abbreviations and acronyms.

8.2.3 News Filtering Services

Apart from technical articles from learned periodicals, users require 'news' that they can use in their day-to-day work. Table-8.1 shows that different types of users requiring different types of news.

Table 8.1: Users and their News Requirements

S.No.	User	News Requirements
1	Competitive Intelligence Professional	New entrants to the field Changes in competitors personnel New technologies & their impact
2	Sales Person	Current activities of competitors News on customers
3	Engineers	Info on vendors Info on competitive products

A lot of news is generated in printed newspapers, newsletters, electronic news wires, magazines, trade journals, etc. Some companies called News Aggregators routinely gather and scan all news and supply only what the end-user needs – highly selected and filtered. Such services are called Filtered News Services. Reuters, Desktop Data, PointCast, Dow Jones are some examples of such companies. In India, we have <http://www.securities.com>. Vans Communications (Now bought over by Friday Corporation) that offer news-based services.

One of the ways of offering tailor-made News filtering services is to do it yourself. However, this is a formidable task considering the vastness of news sources, and resources available to libraries. Therefore, libraries subscribing to news filtering services and outsourcing is the norm. In a way the approach is also outsourcing the work of providing news filtering service.

One might think of five different sources of news-based services:

- a) Individual websites of newspapers and newsletters
- b) Popular portals like Yahoo, Sify, Rediff, Lycos, etc
- c) Google News Alerting Service
- d) News Aggregators – fee based
- e) Traditional database vendors offering news services as a part of database search services (Dialog, STN, Lexis, etc)

These sources are discussed below:

a) **Individual Newspaper Websites**

It is common knowledge that almost all leading newspapers of any significance provide current news free of charge on their own websites. The library can provide a page for such important links in their Home Page on the Intranet or Internet. Readers can access a single place, which takes them to newspapers of their interest. Specialised news wires, trade newsletters, etc may be similarly hyper - linked. Many newspapers provide search and access facility for archival collection as well.

Using RSS Feeds

The approach of scanning newspapers websites, though simple, has a number of drawbacks. One has to open several websites, locate specific news items, download and read them. This is highly time- consuming and frustrating. This becomes a real problem as many newspaper Home pages contain lots of images, short movie clips, etc, and this takes time to download. Same news may be repeated in many sites. Poor Internet connection poses its own problems.

Recently, a technology called RSS Feed has become available to overcome the above-mentioned shortcomings. Many websites offering news items also provide what is called an RSS feed. New Indian Express is one such Indian newspaper providing RSS Feeds. RSS Feed is an xml file. This file has an URL (address of the page on the website). At the end-user's PC, he has to install a small program generally called RSS Aggregator. Many RSS readers (aggregators) are available for free download and Amphetadesk is one of them. After installing Amphetadesk and invoking it, one has to enter the URL of the XML page in this program. Thereafter, Amphetadesk automatically downloads frequently the XML page (RSS Feed). We will then get on our desktop the latest news brought to us regularly every three hours. If we have entered five news channels then we would have five sets of news items. All of them have the URL of the actual news item plus a short abstract. In this way, one can get himself updated easily with latest news from newspapers of his interest. Several sites give directories of available RSS Feeds. www.feedster.com is an directory example of the site www.disobey.com that provides Amphetadesk also gives its own long list of several thousand RSS feeds. RSS Feeds are also called Channels. There is a provision to display constantly updated news pages on your website using this technology.

b) **Popular Portals Offering News Free**

Many websites like Yahoo, Rediff, Sify, Lycos, etc., provide news on their Home Pages. Usually, there is a provision to select subjects of personal interest like politics, entertainment, health, astrology, etc. to provide for such selection, the home page is suitably modified to match users needs. However, these services are too generic in nature and do not meet the technical or work related needs.

c) **Google News Alerting Service**

The Search Engine Google provides a news alerting service free of charge. In Feb 2004, it was in Beta testing Stage. The website address is: news.google.com

One of the four major component databases in Google is News. News items are gathered automatically from all over the world from news generating sites – newspapers, newsletters, news wires, etc. Without human intervention, they are classified and categorised into appropriate subject groups. Updating of news is continuous throughout. News as captured is made available immediately, showing when it was added (e.g., “30 minutes ago”). You may use all facilities of Google regular search including Boolean operators, field based searching, limiting by language, etc.

To begin with, you have to register yourself for News Alert service; the process is simple – just enter your name and email address and confirm to Google when you are asked to do so via an introductory mail from Google. Thereafter conduct a search in News. When the results are satisfactory, that search query has to be entered in Google alert. You may

specify whether you need the alerting once a day by email or as and when the news is added to Google database. You can specify the source (journal/newspaper). Thereafter fresh updates meeting your query come to your mailbox regularly.

It is worthwhile to remember that Google allows search facilities like:

- Limiting by language, country
- Term truncation
- Search for synonyms
- Use of Boolean operators, parenthesis, phrase search
- Searching in title, text portions, etc.
- Limiting by source of the news

As an example of use of this facility the experience of the Virtual Information Centre at ICICI Knowledge Park, Hyderabad may be mentioned. Here, the library tracks all news on "ICICI Knowledge Park" if it appears in the title of a news item in any Indian news source. Google searches 90 Indian news sources and sends a daily mail giving the link plus a short abstract, whenever there is a hit/match. It is impossible to subscribe to 90 newspapers; thus it saves cost. The service is extremely fast - the alert is available within minutes of release on the Net. And the service is free.

d) News Aggregators providing Services for a Fee

A number of companies provide fee-based news filtering services. PointCast, Dow Jones, Desktop Data, Reuters are some examples. These are enterprise-based systems. They are very costly. Only big companies can afford and provide it for their several branches upon proper licensing. Knight-Ridder and Scoop are services that allow filtering based on end-user-controlled searches. Others like Clarinet, Netscape provide for selection categories from pre-sorted set of news categories.

All the fee-based filtering agencies claim to "deliver filtered news directly to the end-user". Here delivery may be through fax, email, or on a specially supplied computer terminal directly connected to the vendors computer system by a leased connection. Filtering may be achieved via broad selection of pre-ordered categories or through user-driven search, queries formulated using sophisticated Boolean logic. The end-user is usually an institution like a corporate body, university and not an individual.

The librarian evaluates the news filtering services available from several competing agencies and selects the agency to order on India. www.securities.com provides similar news filtering services. One can choose as many categories as needed (countries, industry segments, corporate entities to be watched) and pay accordingly. In the case of Bloomberg and Reuters special terminals and leased line connectivity are needed. The librarian procures the service, installs software and hardware, monitors the users and their usage, and attends to problems, if any. He also attends to terminal/monitor connectivity problems, data updating routines, etc. This is more of a liaison work. An example of a fee based news aggregator – Moreover Technologies- is given below.

Moreover Technologies. (www.moreover.com)

Moreover Technologies launched in September 2003 is the first real-time weblog search tool for the enterprise. The product harvests information from over 75,000 hand selected, business-critical weblogs in real-time and enables corporate users to gain access to the high value news, commentary and consumer opinion that resides within weblogs. Moreover Technologies assigns each blog a ranking that corresponds to the reliability, integrity and caliber of the blog. Products of Moreover include ci-builder, ci-watch and Alerts.

ci-builder offers an easy and affordable way to provide the organisation with highly targeted real-time news and information by providing the tools to create and customise multiple, tailored news needs. This is for companies needing the ultimate news management tool. The service is delivered to corporate portals, Intranets.

'ci-watch' provides live headline links on any company, topic, or industry, delivered continuously and automatically to your portal, intranet or website. This is for companies who wish to receive high quality, real-time targeted news and information.

e) **Traditional Database Vendors Offering News as a Part of their Services**

Several traditional database vendors like Dialog, Nexis, Dow Jones, Reuters and others offer news databases as a part of their service. Their query language and search procedures provide for perfected search strategies to be saved. Such saved search strategies (queries) may be executed on small sets of updated records in a database or a set of database files. In such instances, they become tailor-made SDI service. Nowadays, they are called Electronic Clipping Services. This is discussed in some detail in a separate section in view of their importance.

8.2.4 Modes of CAS Production

Current Awareness Service products and services may be generated either in-house or outsourced to external agencies.

a) **In-house Generation**

In-house generation of CAS involves performing all tasks relating to the CAS by the library staff themselves using internal resources and machinery. When these are produced using computers, apart from computer systems, LAN connectivity, software, training, high-end data storage systems are all needed. In-house generation puts a lot of responsibility on the library. But it makes the library self-reliant; staff gains first hand experience and expertise. Special local requirements can be taken care of easily and quickly. Requests for changes in specifications can be met and the production can be made dynamically effective. List of Additions and Content Pages reproduction are easy to manage locally. In CAS, selection and location of literature items of relevance to user groups is a specialist's job and library staff is better at it.

Most of the CAS products require a central master database of bibliographic records to be established. This has to be constantly updated. Indexing using a thesaurus involves technical competency of the Library Staff. This part of the job is difficult for outside agency to handle. Some software packages for CAS are listed in Table-8.2.

Table 8.2: List of Some Software Packages for CAS Applications

S. No.	Package	Vendor/Supplier
1)	Basis	Information Dimension Inc
2)	BRS/Search	BRS software Products
3)	CAIRS	Leatherhead Food Research Association
4)	ORBIT	Maxwell Online Inc
5)	STATUS	Harwell Computer Power
6)	TINLIB	Information Made Easy Limited
7)	BOOKSHELF	Logical Choice
8)	DATFKEX	DATAFLEX
9)	EXTRACT	Software Solution
10)	PROCITE	Personal Bibliographic Software Inc

b) Outsourcing CAS Activity

There are two distinct situations where CAS may be done better by external agency.

- i) Where outside agency produces or partly produces a CAS product
- ii) Where, instead of (or in addition to) using in-house database, an external database (either online, CD-ROM or onsite) is used.

In the case of (i) above, an external agency is used when library has inadequate staff, or they do not have sufficient knowledge; or when the work involved is so huge, that outsourcing would be beneficial. In the case of (ii), several ready-made databases are available with database vendors like Dialog, STN, and BRS etc. Some advantages using online databases for CAS work are:

- 1) Comprehensive collection of data
- 2) Automatic updating by vendor
- 3) Easy and quick searching facilities
- 4) Duplication avoidance when multiple files are used
- 5) Ability to download data records and incorporate them into local database
- 6) Ability to handle graphics, formulas, trademarks, etc.

8.2.5 Evaluation of CAS

In order to find out whether the money spent on CAS activity is worth the expenditure, some kind of evaluation of the usage, usefulness and effectiveness is required.

Usage refers to how many people use the service and how frequently, Usefulness means whether users find contents of relevance to their work as indicated by their coming back to library for further reference. Effectiveness denotes whether as a result of CAS products, saving of users time is seen whether their productivity enhances, and other relevant aspects.

Some questions that may be asked while evaluating computer-based CAS services are given below:

- i) Is the coverage comprehensive?
- ii) Is the database updated regularly and frequently?
- iii) Is the cost of the whole service reasonable?
- iv) Is the user-interface user friendly, easy to use, easy to learn, etc?
- v) Can one handle non-text (graphics) matter easily?
- vi) Can the output be formatted in different ways?

Besides these general questions, individual services call for specific questions as well. For example, if there is a CAS on Forthcoming Events, then following questions become relevant:

- i) Are the entries relevant?
- ii) Is the bulletin released with enough time to benefit by it?
- iii) Are the contact addresses and phone numbers reliable and correct?
- iv) Does it give info on cancelled or postponed events?
- v) Does it provide indexes to location (venue), subject, sponsor, etc

We have assumed that a print version of the Bulletin is distributed. Answers obtained must be analysed for taking corrective action to improve the product.

Self Check Exercise

- 2) Enumerate various services that can be grouped under CAS. Describe how TOC service may be provided using computers in a library.
- 3) Explain briefly how RSS Feeds may be used to provide news based alerting service.

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

ii) Compare your answers with answers given at the end of the Unit

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8.3 SELECTIVE DISSEMINATION OF INFORMATION (SDI)

Nearly two millennia ago, the Roman Stoic philosopher Seneca wrote, "What is the use of having countless books and libraries, whose titles their owners can scarcely read through in a whole lifetime? The learner is, not instructed, but burdened by the mass of them, and it is much better to surrender yourself to a few authors than to wander through many." The situation is all the more true now: In this Information Age, we are inundated with floods of information. The amount of literature that gets published and distributed year after year is increasing in geometric proportions. It is extremely difficult for the scientist to keep himself abreast of what is happening in his current area of interest by reading all that is published. He has to be very selective in what he should read. Prior to that, he needs to know what is being published from which he can make a selection. This situation calls for some specific services from the library – one of them meeting this need is Selective Dissemination of Information or SDI for short.

8.3.1 Definitions of SDI

It was H Peter Luhn who first defined SDI in 1961 as: "The Selective Dissemination of Information is that service within an organisation which concerns itself with machine assisted channeling of new items of information, from whatever source, to those points within the organisation where the probability of usefulness, in connection with current work or interests, is high." Here the term 'machine assisted' denotes use of computers and IT "to whatever source" means information from within the organisation and outside as well. The phrase "new items" means current information. "usefulness is high" refers to the fact that it should be useful to the user or user group. "within the organisation" means that SDI is usually made with reference to some specific corporate or academic entity.

Edmund Weaving defined SDI as, "It is the activity of supplying the clientele on a regular basis with requested, specific types of information – the emphasis on the specific." Over the years, the meaning of SDI has slightly changed; it is not always a service offered by an organisation for internal use. Many publishers and information centers started offering SDI to outside clients as well. The concepts of currency, specificity, use of computers, etc, remain.

8.3.2 Components and Operational Features of SDI

Providing SDI service involves several interlinked components such as:

- a) User's Profile
- b) Document Profile or Database
- c) Computer hardware / Network
- d) Software
- e) User Interface

a) User's Profile

User's profile states the specific information requirements of the user. This contains general information of the user like name, department/project/division/programme, employee ID, phone, fax, contact email ID and other details. As far as the information requirements are concerned this may be a series of one or more statements. The user is asked to furnish a brief description of his research topic. He may also give keywords, phrases, descriptors, classification numbers etc whatever he knows. A typical paper answering his needs is also given reading which librarian knows the topic better. If he knows authors, institutions that carry out similar activity, such information is also collected. If the user has limitations about language of the original, he mentions the languages that are acceptable. The librarian through an interview, if possible, gets clarifications if needed. Then a query is formulated which would work on the database that would be used for matching, using the thesaurus, an indexing vocabulary. While constructing the query, the librarian may decide what terms are to be chosen, whether truncation or wild cards would be useful, whether Boolean or free text queries are to be used. He would also keep in mind the limitations mentioned by the user. As a result of this exercise, he gets a suitable query depicting users needs tailor-made with reference to the database that would be used or in other words, for the SDI work. Some standard thesauri used by external databases are given in Table 8.3 by way of illustration.

Table 8.3: List of Popular Thesaurus in S&T Areas

S.No.	Thesaurus	Publisher
1	INSPEC Thesaurus. 1989	IEEE
2	NASA Thesaurus, 1982	NASA
3	Thesaurus of Engineering & Scientific Terms (TEST) 1967	English Electric Co.
4	Thesaurus of Engineering Materials	ASM
5	COSATI Thesaurus	COSATI
6	Unesco Thesaurus	Unesco
7	Thesaurus of Metallurgical Terms	ASM

Sometimes, the SDI service is sent to groups of people, each group working on a project, and not directly to any individual. In such cases, 'group SDI' is offered. The creation of user profile is the same as for Individuals. One might expect a larger number of documents to retrieve in the case of group SDI as the Profile would reflect the group requirements and it would consist of a number of queries.

b) Document Profile or the Database

One of the pre-requisites of SDI service is the availability of a master database of bibliographic items in the library. This can be totally internally generated or totally

outsourced (got developed by an outside agency) or the internal database may be supplemented with inputs from outside databases. This database may contain bibliographic details and where possible abstracts too of various types of documents like books, journal articles, standards, patents conference paper, thesis, and research reports, etc. The database would also have indexing facility based on keywords or descriptors. Various ways of indexing: 'every word in the title or abstract', 'whole field', 'selected portions of specified fields; are all possible.

If an external database is used the corresponding descriptors from the index of the database must be used while constructing the User Profiles.

c) Computer Hardware

Initially, SDI service was offered manually. Later, various automated systems were used, right from punched cards to main frames to desktop PCs. Now, to render SDI we need suitable computer systems in the library and users' systems connected via LAN or WAN. If SDI is offered using external databases, online connectivity is needed. Some decades ago, the database tape updates used to be obtained on magnetic tapes at periodic intervals, -they were mounted on local computer systems for SDI query processing. Now, we can perform SDI searching on host computers directly via online connection. This service can also be done using CDROM databases in which case CD-Net servers are required.

d) Software

Software is required for running SDI. Apart from software needed for developing the master database, programs to run the SDI queries regularly and print out matches are needed. This may be developed internally or bought from outside vendors. Several Integrated Library Automation Packages have SDI component built into them. Developing SDI software locally is relatively simple.

e) User Interface

SDI systems that are sophisticated usually have User-Interface modules as a part of SDI software. The end-user can enter his profile, modify it if need be and get statistics on his usage (how many references were brought to his notice over a period of time, how many were relevant etc.). The Intermediary (the librarian) can formulate queries online, test the output, incorporate users feedback, modify the query etc. In these instances, proper user-interface is essential.

8.3.3 Workflow in SDI Operation

The operations in SDI in a nutshell can be described as follows:

SDI involves running the users query against a small set of recently updated records in a master database; thereafter, printing out and distributing the 'hits' to the user. The user examines the output and gives feedback stating whether the items retrieved by SDI matching software is relevant or not. Based upon the feedback from the user the query is modified and the next batch of SDI operation improved query. The user gets copies of the full texts of the articles that are seen relevant in the SDI output and benefits by the same.

As a first step, the librarian develops the database or procures the same from external sources. He then prepares the user's profile as outlined earlier. These two steps have been discussed already.

The third step is matching. This involves executing the query as expressed in the user's profile with database subset. Here the query formulated is used in the SDI matching software. The query itself may contain: Boolean operators, parentheses, truncation, adjacency operators, wild card searching features, command for limiting by language, form, etc. The searching technique is discussed in detail in the Unit 9.

The next step is dispatching the output and getting feedback. The matching records, called 'hits' are printed out and sent usually in duplicate to the user. Nowadays the results are sent as email. The output consists of enough bibliographic data to identify and acquire the original publication. The query is repeated to show what query has been executed or at least the Profile Number is given. Feedback from the user normally consists of, against each item a question whether the item is 'Relevant', 'Not relevant' or 'Do not know'. Irrelevant items may be picked up as a result of improper questions (query), wrong database upon which the query has been matched, and sometimes due to errors in database records.

Finally, in the fifth step, the query is modified based upon users feedback. Database selections, query proper, limiting factors, are all looked into. The original records may be examined to get a clue for missing out useful records.

A functional chart of the SDI service separation is given in Fig. 8.1.

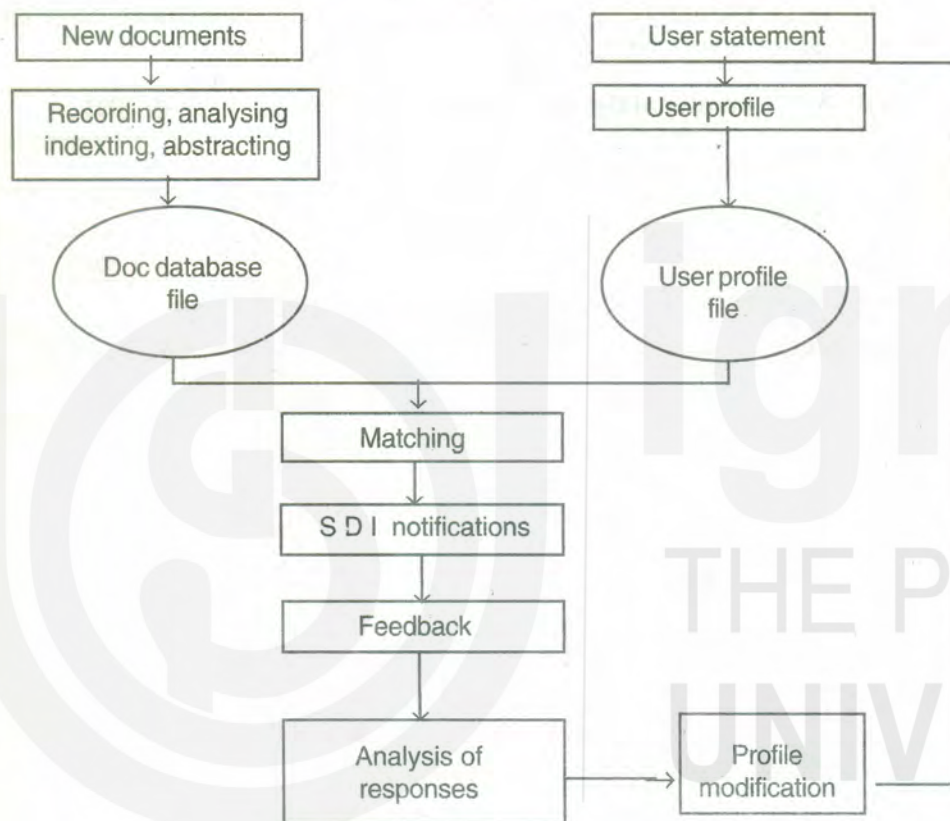


Fig. 8.1: Functional Chart of SDI Service

8.3.4 SDI Services: Some Examples

SDI can be offered at the institutional level by an institution or by some national level organisation at the national level. It may be free of charges or commercial (fee-based). It may be using local databases or external databases.

Some years ago, obtaining computerised bibliographic databases for SDI work was very costly and computer facilities were very scarce. At that time, INSDOC, Delhi, and BARC, Bombay used to obtain database magnetic tapes on a periodical basis, mount them on their computer facilities and run SDI service. The output was sent in paper format once a month via post. Scientists all over India were served for a nominal fee. Subsequently, with the availability of better telecommunication facilities in the country for online accessing of international databases, a number of organisations started providing SDI services to their research/academic/technical staff. Such organisations include DESIDOC, Delhi; BARC, Mumbai; ICRISAT, Hyderabad, NCL, Pune etc. INSDOC (now NISCAIR) provides SDI service to any individual or organization on payment. The National Centre for Science Information (NCSI), located in the Indian Institute of Science Campus, Bangalore provides such a service to the users in the Institute.

8.3.5 SDI using CD-ROM Databases

With the advent of databases in CD-ROM format, several libraries started offering SDI using internally available (acquired) CD-ROM databases. This involves using the latest updates of the databases. Database vendors like OVID, Silver Platter, etc give their own SDI facilities as a part of search facility. Here, multiple databases may be searched. In this case, necessity to avoid duplicate record arises. The SDI queries may be 'scheduled' to be run at periodic intervals. The results are dispatched by email or by post.

In many cases, the search software is so simple that the user himself can form queries and set up individualised profiles. Quite a bit of disintermediation has come about in the SDI arena.

8.3.6 Comparison of CAS and SDI

CAS and SDI are both alerting services. There are certain commonalities and a few differences. These are summarized in Table 8.4.

Table 8.4: Commonalities and Differences Between CAS & SDI

SN	CAS	SDI
1	Alerting service	Alerting service
2	Generic service	Selective, based on individual needs
3	Currency of information important	Currency of information important
4	Output includes mostly bibliographic data	Often tends to include abstracts as well
5	Not restricted to local resources	Not restricted to local resources
6	Small recent subset of a database is searched	Small recent subset of a database is searched
7	No profile matching is involved	Users profile (query) is matched using sophisticated query algorithms
8	No feedback for corrective action included	Getting feedback and modifying query are essential features
9	Subject coverage may be broad	Highly specific subject – searches based on user's query.
10	Continuous omnibus type of service	Service may change as far as individual user is concerned, as soon as his interests change.

Self Check Exercise

- 4) Why is SDI offered in a library? Explain the role of "feedback" step in SDI as related to other steps.

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

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

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8.4 ELECTRONIC CLIPPING SERVICES (ECS)

Availability of computers, databases, good levels of computer connectivity and other advancements have paved way for Electronic Clipping Services in place of Selective Dissemination of Information Services. Traditional database vendors like Dialog, STN, Nexis, Data Times, etc, have been offering such services from the early nineties. As a part of regular search operations on database files, one can opt to save the search strategy and final (tested and vetted) search query along with limiting factors in a separate permanent file in the vendor's computer. Such saved search expression can be subsequently executed at specified intervals on small sets of updated records in the database file(s) concerned. The results are then delivered to the user by the mode selected.

8.4.1 Generalities of ECS

It is often possible to select multiple files in one go for searching. In many cases, the database vendor himself offers several groups or clusters of subject related files. As far as display is concerned, some vendors provide various options: only title, abstract also, keyword, full text of the original article, inclusion of graphics, etc.

The periodical output is delivered to the user in many ways as follows:

- Fax
- Personal email box
- Email box allotted by vendor (example: Dialmail of Dialog) on his computer system – (this usually involves being connected to the vendor's machine for longer time leading to extra charges)
- On special terminals supplied by the vendor that can be used with leased lines
- Printed on paper using remote printer and dispatched through courier or postal system (preferred mode for full text)

When multiple files are searched, there could be duplicate records. Duplication identification and elimination is a facility with some systems. How fast does the database file get updated is another aspect to be looked into. This could be real time, or vary from file, to file from a daily to weekly to monthly. These services are generally aimed at corporate customers. Such customers may internally distribute the results to different departments or user groups. In such cases, corporate clients may want some facility to identify the output or invoice by the sub-accounts so to say. If a central library is receiving a large number of printouts from different vendors for different users, then some identification of local client or the user to whom the printout is meant, will be useful. Having discussed some generalities of Electronic Clipping services, let us look at a few database vendors and their services.

8.4.2 Data Times: PASSPORT

DataTimes offers Personalised Automated Search Service abbreviated as Passport. As 'query formulation' is very complex and crucial for the success Passport, queries are formulated with human interaction between the customer and Passport representatives. The service covers about 100 newspapers, broadcast transcripts, and wire services, covering news items the same day it is published. Delivery via fax, email (MCIMail) is available. News is scanned only for the past seven days. Therefore, it is possible to miss out important news if it is more than 7 days old. Full text viewing is at a premium. Unique duplicate filtering mechanism helps to see a story only once. The frequency of delivery may be once a day, every working day, every alternate day, once a week, etc.

8.4.3 DIALOG: Alert Service

The user selects the files to search. Nearly a thousand files in all disciplines are available. The service issues and perfects the query. Then, a dummy Print Command is issued that

may be cancelled later. Then SAVE ALERT command saves the query in a separate folder. The query formulation can also be done easily via a menu invoked by the command ALERT. ALERT REVIEW is used for editing old Alert queries. DailMail, MCIMail delivery is available. TARGET is another powerful Dialog command, which helps in selecting the 'best' articles than by searching by Keywords in the title – especially for Electronic Clipping Service.

8.4.4 Dow Jones: //CLIP

According to ME Bates, "Dow Jones //CLIP service is closest to a true customized news feed." Here the selected items are stored in a //CLIP folder created for you. One folder is created for each news source. Delivery is via online (That is, you have to log into the system). The stories may be delivered by fax, AT&T mail, and other systems. Two-digit source code identification helps the user know the source. Full text is available, only if it is wanted after looking at abstract. Full text charges are hefty. //CLIP allows mixing different types of sources: electronic wires, bibliographic databases, press releases, etc. Limiting by 'recent-ness' of stories ("not older than a day") is possible in //CLIP. //TRACK is a specialized Electronic Clipping Service exclusively for Stock Quotes.

8.4.5 NewsNet: NewsFlash

Industry newsletters from database producers like TRW, D&B, ABI are covered. Among the useful options unique to NewsFlash are:

- Activation and expiration dates may be specified
- Output can be sorted by issue date, title, keywords, etc.
- Query – temporary 'undeleting' of query words & phrases possible.
- Existing folder setting may be copied to another folder.

Fax and online delivery are available. User can scan headlines, display KWIC format, preview summary, then get full text if need be.

8.4.6 Nexis: Eclipse

Mead Data Central's LEXIS/NEXIS service called ECLIPSE is an SDI service. One unique feature is that the query or profile recalls the complete set of documents meeting the query from the entire database each time the query is run. Therefore, it is imperative to include a date limitation clause in the query. One has to run a search and then save it to get an alert query. Many modes of delivery are available. Editing of stored profile is not possible in Eclipse. Duplicate detection is not supported.

8.4.7 ISI: Alerting Services

ISI Profile-based Alerting Services: These unique web-based alerting services may be used for individuals, as well as for the needs of an entire organisation. Profiles are filtered against a database of 9,000 journals. 'Personal Alert' is a highly customized profile based alerting service covering nearly 16000 high impact STM journals, books, and conference proceedings. 'Research Alert' is a print-based service delivering complete bibliographic information on personalized profiles of individual users.

Table-of-contents Alerting Services: 'Journal Tracker', 'Corporate Alert', 'ISI Chemistry Alert', 'Current Chemical Reactions' and "Current Contents Service" come under this category. Print version of the Current Contents is the most popular and widely used by STM community and it is issued in 7 sections:

- i) Life Sciences
- ii) Physical Chemical and Earth Science
- iii) Engineering, Computing & Technology

- iv) Arts and Humanities
- v) Social and Behavioral Sciences
- vi) Agriculture, Biology and Environment Sciences
- vii) Clinical Medicine

Current Contents Search is available through several agencies like: OVID Technologies, Silver Platter Information, Gale Group, Dialog, Data Star, etc.

8.4.8 Evaluation of Electronic News Clipping Services

These evaluation criteria are especially meaningful in the case of web-based News Clipping services. These have been adopted from Competitive Edge website: (<http://www.clipresearch.com/comparison.pdf>). Given in Table 8.5 are some typical questions, which may be asked. The answers for several services are compared to arrive at a conclusion.

Additional questions are needed in the case of traditional databases and ECS based on them. For a good discussion on this topic, read the article in Online: July 1994, pp43-51 by ME Bates.

Self Check Exercise

- 5) How is ECS a form of SDI? Describe the features of Dialog from the point view of ECS.
- 6) List some questions that you would seek answers for, while trying to evaluate an ECS service.

Note: i) Write your answers in the space given below.
ii) Check your answers with the answers given at the end of the Unit.

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Table 8.5: Typical Questions for Evaluation of ECS

● Scope ● Which newspapers are covered? local, national, international? ● Are web editions of newspapers covered? ● What independent wire services covered: Paid / Independent / Foreign? ● Are magazines / trade journals covered?
● Delivery Options ● What is the frequency of delivery? ● What modes of delivery are available; Fax / Email / Hardcopy / Disk / CDROM ● What is the lag time?

● Is real-time mode of supply applicable? (as and when news becomes available?)
● Actual Clips ● Is full-text of story available? ● Is the story accompanied by photos?
● Fees ● How is the fee collected: Whether Pay per clip or Flat fees
● Other ● Is there a commitment period required? ● Do you have the ability to change selections (profiles) ● Can you tailor selections (your profiles) to suit your needs? ● How much cancellation notice is needed ● What is the lead time needed to start the service?

8.5 NEW DIRECTIONS FOR ALERTING SERVICES

Internet is changing drastically the way in which we work. Provision of CAS is no exception. Most publishers and producers of information provide some part of their output free of charge on their websites and charge for bulk of the rest of information. Readers and users hitherto dependent on the librarian for interpreting their requirements to database or information producers no longer need to so. This “disintermediation” is forcing libraries to offer various value-added services. The end-user is becoming less and less dependent on the library.

As a result, many libraries are discontinuing publication of CAS bulletins in print form. Most services are provided using computers and networks via email. The trend is rather to buy ready-made solutions and modify to suit local needs. So is the case with SDI. Sending elaborate listings with abstracts in paper form, obtaining feedback (relevant/not relevant/don't know), the modifying users profiles are being eliminated. User himself does creation of user profile. Matching is done by external or local computer software. Output is mostly made to email box. Readers are also getting used to leaving carefully formulated queries in external database systems and setting up 'Alerts' for regular supply of updated information. Librarian's professional help is needed in identifying sources, database selection, initial steps of query formation, etc.

Alternative ways keeping one informed have emerged. Internet-based discussion groups and 'Lists' help the scientist keep in touch with peers. Here they exchange news, views, experiences, pre-prints, knowledge of new resources, etc, much faster than possible via library routes.

As a result of computer data storage devices becoming cheaper day by day and due to unimaginable improvements in technology, more and more paper-based information is getting converted into digital form – even at the production stages. This will have a bearing on alerting services in a big way. The types of documents and information carriers have changed from simple paper to books, e-newsletters, e-journals, CDROM, DVD, ebook reader, etc. and alerting the availability of such resources needs special methods.

Users information needs are satisfied by collections of computer files, email messages, etc. – formats not handled by the librarian. Alerting services may become an integral part of information generation process.

This Unit has given an overview of several current alerting services. Many types and formats of CAS like List of Additions, CAS Bulletins, and List of Forthcoming Events, Research in Progress, TOC Services, and Current Employment Opportunities were seen with examples. As alerting services relating to news items assume special significance in view of several IT-related sources of news (as against print form), many news filtering services have been discussed. In particular we saw descriptions and examples of news from sources like: popular web portals, Google, traditional database vendors, news aggregating agencies, newspaper websites, etc. Commonalities and differences between CAS and SDI have been highlighted. A recent technology for obtaining news automatically from several constantly active websites via RSS Feeds has been mentioned. Some criteria for evaluating SDI and CAS have also been listed. A recent version of SDI using traditional databases has been discussed exclusively under Electronic Clipping Services.

The student should note that the information provided in this unit on various databases, examples of CAS, SDI and ECS services are representative and are provided as indicators to give an understanding of the topic. Actual data or facts are subject to change drastically due to changes in technology, competition, users' demands, economic factors, etc. This applies to URLs of websites too.

In the next Unit, you would learn about providing information services using bibliographic databases with special emphasis on using full text sources.

8.7 ANSWERS TO SELF CHECK EXERCISES

- 1) Current Awareness Service, Selective Dissemination of Information, Electronic-Clipping Service.
- 2) List of Additions
Current Awareness List / Bulletin
Current Contents / ToC Extracts
Research in Progress
Employment Opportunities
Forthcoming Events List

These services, among others, may be included as Current Awareness Services. How to render TOC service is briefly explained below:

Reproducing and distributing Table of Contents of current issues of periodicals constitutes TOC Service. Several approaches to this service are possible.

TOC from Journal Publishers Website: Many publishers of journals give Table of Contents of new issues on their website. There is also a provision to 'subscribe' to these TOC on a regular basis by submitting a simple request. The librarian will then receive regularly TOC of selected journal titles by email. He can forward this TOC to concerned readers regularly and automatically. Automatic forwarding of mail by setting up incoming message filtering rules is easy.

National Center for Science Information, Bangalore provides TOC service in electronic format to its users. It is called ETOC. It is based on Current Contents of ISI.

- 3) Recently, a Technology called RSS feed is available to facilitate offering news-based services. Many websites offering news items also provide what is called an RSS feed. New Indian Express is one such Indian newspaper providing RSS feeds. RSS feed is an XML file. This file has an URL (address of the page on the website).

At the end-user's PC, he has to install a small program generally called RSS Aggregator. Many RSS readers (aggregators) are available for free download and Amphetadesk is one of them. After installing Amphetadesk and invoking it, one has to enter the URL of the XML page in this program. Thereafter, Amphetadesk automatically downloads frequently the XML page (RSS feed). We will then get on our desktop the latest news brought to us regularly every three hours (or as frequently as you set it up.). If we have entered five news channels then we would have five sets of news items. All of them have the URL of the actual news item plus a short abstract. There is a provision to display constantly updated news pages on your website using this technology.

- 4) SDI is offered in a library to save the time of the user. It is also to bring to his notice of current developments in his field of interest.

Reader, interests are described in a User Profile after through interaction with the user.

Each document in the recent collection is also described by means of keywords and tags.

As a result of matching the query (comparing Readers Profile with Document Profile), some matching records, called hits, are obtained. This list is printed out and sent to the reader concerned.

Whether the matching is correct or not, whether the users profile has been constructed correctly or not, whether the references pulled out by the system is relevant to the user or not — these aspects have to be verified and corrective action taken. Then only the SDI system would be free from defects. The crucial step where this checking is done is via the feedback step. Here, the user is specifically asked to mention against each and every reference (hit) shown to him as to whether it is relevant or not. Based on this feedback and explanations given by the user in remarks, we can modify the profiles and the query itself so that better results may follow. Therefore, feedback is a very important step to make SD service very useful.

- 5) As a part of searching databases available with online vendors like Dialog, Nexis, etc, SDI service may be provided. Generally, searching databases online is done for retrospective search. Such databases cover large back files of many years. Database vendors also allow us to save our queries. Saved queries may be run against future periodical uploads of files. The results may be delivered via many modes – fax, email, courier, special terminals, etc. This service is called Electronic Clipping Service(ECS).

As the search is done against small files of current updates and the queries are tailor-made to individual needs, this method of keeping updated (through ECS) can be treated as a form of SDI.

ECS using Dialog: The user selects the files to search. Nearly a thousand files covering all disciplines are available. He then issues and perfects the query through iterative process of examining the results and correcting the query. Once the query is perfect, then a dummy Print Command is issued that may be cancelled later. Then, SAVE ALERT command saves the query in a separate folder. The query formulation can also be done easily via a menu invoked by the command ALERT. The command,ALERT REVIEW is used for editing old Alert queries. Then the query keeps getting matched regularly with the additional material that gets added to the databases and the selected items get transferred to the user's terminal.As far as posting results is concerned, DailMail or MCIMail delivery is available. TARGET is another powerful Dialog command, which helps in selecting the 'best' articles than by searching by keywords in the title – especially for Electronic Clipping Service.

- 6) Please refer to Table 8.5.

8.8 KEYWORDS

Item	: Description
Blog or Weblog	: A recent phenomenon of websites of individuals – where daily updates in the form of a logbook is common.
CAS	: Current Awareness Service
Document Profile	: Records in a selected database used for SDI service
ECS	: Electronic Clipping Service
Feedback	: With respect to SDI: The act of sending output to the user and getting his response about relevance of each record; the reason is to improve the output by modifying the user profile based on feedback.
Filtering Service	: Recent from of SDI, especially for news
I&RS	: Information & Referral Service
JCC	: J-Gate Custom Content
JCCC	: J-Gate Custom Content for Consortium
J-Gate	: Journal Gate way Service from Informatics, India Pvt. Ltd., Bangalore.
RSS	: Really Simple Syndication; A system of getting the latest revised version of a web page automatically using pull technology.
RSS Aggregator	: A software program needed to download RSS feeds. It is special type of news fetcher-cum-browser.
RSS Feed	: An XML file in a website that offers its readers the facility of downloading latest revised version of a page or news items automatically
SDI	: Selective Dissemination of Information
Search Term	: A Search Term is an expression, a sequence of signs, letters and/or figures relevant to a specific query. It may be a single word, more than one word in a string, name of a person, institution, classification code or subject heading, etc.
STM	: Science, Technology & Medicine
Thesaurus	: A controlled and dynamic vocabulary used in information retrieval system. Relationships between terms are shown.
TOC	: Table of Contents
User Profile	: A statement of user's information requirement in specific terms.

8.9 REFERENCES AND FURTHER READING

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8.10 LIST OF USEFUL RULES INCLUDING THOSE REFERRED TO IN THIS UNIT

(Some URLs common to this and the next Unit are mentioned at the end of Unit 9)

SN	Web Site for	URL
1	Info on conferences	http://www.papersinvited.com
2	RSS Feed directory	http://www.feedster.com
3	India-related industrial news	http://www.securities.com
4	US B-log news source	http://w.moreover.com
5	J-Gate of Informatics	http://j-gate.informindia.co.in
6	Amphetadesk: RSS Reader amphetadesk	http://www.disobey.com/
7	Feedster (RSS search engine) and directory of RSS feeds	http://www.feedster.com/
8	PointCast (news delivery)	http://www.pointcast.com
9	Lexis-Nexis	http://www.lexisnexis.com
10	Dow Jones	http://www.dowjonesnews.com
11	Dialog	http://www.dialog.com/home/india/
12	STN (ACS partner)	http://www.fiz-karlsruhe.de/
13	Google News Alerts	http://news.google.com/

Sample page from ICAR – CAS Bulletin: Directory of Seminars Symposia, workshops in Agriculture and Allied Sciences'

No. 32

JULY-DECEMBER 2003

**Directory of
Conferences, Seminars,
Symposia, Workshops
in Agriculture and Allied Sciences**



INDIAN COUNCIL OF AGRICULTURAL RESEARCH
NEW DELHI

S. No.	Title/Date/Venue	Organizing/ Sponsoring Authority
147	Farming systems approach for sustainable agricultural development	NAARM, Hyderabad
	Dates: 15-24 Dec	
	Venue: NAARM, Hyderabad	
148	National level training course on rapeseed mustard and other <i>rabol</i> seed production technology	Director (Ext. Training), GOI, New Delhi
	Dates: 16-23 Dec	
	Venue: Seminar Hall, IATTE, CSHAU, Hisar	
149	SMS training on FLD on oilseeds and pulses	Zonal Coordinating Unit-VIII, Bangalore
	Dates: 18-20 Dec	
	Venue: UAS, Bangalore	
150	National workshop on diversified use of jute and allied fibre crops	Indian Fibre Soc./Central Res. Inst. for Jute and Allied Fibres, Barrackpore
	Dates: 19-20	
	Venue: CRIJAF, Barrackpore	

UNIT 9 BIBLIOGRAPHIC FULLTEXT SERVICES

Structure

- 9.0 Objectives
- 9.1 Introduction
 - 9.1.1 What is Bibliographic Fulltext Service?
 - 9.1.2 The Need for Bibliographic Fulltext Service
 - 9.1.3 Players in Bibliographic Fulltext Service
- 9.2 Fulltext Sources
 - 9.2.1 Journal Publishers, Online Vendors and Database Producers
 - 9.2.2 Library Consortia
 - 9.2.3 Eprint Archives
 - 9.2.4 Fulltext Sources on the Internet
 - 9.2.5 Non-Bibliographic Fulltext Sources
- 9.3 Examples of Fulltext Databases
 - 9.3.1 Databases covered by INDEST
 - 9.3.2 Indmed
 - 9.3.3 Vidyandhi: Database of Theses
 - 9.3.4 Indiatat.com
- 9.4 Information Technology and Fulltext Resources
 - 9.4.1 Providing Access to External Databases: Automating the Process
 - 9.4.2 Remote Access to Fulltext Databases: Example of British Library Network
 - 9.4.3 Role of Digital Librarian in Consortium Access to Fulltext Resources
 - 9.4.4 Role of the Digital Librarian in Promoting and Using Eprint Archives
- 9.5 Copyright and Licensing Issues
- 9.6 Likely Future Trends
- 9.7 Summary
- 9.8 Answers to Self Check Exercises
- 9.9 Keywords
- 9.10 References and Further Reading
- 9.11 Important URLs in this Unit
- 9.12 Appendix: Bibliographic Databases in Indest

9.0 OBJECTIVES

After reading this Unit you will be able to:

- list out parties or players involved in fulltext sources generation / distribution and their roles and interrelationships;
- know the different sources for procuring fulltext journals, fulltext databases, alongwith intricacies of subscription or securing right to access fulltext;
- know examples of fulltext databases alongwith descriptions;

- understand librarians' role in providing access to fulltext sources—various IT related tasks he can perform;
- discuss certain non-bibliographic fulltext databases; and
- appreciate the copyright and licensing issues involved.

Procuring documents using Fulltext sources (Document Delivery Service) is dealt with in the next Unit in greater detail. Techniques of searching databases have already been covered in Unit 4 of this course. Understanding many portions of this Unit requires a good knowledge of Internet as applicable to libraries. Block 4 in this course discusses Internet Technologies in detail. It is suggested that you re-read this Unit once again after you have studied the Units 13 to 16.

9.1 INTRODUCTION

In Unit 4 on Database Searching you have learnt about various types of databases, media types associated with them, the need to provide certain library services using bibliographic databases, several searching techniques and as well about how to evaluate databases. In this Unit we shall concentrate on Fulltext databases and services related to them.

A bibliographic database, to recollect, is a large computer file containing bibliographic details such as author, title, publisher, place, language, date of publication and the like. The type of documents could be books, monographs, journal articles, conference papers, patents, standards etc. In many cases a short summary or abstract is also included. A bibliographic database is made useful by providing many indexes facilitating search by several fields like author, title, accession number, and subject, etc.

A database described as above, which in addition to bibliographic details and abstracts can also provide fulltexts of the original publications or documents is called a fulltext database. It provides instant access to the complete text—that is text, pictures, tables and graphics as in original publication. The term Fulltext has many meanings and synonyms. For example, if only the text part of the document (no pictures / tables) is keyed in and a soft copy is available, then it is called e-text. Two decades ago, facilities for storing, retrieving and displaying pictures or graphics on computers was not easy. At that time several books were made available in e-text format. This was good enough for poetry, prose, and fiction type of originals. Ebook on the other hand, contains the entire original—all text, pictures, colour—and the softcopy is produced in several special formats exclusively meant for e-books. Ebook files are presented in html, pdf and other file formats. Ebooks are electronic versions of regular books and monographs.

9.1.1 What is Bibliographic Fulltext Service?

Bibliographic databases, about a decade ago, used to provide only bibliographic data and abstracts. The reader had to decide whether he should go in for the complete article based on the abstract and Metadata (keywords, descriptors); thereafter the librarian would locate the specific journal issue in print version in some library. Thereafter, he would order a photocopy (perhaps from a library or Document Delivery Centre), pay for it, get it by fax or post and then hand it over to the concerned reader. Librarians used to depend upon DDS like INSDOC, BLDSC, and the like.

Nowadays, the scenario is fast changing. More and more journals are available in fulltext as well as in print. Many publishers, content aggregators, and intermediaries are offering fulltext of the original to be downloaded instantly, immediately upon bibliographic search/retrieval is done on the computer system. It is no more the case of difficult work involving many steps: find what you want in one step, locate the original in some library in another step, order a photocopy or the original document via interlibrary loan as next step, pay if necessary and get it in the last step.

Now in one single step, searching, retrieving, ordering, getting Fulltext are all carried out.

Providing access to fulltext bibliographic databases, allowing library patrons to downlo. fulltext directly, providing training to users in database searching and facilitating all these is called Fulltext Bibliographic Service.

9.1.2 The Need for Bibliographic Fulltext Service

A library for a variety of reasons provides fulltext bibliographic services. Convenience, saving in time due to quick and almost immediate delivery, greater customer satisfaction, higher levels of affordability are some reasons why libraries offer fulltext services. Patrons are no more satisfied with abstracts. They demand immediate response for originals and are not prepared to wait for several days. They are prepared to bear the extra cost involved in quick fulfilment of their requirements. Greater availability of fulltext has led to the reader psychology: "Let us look at the original anyway". The fulltext is available in digital form right at the desktop of the reader—the reader need not go to the library but can use the facility of the library's subscription even sitting in his home or office. Advances in technology have rendered storing of large volumes of information files on personal computers very cheap. This again has spurred fulltext bibliographic usage.

9.1.3 Players in Bibliographic Fulltext Service

In the fulltext database supply chain there are a number of players involved, besides of course you the librarian. The author who is the originator of content can also supply a reprint of the paper in fulltext; all that the librarian needs is the authors' email. Any scientist publishing his paper in a peer-reviewed journal is an author in his own right. Nowadays, most databases provide author's email address.

Learned associations (societies) serve as publishers and producers. American Chemical Society, Indian Association for Cultivation of Science are some examples of learned societies acting as publishers. Commercial publishers are of course there who sometimes publish on behalf of learned societies also. Elsevier, Wiley InterScience, Sage are good examples. Publishers bring out the journal in paper, and digital form—CD-ROM or Online.

Traditional database vendors like Dialog, Lexis-Nexis, Dow Jones, etc., get content from journal publishers and add indexes on their own and make them searchable on computer. Learned societies may own database-vending agencies—for example American Chemical Society that publishes the famous Chemical Abstracts(CA), owns STN—a database company. STN has many fulltext sources. Besides making Chemical Abstracts available via STN, ACS also licences out content of CA to database vendors like Dialog, Data Star, etc.

Content aggregators are those that gather content from several small publishers and make the content accessible via web. Emerald, EBSCO and Ingenta are some content aggregators. EBSCO for instance buys content from hundreds of journal producers and makes it available in fulltext format through EBSCO gateways. Most often, linking to the publishers' original archive or mirror sites provides the access to fulltext.

Between the content aggregators and the library (and its patrons), there could be a third party: access facilitators. For example, Athens provides a facility for the library to manage user accounts for all its patrons on several database producers or content aggregators using a single interface.

Another recent trend that is gaining ground is the 'eprint' archives. The author or the institution where he works, creates a repository of his/their own publications in their private servers and make them accessible free of charge. Archives generally contain fulltext of the articles as it was prior to peer review stage. Eprint archives are reliable and are free sources for fulltext.

Close to the librarian are some artificially formed groups or entities called library consortia. Libraries subscribing to several titles in common (duplicates) get together, form a consortium and strike a deal with publisher(s) for lower prices. Such consortia have special licensing agreements for usage of fulltext among their patrons.

Thus, we see that authors, journal publishers, learned societies, content aggregators, database vendors, access facilitators, library consortia, eprint archives managers are some players in the supply/usage chain of fulltext resources.

9.2 FULLTEXT SOURCES

If we need to procure fulltext bibliographic databases or access to online journals, we must know what is available and method of getting, etc. In this section we shall see some sources such as:

- Journal publishers
- Online vendors
- Database aggregators
- Eprint archives
- Internet websites
- Non-bibliographic fulltext databases

We shall also see some examples of non-bibliographic fulltext databases.

One of the direct methods of getting online journals is to subscribe with publishers or through vendors. Availability of online access varies from publisher to publisher. Several possibilities like the following exist:

- Online access free for print subscribers
- Online access as costly as print version and separately purchasable
- Online access at marginal additional cost to print subscribers
- Only online available
- Online access free for specified past issues
- Online access available free to individual or institutional subscribers only

Actual details have to be ascertained from publishers' catalogues.

Generally, subscription to fulltext databases is on an annual basis. This means, if the subscription is discontinued, the access is withdrawn. Some publishers allow access to online version up to the period for which the subscription has been paid, even after you discontinue. Some others provide CD-ROM backup for permanent use.

Let us now look at a few more sources for fulltext journal articles. Where appropriate, some databases will be described under consortia - in the next sub-section also.

9.2.1 Journal Publishers, Online Vendors and Database Producers

Before we see examples of journal publishers, online vendors and database producers, let us learn about a directory of fulltext sources.

a) Fulltext Sources Online (FSO) (<http://www.infotoday.com/>)

A generalised directory listing Fulltext sources is "Fulltext Sources Online". This is a biannual (January and July every year) directory of periodicals accessible online in Fulltext through more than 29 aggregators. It lists over 22,768 newspapers, journals, magazines, newsletters, newswires, and transcripts (as of Feb 2004). Periodicals are listed alphabetically in the main section of the book, with ISSNs, if available. Under each title entry given are the aggregators and databases that contain the title online in Fulltext, along with coverage dates and the address of publisher's website with details of archives, if any. Also indicated are the frequencies or lag times of titles appearing online, and a notation of whether or not coverage is selected. Subject, geographic, and language indexes are also included, plus a section listing publications available on the Internet. Whether the source is free or paid-for is also indicated. Aggregator products included in FSO are:

DataStar, Dialog, EBSCOhost, Eureka, Europresse, Factiva, FirstSearch, GBI, Genios, Infomart, InfoTrac, InSite, LexisNexis, NewsBank, Newscan, NewsLibrary, NNI (Nikkei), Ovid, Pressed, ProQuest, Questel, Quicklaw, STN, Westlaw, and WilsonWeb. This directory is also available online as FSO Online and this is updated every week.

FSO is thus an excellent tool to select online resources including fulltext sources.

b) **Journals List of EBSCO Fulltext Database**

It would be a good idea to look into publishers' journals list relating to fulltext databases to find out the coverage and scope. Table 9.1 is an extract of a typical page from the journal listing of EBSCO fulltext database. Each journal title has a unique ID within the EBSCO system. Publisher's name differentiates it from similar titles from different publishers. A journal may have separate ISSN allotted - one for paper version, another for online version - if this is the case both the ISSNs are shown. Whether the vendor provides Pay Per View service or not is indicated. [Pay-per-view: you need not be a regular subscriber - for a small fee you can download the fulltext of an article, making payment using your credit card]. Besides subject of the journal, the period (in terms of volumes/years) for which fulltext is available in EBSCO is indicated in last two columns. The actual catalogue is a large file. It is in itself highly useful to check bibliographical details, ISSN, publishers name, etc. From an examination of the journal list of databases, we discern the coverage, strengths, scope, subject, etc.

c) **INGENTA as a Fulltext Source**

Ingenta is another fulltext source. Examine the contents of Table 9.2. It gives some a sample listing of journal titles available with Ingenta. Whether the online version is available to print subscribers free of charge, whether pay-per-view facility is provided (for those non-subscribers) and if yes, the charges per article including copyright fees are all shown. The last column is particularly interesting as it tells wide variety of fulltext access provisions adopted by different publishers.

9.2.2 **Library Consortia**

When a group of libraries get together under a formalised set up, for mutual co-operation and benefit then a consortium is in place. Generally, libraries come together to form a consortium so that they bargain with the journal producers as a united body for better (lower, of course) prices, for greater access (in terms of number of journals), for archival access (access to past issues), for perpetual access (access even after discontinuation of subscription), etc. There are a number of consortial efforts in Indian library scenario - some successful and other not so successful. We shall look at a few of them from the point of view of their being a mechanism for securing fulltext access to journal sources.

a) **CSIR-ScienceDirect Consortium**

Nearly 40 CSIR laboratories formed a consortium for the purpose of using nearly 1,800 Elsevier titles. All are in STM area. Important features of the consortium are:

- All institutions would continue to subscribe to Elsevier Titles without discontinuation for three years
- Irrespective of the number of titles subscribed by an institution, all institutions will have fulltext access to all 1800 titles.
- Everyone in the institutes concerned can access the journals online via LAN - access checked by UserID and Password and IP address authentication.
- Fulltext is assured for most titles from 1997 onwards
- The entire subscription for all the institutions for the combined subscription is paid by CSIR, administered by NISCAIR.

It is easy to see how all the institutions stand to gain immensely as access to a much larger number of journals is ensured.

Table 9.1: EbscoLite: Sample Extract of Fulltext journals Covered

Id	Journal Name	Publisher Name	Journal Paper ISSN	Journal Online ISSN	URL	Pay per view?	Subject Name	EJS Coverage From	EJS Coverage To
108942	AACN Clinical Issues: Advanced Practice in Acute and Critical Care	Lippincott Williams & Wilkins	1079-0713		http://ejournals.ebsco.com/direct.asp?JournalID=108942	No	Nursing	Volume 13, Number 1 (February 2002)	Volume 14, Number 2 (May 2003)
109902	AACN Clinical Issues: Advanced Practice in Acute and Critical Care (single user)	Lippincott Williams & Wilkins	1079-0713		http://ejournals.ebsco.com/direct.asp?JournalID=109902	No	Medicine	n/a	n/a
110279	AAHE Bulletin	American Association for Higher Education	0162-7910		http://ejournals.ebsco.com/direct.asp?JournalID=110279	No		n/a	n/a
100800	Abacus	Blackwell Publishers	0001-3072		http://ejournals.ebsco.com/direct.asp?JournalID=100800	Yes	Commerce	Volume 33, Number 1 (March 1997)	Volume 39, Number 1 (February 01, 2003)
100116	Abdominal Imaging	Springer-Verlag New York	0942-8925	1432-0509	http://ejournals.ebsco.com/direct.asp?JournalID=100116	No	Therapeutics. Pharmacology.	Volume 21, Number 1 (January 1996)	Volume 28, Number 3 (May 2003)
108227	About Campus	Jossey Bass Inc	1086-4822	1536-0687	http://ejournals.ebsco.com/direct.asp?JournalID=108227	No	History of Education	Volume 5, Number 6 (January/February 2001)	Volume 8, Number 2 (May/June 2003)

Table 9.2: Ingenta – Sample Listing of Fulltext Journals

Publisher	Free to print subscribers	Pay-per-view access	Publisher royalty fee	Notes
Association of Applied Biologists	Yes	Yes	£7.00	Free access also available for subscribing members of the Association
Association for Laboratory Automation	Yes	N/A		Articles currently available free of charge
Association of Learned and Professional Society Publishers	Yes	Yes	\$20.00	Free access to ALPSP members via ALPSP website
Association of Schools of Allied Health Professions	Yes	Yes	\$15.00	
Australian Academic Press	Yes	Yes	\$6.00	
Australian Nursing Federation	Yes	Yes	\$15.50	Volumes and Issues of the Australian Journal of Nursing are also available online to individuals. Issue: \$24.00, Volume: \$65.00
Beech Tree Publishing	Yes	Yes	\$6.81	
Begell House, Inc.	Yes	No		
Bentham Science Publishers	No	Yes	\$30	2001/2001 issues available free of charge
BIOS Scientific Publishers	Yes	Yes	\$20.00	
British Editorial Society for Bone and Joint Surgery	Yes	Yes		
Blackwell Publishing	Yes	Yes	£13.00 (\$28.00 for Periodontology 2000 Immunological Reviews)	Formerly Blackwells Publishers, Blackwell Science and Munksgaard. Online premium for, former BSC titles
British Institute of Radiology	Yes	Yes	\$15 for 24 hours	Made available via HighWire

b) Fulltext Access via JCCC

To begin with, let us understand what JCCC stands for. J-Gate is a Journal Gateway technology developed by Informatics India, Bangalore. J-Gate provides a bibliographic database of over 13,000 STM journals. Besides bibliographic data and index words, abstracts are also included.

Three important components are:

A directory of journals covered,

A database of articles contained in these 13,000 journals,

A powerful search mechanism for locating desired articles via author, title, publication, subject, etc.

When J-Gate contents are customised for a specific library (say NIMHANS in Bangalore) then, we have JCC- J-Gate Custom Content. If several libraries get together forming a consortium and a J-Gate is developed for them, the JCCC- J-Gate Custom Content for Consortium emerges. Here the content for print and electronic versions of all journals in the consortium libraries are indexed to form a single database for easy access of all concerned. In addition, details of availability of a specific issue in member libraries are indicated. There is a provision for the users in any participating library to ask for a photocopy or softcopy via e-mail as an attachment. For each journal title, although more than one library may be holding it, one of the libraries is designated as document delivery library for that title. The utility of JCCC lies in the assured availability of articles and easy procurement via online ordering methods.

For instance, Virtual Information Centre of ICICI Knowledge Park, Hyderabad has set up a consortium called JCCC@VIC. Its members are:

Indian Institute of Chemical Technology, Hyderabad

Centre for Cellular Molecular Biology, Hyderabad

ICRISAT, Hyderabad

National Institute of Nutrition, Hyderabad

National Chemical Laboratory, Pune

University of Hyderabad, Hyderabad

Virtual Information Centre, Hyderabad

In this consortium the emphasis is not on joint procurement of journals. It is on increasing the utilisation of journals subscribed by many institutions by providing access to digital contents and assured formalised way of inter-library loan or document delivery mechanism. Nearly 500 journals of member libraries are selectively covered. The database of articles for 2002 and 2003 contains 2.3 lakh records. This gateway provides a unique facility called 'My TOC'.

Here the end-user can select journal titles of his choice- he would get regular e-mail alerts telling when TOC from his select journals are added (updated) into JCCC database.

While JCCC@VIC is the first one to be established in January 2002, within a short span of two years several such efforts have come up. Some are:

JCCC@INDEST for INDEST Consortium described in detail below

JCCC@HELINET for Health Information Network in Bangalore

JCCC@TB-CEAR for National Tuberculosis Institute, Bangalore

JCCC@GAU for Gujarat Agricultural University

c) **INDEST Consortium**

INDEST consortium is funded by Ministry of HRD. It is aimed at helping a large number of academic institutions of higher learning to benefit through consortium efforts for combined subscription to several fulltext and A&I type of bibliographic databases. It is an open ended consortium. Presently, it has 38 institutions (All IITs, IIMs, IISc, NITs and some others) supported by MHRD, 59 GOI aided Engineering colleges funded by AICTE, 28 engineering colleges, which are self-supporting. Members enjoy special consortium pricing where discounts range from 15% to 85% of the annual subscription charges.

It is the largest consortium effort in the country helping academicians to access far beyond their individual institutional capacities. Table 9.3 gives the fulltext sources accessible to the consortium members. Appendix-1 gives detailed information about each database, resources (number of journals covered), print base (whether the libraries should have print version also), media in which it is available (online/CD), back file information, limitations on simultaneous access or quantum of downloading, who among the INDEST members can avail access to the database concerned, and other details. The last item (who can access) is required as INDEST has many categories of members each category enjoying different levels of privileges. It may be noted that among the following, Capitaline, CRIS INFAC, Indian Standards are fulltext databases of Indian origin. INDEST provides access to many A&I databases also. For details, please visit the INDEST website at the address: <http://paniit.iitd.ac.in/indest/>

Table 9.3: Databases Accessible to INDEST Consortium Members

S.No	Database	Address for Access
1.	ABI / Inform Complete	http://www.il.proquest.com/pqdauto
2.	ACM Digital Library	http://portal.acm.org/portal.cfm
3.	ASCE Journals	http://www.pubs.asce.org/journals/jrns.html
4.	ASME Journals (+ A M R)	http://www.asme.org/pubs/journals/
5.	Capitaline INDEST_consortium.htm	http://www.capitaline.com/intranet/
6.	CRIS INFAC Ind. Information	http://www.crisil.com/
7.	EBSCO Databases	http://search.epnet.com/
8.	Elsevier's Science Direct	http://www.sciencedirect.com/
9.	Emerald Full-text	http://iris.emeraldinsight.com/
10.	Euromonitor (GMID)	http://www.euromonitor.com/gmid
11.	IEEE / IEE Electronic Library Online (IEL)	http://ieeexplore.ieee.org/
12.	Indian Standards	Intranet Version
13.	INSIGHT	http://www.insight.asiancerc.com/
14.	Nature	http://www.nature.com/
15.	ProQuest Science (formerly ASTP)	http://www.il.proquest.com/pqdauto
16.	Springer Verlag's Link	http://www.springerlink.com/

9.2.3 Eprint Archives

Eprint is an electronic version of a journal article. A draft of a paper, before it is sent to the publisher is called pre-print. The publisher sends the draft to 'peers' in the field and obtains their comments for review, modification or validation of the technical content of

the paper. Thereafter, he edits it for language, style, standardisation of format; he also adds meta- data for index preparation. The copy of the paper after peer-review is called post-print. The electronic versions of both pre-prints and post-prints together are called eprints. Eprints are important sources for fulltext.

If a fellow scientist wants a copy of a journal article, he may order on a document delivery centre such as INSDOC (now called NISCAIR), or the British Library (BLLD), etc. Or, he may to get it through inter-library loan from his library. He may even order a copy via 'pay-per-view' sites from the publisher's website or from some content aggregator's website.

The last option (pay-per-view) is costly but immediate deliveries may be expected. Each download under this method might include heavy copyright clearance fees raging from \$5 to \$40 depending upon the publisher. Scientists in developing countries cannot afford to pay hefty copyright fees but also cannot afford to be without current research literature.

According to one study, (mentioned in the Self-Archiving FAQ):

For every one of the 2,500,000 articles published annually in the 24,000 research journals it is a fact that it is not accessible to most of its potential users because of unaffordable toll-barriers. And (this too is critical) this would remain true even if all 24,000 journals were sold at cost.

To overcome this problem, OAI—Open Access Initiative—has been started. OAI mandates the standardisation of meta-data used for indexing the literature in archive collection. The software for archiving, retrieving the contents are all easily available as open source software free of charge. All the servers distributed across the globe following OAI standards can easily be treated a vast single virtual collection.

Authors can self-archive their preprints. They can obtain permission from the publishers for archiving post-prints too. In the absence of such permission forthcoming, he can add a 'corrigendum' indicating the differences between the pre-print and the post-print. This would help users to know exactly how the publisher modified the pre-print through peer-review process. Eprint archives increase the availability of fulltext version of scientific papers and they are almost always free. Out of the 24,000 peer-reviewed journals, nearly 1,000 are now available in open access archives around the world. A comprehensive listing of eprint archives is available at <http://archives.eprints.org/>. How to go about establishing an archive is explained in the handbook that may be downloaded from: <http://software.eprints.org/handbook/>. All apprehensions of authors who may hesitate to start self-archiving are cleared through an FAQ called "Self-Archiving FAQ" which is also available at the same address.

Eprint archives are useful in this way: Authors increase the impact of their research output, as multiple sources are available for procurement of copies. Archival sources are cheap.

Greater readership results in faster dissemination of information and further creation of new innovative ideas. Eventually, the society benefits in the long run.

Before concluding this section, let us remember that self-archiving should not be confused with self-publishing. Self-publishing deals with the author keeping copies of his own papers in his own website or in his institution website. It could be in Blogs too. No peer review is involved. Contents of such papers may be commercial, self-promoting, challengeable and so on. Some might amount to vanity-publishing too where the author pays money to publisher to publish and distribute copies of his work. Generally, scientific community does not consider such publications as 'noteworthy'. However, as sources of a scientist's works, they may serve as useful sources for fulltext.

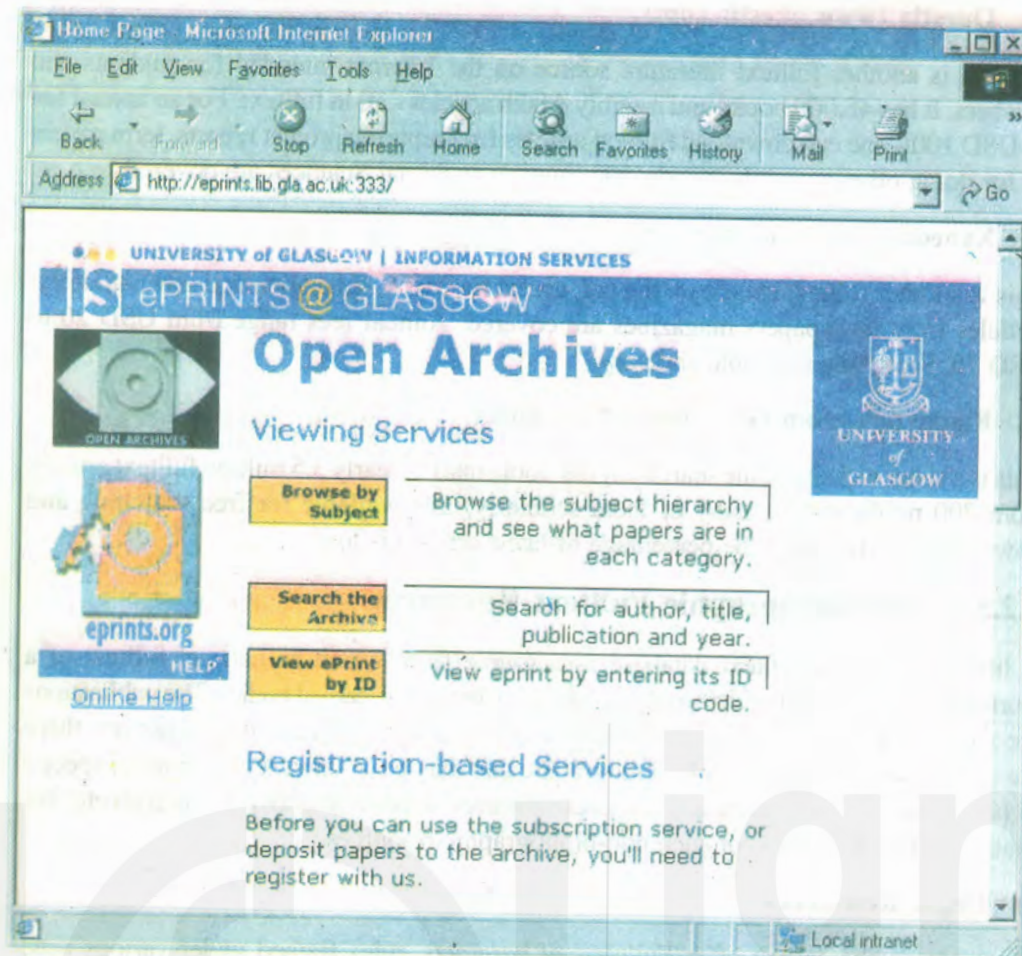


Fig. 9.1: Home Page of University of Glasgow Eprints Archive

In India, maintaining an extensive collection of pre-prints procured from authors and peers in the field of mathematics, in paper form, was practiced very successfully by the Institute of Mathematical sciences (Matscience), Chennai till as long ago as late seventies. Now, IISc has established an e-print archive of all papers published by scientists, researchers, and engineers. Figure 9.1 shows the Home Page of the eprints archive at University of Glasgow.

9.2.4 Fulltext Sources on the Internet

Apart from traditional database suppliers like Ebsco, Dialog, Infotrieve, Gale Group, etc there are several fulltext article sources on the Internet. Some of these are briefly discussed below:

a) Northern Light Business Research Library (www.northernlight.com)

Northern Light Business Research Library is designed to meet the needs of self-research-supporting business professionals and enterprise information centres wanting to support this kind of end-user. It is an easily usable, effective, and affordable research tool based on content, which includes:

- The Business Web: millions of pages of web content editorially selected to be of high quality for business research
- Thousands of trade journals and a comprehensive array other periodicals selected for their deep repositories of industry expertise and insight
- Business wires for up-to-date breaking information
- Local and regional newspapers to provide the regional business perspective

Northern Lights is available at an annual flat fee of USD 19,500/-. Unlimited downloading of fulltext articles is permitted.

b) **Questia (www.questia.com)**

Questia is another 'fulltext literature source on the Internet intended for students and teachers. It has 48,000 books and roughly 4 lakh articles - all in fulltext. For an annual fee of USD 100/- one can download fulltext articles for preparing project reports, term papers, or for doing other research. Nearly 500 journals in Social Sciences are covered.

c) **Xanadu (www.xanadu.com)**

This is another fulltext source on the net, useful for MBA, Education and other students. Articles from newspapers magazines are covered. Annual fees range from USD 20 to USD 70. Searching is simple and easy.

d) **Findarticles.com (www.findarticles.com)**

This is a sister website of the search engine 'looksmart'. Nearly 3.5 million fulltext articles from 700 publications (many of them scholarly) are available for free searching and downloading. However, the percentage of latest articles is low.

9.2.5 Non-Bibliographic Fulltext Resources

A librarian looks a fulltext database as a source from which he can get fulltext of a journal article published by commercial publishing houses or learned bodies. The publications are regular, peer reviewed and considered indispensable for research. However, there are other resources that are non-bibliographic that may be of interest to patrons in special libraries say, law firm's libraries, corporate libraries, industrial and R&D libraries etc. We shall take a look at a few of such non-bibliographic resources.

a) **Legal Resources**

There are databases that offer Fulltexts of bare acts, rules framed under various acts, regulations, notifications, forms, bye-laws, and so on. Another series of fulltext documents are the judgments pronounced by various courts of justice. These documents are almost always in public domain and are copyright free. Law enforcement authorities, law firms, researchers in social sciences need this information.

Besides the Government of India website managed by National Informatics Centre, GOI Delhi, private companies like Sohonet India, Manupatra, Juriix and others provide online as well CD- based database products that offer Fulltexts of the above documents.

b) **Standards**

Similarly standards issued by various standardisation bodies in different countries are important sources of information. Some standards bodies are ISO, BIS BSI, UMIL, ASTM, and the like. Standards are used in industrial and research libraries but they are not so much in demand in academic libraries. Provision of access to fulltext of standards is imperative for the prior types of libraries. Standards get updated or revised frequently - therefore regular annual subscriptions become essential. For example, a complete set of Indian Standards (some 18000 titles) is available as a set of CDs for use on corporate Intranet. (You may read details about it in Appendix 1)

c) **Government Notifications**

State and Central Governments issue several notifications and public documents called Government Orders (GOs for short). Public as well as other government departments need such GOs. Complete set of Fulltext of government documents is available in AP Government website. Most of government documents are free of charge or are priced very low.

d) **Conference Proceedings**

Papers presented in conferences, seminars, workshops, etc. offer recent and nascent information. They in fact form a part of Grey Literature, not easily procurable.

Access to conference proceedings and fulltexts of papers presented is indispensable in special libraries. Nowadays the seminar volumes are released in CD format as well as on websites. Fulltext is a specialty of such sources.

For example, Indegene (www.indegene.com) specialises in offering fulltext access to a number of medical-related annual seminars held in India. During the past two years they have published more than 120 Fulltext seminar volumes in CD on subjects such as cardiology, Diabetology, ENT, Nephrology, Neurology, Obstetrics and Gynecology, Ophthalmology, Plastic Surgery, Urology, Radiology, etc.

9.3 EXAMPLES OF FULLTEXT DATABASES

9.3.1 Databases Covered by INDEST

As already mentioned, details of about fifteen fulltext databases accessible through INDEST consortium are given in Appendix 1. Answering Self Check Exercise demands your studying this Appendix. Can you identify the databases in Indest that are not predominantly fulltext? In addition, let us see a few more examples of Indian efforts.

9.3.2 Indmed

Indmed is a medical and life sciences database of Indian peer - reviewed journals. The database is designed to provide medical professionals/researchers/students and the medical library professionals quick and easy access to Indian literature. Indian contribution in the areas of biomedical research and health care have been significant and have received acclaim internationally. However, only a small fraction of it is available for reference through international bibliographic databases. The ICMR-NIC Centre for Biomedical Information (Indian MEDLARS Centre or IMC) has designed and developed a bibliographic database of peer - reviewed Indian biomedical literature. This database covers 75 prominent Indian journals. These have been selected from more than 200 journals. Fulltext of more than 20 journals is included. The website address is: <http://indmed.nic.in>. The list of journals follows. Access is free.

List of Journals covered by Indmed:

- 1) Endodontology
- 2) Health Administrator
- 3) Indian Journal of Aerospace Medicine
- 4) Indian Journal of Allergy Asthma and Immunology
- 5) Indian Journal of Anaesthesia
- 6) Indian Journal of Chest Diseases and Allied Sciences
- 7) Indian Journal of Clinical Biochemistry
- 8) Indian Journal of Community Medicine
- 9) Indian Journal of Medical Microbiology
- 10) Indian Journal of Occupational and Environmental medicine
- 11) Indian Journal of Occupational Therapy
- 12) Indian Journal of Otolaryngology and Head and Neck Surgery
- 13) Indian Journal of Pharmacology
- 14) Indian Journal of Thoracic and Cardiovascular Surgery
- 15) Indian Journal of Tuberculosis

- 16) J.K. Practitioner
- 17) Journal, Indian Academy of Clinical Medicine
- 18) Journal of The Anatomical Society of India
- 19) Journal of Indian Association of Paediatrics Surgeons
- 20) Journal of Indian Society of Pedodontics and Preventive Dentistry
- 21) Medical Journal Armed Forces India
- 22) NTI Bulletin

9.3.3 Vidyanidhi: Database of Theses

This is a web-searchable fulltext database of PhD theses in Social sciences. The Department of Library and Information Science, University of Mysore, developed it. Department of Scientific and Industrial Research, GOI, Delhi has funded this project. It has the support of Unesco, National Digital Library of Theses and Dissertations (NDLTD), Microsoft, etc. The database is noteworthy as it is multilingual (English, Kannada and Hindi). It has more than 600 Kannada theses, more than 15,000 Hindi theses; Unicode has been used for Indian language items.

The database has been developed using co-operative acquisition strategy. Each university willing to participate signs an MOU with Vidyanidhi. The terms and conditions include that the University will insist on submission of PhD theses in digital form conforming to certain minimum format standardisation. On the other hand, Vidyanidhi would honour restrictions, if any, placed on making the availability of fulltext -such as freely and fully downloadable, downloadable upto first 25 pages, downloadable fully upon payment, and so on. The copyright rests with the author. The database is at <http://www.vidyanidhi.org.in/>

9.3.4 Indiastat.com

Complete tables containing statistical data on various topics are another example of non-bibliographic fulltext resource. Indiastat.com provides an in-depth statistics of India-specific socio-economic facts and figures culled from various secondary level authentic sources. Over half-a-million pages of statistical data have been qualitatively analysed, condensed and presented in a user-friendly format. The data can be downloaded in MS-Excel/HTML formats.

Academicians, researchers and professionals in marketing, finance, socio-economic studies and a host of other disciplines, will find Indiastat.com an extremely useful resource for their India-centric information needs. It is a paid site accessible only to registered members.

The subjects dealt with at Indiastat.com are given in the following Table 9.4.

Table 9.4: Subjects Covered by Indiastat.com

Agriculture	Banks and Financial Institutions	Civil Supplies and Distribution
Consumer Affairs	Companies	Cooperatives
Crime and Law	Demographics	Economy
Education	Electoral Data	Environment and Pollution
Foreign Trade	Forest and Wildlife	Geographical Data
Health	Housing	Industries
Insurance	Labour and Workforce	Market Forecast

Media	Meteorological Data	Mines and Minerals
Per Capita Availability	Petroleum	Power
Social and Welfare	Schemes	Sports
States and U.Territories	Telecommunication	Tourism
Transport	Urban Areas	Villages

Self Check Exercise

- 1) List out the players in the production, distribution and use of fulltext bibliographic databases.
- 2) List out the 15-fulltext databases from Appendix 1. Indicate the subject, its URL and whether the database is Indian or foreign, in each case.
- 3) What are eprint archives and why are they important sources for fulltext articles?
- 4) Why should we consider Internet sources like Northern Lights, Findarticles, etc.

Note: i) Write your answers in the space given below.
ii) Check your answers with the answers given at the end of the Unit.

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9.4 INFORMATION TECHNOLOGY AND FULLTEXT RESOURCES

When a librarian performs duties related to digital resources such as procurement, providing access, promoting institutional archiving, etc. he becomes a digital librarian. Some of the IT related tasks he can or has to perform in connection with online databases are discussed now. This section also includes a few typical software tools facilitating online access via institutional network.

9.4.1 Providing Access to External Databases: Automating the Process

A librarian may subscribe to a number of online bibliographic databases. These are accessible by connecting to the websites of publishers of the databases. The publishers generally provide access using IP number restriction or the UserID & Password Authentication or both.

In the case of IP number access, all users from different PCs connected to the LAN of the institution go through a single Proxy Server. Proxy server authenticates the user then permits further access to the online vendor. In the case of UserID and Password combination, this pair of data has to be entered every time access is desired. The librarian cannot reveal the password to all and has to keep it a secret. It is not possible to enter the password by himself all the time. There are many methods available to tackle this problem. One simple method is described below.

There is public domain software called Roboform, which works in conjunction with the web browser. Hundreds of sites on the Internet require you to register yourself so that you can view contents of those sites. Registration may be mostly free. However, you may be forced to enter the same data again and again (name, email, address, etc). Roboform automates the process of filling up forms on the web. It asks and stores most commonly used (asked for) data just once. Later, whenever a form is encountered the fields are filled up automatically; it allows you to verify and edit some fields if need be. Then, Roboform sends (submits) form data to the party.

Roboform has a facility to fill the form and submit the form without user's confirmation also. Passwords may be preserved in a protected encrypted file. You may use this facility to enter UserId / Password info about a number of sites including online database vendors. Thus, you can permit your readers to use the online databases without their having to know the password.

a) Athens (<http://www.athensams.net/>)

The method described in the preceding paragraph is OK for small institutions where the aim is to reduce work and secrecy requirements are not too tight. A library may subscribe to a large number of online resources. Users may be allowed to search remotely from their work places. Licensing requirements may be very strict and usage may be monitored in terms of resource, time, persons, etc. In such cases sturdy third party solutions are called for Athens is one such example. It is described below.

A library may subscribe to a large number of databases, journals etc from different online sources. The library may desire to permit access to certain specified online collections to select set of its users from different remote locations, say from campus network, from homes (remote off-campus access). See the example of British Library Network in India offering remote access in section 9.4.2 in this Unit. Providing access like this on a large scale adhering to licensing restrictions of the database suppliers is a big task. Athens service comes in handy at this juncture.

Athens is, fundamentally, a repository of organisations, usernames and passwords with associated rights (who can access what, from where, and during which hours). It has extensive account management facilities for organisations (say, your library) to create and manage usernames and passwords, and to allocate rights to individual usernames. Each organisation who registers with Athens has an Athens Site Administrator, whose responsibility it is to manage these accounts, ensure that only current members of their organisation have the rights of the organisation, and ensure compliance with all appropriate licence conditions. Athens usernames provide an efficient means of providing access to external resources for distance learners and remote users generally, with no need to manage a web proxy service. Athens provides true Single Sign On capability, where the user only has to supply his-username and password to the first Athens-protected service he accesses. Subsequent Athens-protected services within the same browser session will not prompt for a username. This allows organisations to build portals or learning environments with seamless authenticated access to external resources.

Athens ties up with several online web-based information providers like database producers, aggregators, publishers, etc. Elsevier ScienceDirect, Wiley Inter science, Dialog's DataStar and others provide access via Athens. More than 260 resource providers work with Athens. About 850 organisations like National Health & Safety, UK's Higher Education department etc., add up to 2.3 million individual end-users.

b) Ariel Software for Providing Fulltext Service via Fax

With commercially available hardware like PC, scanner and fax machine and Ariel software, you can scan articles, photos, and other documents directly; transmit the electronic images to other Ariel workstations anywhere in the world, using either FTP or e-mail; and convert them to PDF for easy patron delivery. The process is seamless-and all with no long-distance phone charges. Faster and clearer than a fax, Ariel stands up to difficult text, from Asian scripts to mathematical equations, and handles detailed images,

from Elizabethan woodcuts to NASA photos. In other words, Ariel enables academic and research libraries to electronically convey and share scanned or digitised documents—such as articles published in scholarly and professional journals vital to academic and scholarly research—between and within institutions, in high-resolution TIF or PDF formats across the Internet. Introduced in 1991, Ariel now has more than 10,000 installations.

9.4.2 Remote Access to Fulltext Databases: Example of British Library Network

The British Library Network in India offers remote access to certain databases to individual members. Databases currently offered at the desktop of individual users are:

- EBSCO—Academic Premier and Business Premier
- Infotrac: Same facilities are available
- Encyclopaedia Britannica online
- Ashridge virtual learning site

Each member is given a UserID and Password at the time of his joining. Service started in September 2003.

Technicalities

Each and every member has to login to the British Council site (www.britishcouncil.org/library) with his/her user id and password. This will authenticate the member; once it is done, they have the access to all above-listed products without using further authentication. This means, EBSCO or other sites recognise only British Council Library authentication (IP) not the members. If any library wants to develop such facility, they must have authentication software like Athens, etc. British Library has developed its own version of 'Athens' software for this purpose. The software provides for all supplementary activities like 'forgetting password', 'lost card', etc.

Statistics

At any point of time, the administrator can find out how many members are using the system (logged on to various hosts) and how long each member has been using the system. EBSCO provides periodical statistics on usage like: How many people logged in during a particular period; how many articles were downloaded/printed; which are most used journals or least used.

9.4.3 Role of the Digital Librarian in Consortium Access to Fulltext Resources

Apart from taking part in procurement of journals (paying subscription, signing the contract, etc.), librarians in each of the member institutions of a consortium have to perform certain administrative tasks like:

- Entering details of IP address of the Proxy server of the LAN through which his members would reach out to the websites of publishers. This has to be done for each title in the appropriate web server of the publisher directly using Administrator Access.
- Entering UserID & Password for the online subscription in the front-end search software used for access. If there is a common password, this may have to be protected and maintained secret.
- If there are several sites from which fulltext access is possible for an institution, then he has to prioritise them. (Some may be free as a part of consortium access; some may be on special licensing basis, etc).
- He has to ensure that the usage within the institution is as per stipulated conditions. Number of simultaneous accesses, number of fulltext articles downloaded, etc to be monitored to be within limits.

- If remote-access from off-campus locations is provided, then tasks relating to this have to be carried out—for instance, a complete list of eligible users along with names, UserId passwords, etc. will have to be passed on to intermediary parties like Athens or others.

9.4.4 Role of the Digital Librarian in Promoting or using Eprint Archives

As far as the Digital Librarian and eprints are concerned, his involvement may be described as follows:

- Realising the importance of a relatively low-cost source for fulltext articles, he should fully exploit this segment of resource. That is, maintain a complete list of archives (URLs) and use them frequently.
- He can co-operate with the institutional authorities in setting up the server, install software, obtain training for himself and his staff, build the local collection, publicise the importance of self-archiving and so on.
- He can help the author of his institution in self-archiving of their documents into institutional or public archives.
- He can take part in adding suitable meta-data for indexing purposes.

Self Check Exercise

- 6) Briefly describe the tasks a librarian can perform in connection with online bibliographic databases.
- 7) Mention the names of some softwares available for the tasks covered by Q 5.

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

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

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9.5 COPYRIGHT AND LICENSING ISSUES

In the case of printed publications, copyright issues are fairly well-known and accepted. Under the 'Fair Use' clause, librarians can provide a single complete fulltext copy of an article to a patron meant for his personal study and research. Copyright law permits this.

Moreover, if the original version of the printed book is not easily procurable in India, the library may make upto three copies of a book for circulation in the library. However, when it comes to downloading fulltext articles from bibliographic databases, publishers are not that liberal. As copyright laws are silent with respect to digital content, the usage is heavily bound by specific licensing terms and conditions entered into between the copyright owner (usually usurped by publisher from the author) and the user.

Access to and subsequent usage (copying, forwarding, storing) are all severely restricted. Institutional customer oriented access methods using IP address, UserID and Password pair, etc. has been discussed already. Number of downloads allowed per year may be specified. Number of persons simultaneously accessing the database may be limited. Forwarding fulltext as an attachment to mail may be prohibited. Usage of CD-ROM databases beyond the period of subscription may be disallowed—but this aspect of usage is being liberalised nowadays. In the case of e-books (monographs), if the library license:

for 2 copies of a certain title, then the software would not permit downloading more than 2 copies at one time. Unless one of the copies is 'returned' to the library (the user may have the softcopy on his e-book reader or his computer but he can not read it once the book is returned), the librarian cannot 'issue' it to others.

When the library provides fulltext access by remote dial-up or off-campus access then he has to ensure that only authorised users access the -contents as per specified conditions.

Copyright residing in the copyright law (or agreement) not only prevents others from mere copying but also confers other rights—rights of translation, rights of abridgement, summarisation, adaptations etc. Therefore, the librarian needs to be aware of further activities connected with the e-content he is allowing access to his users. For instance, if a researcher downloads a fulltext article in German and gets it translated into English on his own, without obtaining copyright clearance from the owner for carrying out translation, then he (the library patron) and the librarian may both be pulled up for copyright violations! The librarian will be unknowingly abetting copyright violations. When the librarian procures a fulltext version of a journal article, after paying copyright fees, say from INGENTA or similar sources (pay per view sites), the copyright fee paid may be only for copying and not for other (say translation) rights.

9.6 LIKELY FUTURE TRENDS

Let us look into some likely trends in the near future with respect to fulltext sources and their usage. We have already seen different meanings of the term Fulltext. All the sources we have seen so far are searchable using many entry points—well defined fields such as author, subject, various numbers, language, etc. However, "fulltext searching" implies searching complete texts.

Since September 2003, Amazon.com—popular Internet bookseller—has been providing "Search Inside the Book" feature. Using this facility, more than 1,20,000 books can be searched fulltext. That is, every word in the complete books is indexed. The buyer can see relevant pages of his interest before deciding to buy. This trend is likely to make fulltext resources more easily searchable and usable. The URL is:

[www.amazon.com/exec/obidos/tg/browse//10197021/ref=amb_center-3_30436/002-7220864-4479209]

Similar to Amazon, Google - the famous Search Engine—is experimenting with indexing and retrieving fulltext academic scholarly articles. An experimental project with the collaboration of MIT and twenty other institutions to make eprint archives searchable via Google is under way. This would make searching easy and popular.

SCOPUS of Elsevier: SCOPUS is a Science-only fulltext service offered by Elsevier. It provides a very comprehensive access point for 13,000 titles taken from 4,000 STM publishers: About 100 Open Access titles are also included (rest are peer-reviewed ones). In addition to journal articles in STM, web-based sources are searched using SCIRUS—a science search engine of Elsevier. The system is hassle free, easy to use and enables the researcher to locate the fulltext in much fewer clicks than other such facilities.

SCOPUS provides complete "forward and backward linking" — it provides links to articles citing the article you are viewing and as well links to articles cited in the article you are viewing. Web of Science, popularly called WOS, (of ISI, USA) is well known for citation linking and fulltext search facility. Compared to that Scopus, WOS is based on 8500 titles only and all of them are not just science - many social science titles are also included. Therefore, Scopus as a unique fulltext source for STM scores better. Scopus takes its data from several databases like EMBASE, Compendex, Medline, and PsychInfo, etc. The Search Front End has been developed after studying how scientists search and what librarians are looking for.

Looking at the above developments, we may safely say that more and more fulltext sources will become accessible and usable in STM area soon.

9.7 SUMMARY

In this Unit we have seen various sources for procuring and accessing fulltext bibliographic databases that include: database vendors, publishers, content aggregators, eprint archives and library consortia. Some non-bibliographic databases offering fulltext have also been briefly mentioned. Apart from sources for fulltext, many examples of such database have been described both in text and in appendix. Information Technology related tasks that a librarian has to handle in connection with providing services using fulltext sources (many common to bibliographic databases also) have been discussed. A few specialised software available for this work—like Athens, Aerial, Roboform, etc) have been discussed. Finally, copyright issues of special relevance to e-content in fulltext databases have been briefly dealt with. Some possible future developments have also been indicated. The next Unit deals with Document Delivery Services, much of which will have a bearing on what you have learnt in this Unit.

9.8 ANSWERS TO SELF CHECK EXERCISES

- 1) List out the Players in the production of distribution and use of fulltext bibliographic databases.

Authors, publishers, learned associations, database producers, content aggregators, library consortia, eprint archives owners, librarians and of course scientists/users, or library patrons.

- 2) How is 'FSO' useful?

FSO stands for Fulltext Sources Online. It is an authoritative, exhaustive listing (directory) of fulltext sources of all types—journals, newsletters, and news wires etc. All resources provided are digital fulltext. The directory is updated twice a year while the online version is updated once a week. As searching the directory via several approaches is possible it is a very useful selection tool.

- 3) List out the fulltext databases from Appendix 1. Indicate the broad subject and whether the database is Indian or Foreign in each case.

S.No.	Title	Foreign or Indian	Subject
1	ABI / Inform Complete	F	Mgmt
2	ACM Digital Library	F	IT
3	ASCE Journals	F	Civil Engg.
4	ASME Journals (+ A M R)	F Engg.	Mech
5	Capitaline	I	Finance
6	CRIS INFAC Ind. Information	I	Finance
7	EBSCO Databases	F	Academic
8	Elsevier's Science Direct	F	STM
9	Emerald Full-text	F	Mgmt.
10	Eurom Euroonitor (GMID)	F	Finance
11	IEEE / IEE Electronic Library Online (IEL)	F	Electrical & Electronics
12	Indian Standards	I	Standards
13	INSIGHT	F	Business & Finance
14	Nature	F	Science
15	ProQuest Science (formerly ASTP)	F	Science
16	Springer Verlag's Link	F	Science

4) What are eprint archives and why are they important sources for fulltext articles?

Eprints are pre-prints and postprints of journal articles. An author can preserve a copy each of his papers in his own or his institution's archive. Such preservation needs confirming to certain standards with respect to indexing words used and the Meta tags used. Eprint archives following standards may be treated as one vast virtual library irrespective of place or server. They are useful as fulltext source as they are free. However, only about 4% of peer reviewed scholarly journal articles are archived this way.

5) Why should we consider Internet sources like Northernlight, Findarticles etc.?

Internet sources like Findarticles.com Northernlights etc provide fulltext articles on the web. They are relatively very cheap compared to other conventional database sources. They are easy to use and search. They act as good supplements to other sources. They are especially useful to student community who cannot afford costly sources and also to business organisations.

6) Describe the tasks a librarian can perform in connection with online bibliographic databases.

- Secure access to his patrons by carrying out tasks such as entering UserID & Password or IP address in suitable servers.
- Install and use specialised software like Athens for remote access.
- Train library users in online searching, articles downloading, archiving etc.
- Ensure that the usage of online resources is in conformity with copyright / licensing stipulations
- Install and utilize software like Aerial for document delivery.
- Provide training to users in library—related computer skills and areas—handling file formats, compression software, browsers, email, ebook reading software, etc.

7) Mention the names of some softwares available for the tasks covered by Q.5 Athens, Aerial, Roboform.

9.9 KEYWORDS

ACM	: Association of Computing Machinery.
ACS	: American Chemical Society. Producer of Chemical Abstracts.
Aries	: Aries is an example of software that simplifies document delivery via fax.
Athens	: Example of Software that helps managing remote access provision to a large number of library patrons; Many databases and different vendors may be involved.
Content Aggregator	: One who collects digital content from a number of small journal publishers and makes them available from a central server after value addition.
DDS	: Document Delivery Service.
Ebook	: A digital version of a book or a monograph.
EBSCO	: EBSCO is a provider of print and electronic journal subscription services, and is involved in research, database development and production.

Eprint	: This term includes pre-prints and post - prints.
FAQ	: Frequently Asked Questions.
FSO	: Fulltext Sources Online - A directory published twice a year by Information Today Inc, USA.
GO	: Government Order. A document of great importance for all concerned with the GO in question.
INDEST	: Indian National Digital Library in Engineering, Science and Technology. A consortium promoted by MHRD.
IP Address	: The address of a computer directly accessible on the internet by anyone. For example: 192.168.1.106.
JCCC	: J-Gate Custom Content for Consortium.
MHRD	: Ministry of Human Resources Development, Government of India.
NISCAIR	: National Institute of Science Communication and Information Resources (formerly INSDOC).
OAI	: Open Access Initiative.
Pay-per-view	: A method by which non-subscribers can download specific articles (fulltext) of their interest by paying specified charges per article.
Post - Print	: A scientific paper after peer review and editorial changes.
Pre-print	: The version of a scientific paper sent to publisher for publication.
Roboform	: Example of software that helps in automatically filling forms while surfing the net.
Scopus	: A fulltext Science Only Service started by Elsevier in late 2004.
STM	: Science, Technology and Medicine.
WOS	: Web of Science - of ISI, USA.

9.10 REFERENCES AND FURTHER READING

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9.11 IMPORTANT URLS IN THIS UNIT

S.No.	Institution	URL
1	AP Govt. GOs	http://apts.gov.in/apgos
2	Ariel	http://www.infotrieve.com
3	Athens	http://www.athensams.net
4	BLLD	http://www.bl.uk/services/document/dsc.html
5	Chemical Abstracts	http://www.acs.org
6	Dialog india	http://www.dialog.com/home/
7	Ebsco	http://www.epnet.com
8	Elsevier	http://www.sciencedirect.com
9	Emerald	http://Iris.emeraldinsight.com
10	Eprint Archives	http://archives.eprints.org
11	Eprints Handbook	http://software.eprints.org/handbook
12	Findarticles	http://www.findarticles.com
13	FSO	http://www.infotoday.com
14	Indian statistics	http://www.indiastat.com
15	Indigene	http://www.indegene.com
16	Indmed	http://Indmed.nic.in
18	Jccc	http://j-Gate.informindia.co.in
19	Jccc@helinet	http://203.200.41.71/jccc
20	Jccc@indest	http://jccc-indest.informindia.com
21	Jccc@tb-cear	http://www.jccc-tbcear.informindia.co.in
22	Jccc@vic	http://jccc-vic.informindia.co.in
23	Lexis-Nexis	http://www.lexisnexis.co.in
24	Manupatra	http://www.manupatra.com
25	NISCAIR	http://www.niscair.res.in
26	orthernlights	http://www.northernlights.com
27	Questia	http://www.questia.com
28	Roboform	http://www.roboform.com
29	Sohonet India	http://www.Sohonetindia.com
30	VIC	http://www.vic-ikp.info
31	Vidyanidhi	http://www.vidyanidhi.org.in
32	Xanedu	http://www.xanedu.com

Details of Fulltext Databases available via INDEST Consortium

1) ABI Inform

The ABI / Inform is one of the world's first electronic databases. It has been a premier source of business information for more than 30 years. The database contains content from thousands of journals that help researchers track business conditions, trends, management techniques, corporate strategies, and industry-specific topics worldwide. It consists of 1,800 Fulltext journals and 2,000 journals that are indexed and abstracted. The resource is offered on to Web with CD ROM backup.

Resource	: 1,800 full-text journals + 2,000 journals indexed
Print-base	: No
Media Web	: with CD ROM backup
Back-files	: 1985-Present; 1971-1984 backfile
Archival Access	: On CD ROM
Simultaneous Access	: Unlimited
Accessible to	: all the IITs and IISc. (Except IIT Guwahati), IIMs, NITIE and IIITM

2) The ACM Digital Library

The ACM Digital Library incorporates digital versions of works published by ACM since its inception. The major components of the resource is an enhanced version of the ACM Digital Library plus an extended bibliographic database, consisting of more than a quarter-million citations of core works in computing. The ACM Digital Library hosts over 1,03,000 full-text articles from ACM journals, magazines, and conference proceedings and half million bibliographic records with about 2,50,000 links to full bibliographic information and 70,000 further links to Fulltext resources.

Resource	: 30 full-text journals + conference proceedings + others
Print-base	: No
Media	: Web with CD ROM backup
Back-files	: Since inception
Archival Access	: On CD ROM
Simultaneous Access	: Unlimited
Accessible to	: IITs & IISc, NITs, IIMs, NITIE and IIITM

3) ASCE

The American Society of Civil Engineers (ASCE) is recognized globally for its significant contribution and dedication to the advancement of science and education in the civil engineering profession. The ASCE publishes 29 journals, periodicals and transactions that cover a comprehensive range of the civil engineering profession. ASCE journals are highly cited and are most relevant to the civil engineers for exchanging technical and professional knowledge. Information published in the journals of ASCE forms archival records not only of the technical advances of the ASCE but of the civil engineering profession as a whole.

Resource	: 29 journals, transactions, magazines
Print-base	: Yes and available at discounted prices for INDEST Members
Media	: Web through OJPS platform of AIP. OJPS platform shall be renamed in January 2004 to Citation
Back-files	: 1995 onwards
Archival Access	: On CD ROM (on termination of subscription period)
Simultaneous Access	: Unlimited

4) ASME

The American Society of Mechanical Engineers is a non-profit educational and technical organisation serving a worldwide community of mechanical engineers. The ASME conducts one of the world's largest technical publishing operations. The Society holds more than 30 technical conferences and 200 professional development courses each year. The ASME promotes and enhances the technical competency and professional well-being through quality programmes and activities in mechanical engineering, better enables its practitioners to contribute to the well-being of humankind through its publications that include 19 journals

Resource	: 19 journals, transactions, magazines
Print-base	: Yes and available at discounted prices for INDEST Members
Media	: Web through OJPS platform of AIP. OJPS platform shall be renamed in January 2004 to Citation.
Back-files	: 2000 onwards
Archival Access	: On CD ROM (on termination of subscription period)
Simultaneous Access	: Un-limited
Accessible to	: IITs and IISc. & IIMs, NITIE and IITM

5) CAPITALIZE

Capitalize 2000 is a corporate database covering more than 10,000 listed and unlisted Indian companies. Capitalize is the foremost Indian corporate database, being used by all leading financial institutions, security firms, commercial banks and educational institutions. Being marketed for the last 18 years, Capitalize has the USP of covering the largest number of data points for every company - as many as 1,400. The major features are as follows:

- 1) More than 10,000 listed and unlisted companies
- 2) Industry-specific formats for presentation of balance sheet and P & L data. It has seven formats: General, Banks, Finance, Shipping, Hotels, Power and Software
- 3) More than 1,400 data fields per company in the financial section. This encompasses 10+ years' balance sheets, P & L, schedules and notes to accounts. Also, funds flow, reported cash flow, foreign data, power & fuel consumption, research & development
- 4) Non-financial information cover: List of directors, bankers, collaborators, plant and marketing office locations, company biographical data, expansion plans and credit rating information.
- 5) Quarterly results, segment - wise results, trailing 12 months results, comparison between financial aspects of company, sector, business house, etc.

- 6) Common size ratios for b/s, P&L, funds flow. Twenty key financial ratios like debt—equity ratio, quick ratio, interest coverage ratio etc. Simple and compound growth.
- 7) Director's report, Auditors' report, Chairman speech, corporate governance report, management discussion, etc.
- 8) Value added reports like analysts meet coverage, AGM coverage, research reports, quarterly results analysis, interviews with CEOs, chairman, etc.
- 9) Sector reports and sector trends of more than 50 industries like cement, steel, automobiles, banking, etc.

Accessible to : IITs and IISc. (Except IIT Guwahati), IIMs

6) CRISIL

CRISIL Business Information products and services comprises accurate and reliable news, information, analysis and forecasts on the Indian economy, industries, companies and financial markets.

CRIS INFAC Industry Information Service presents a detailed and comprehensive analysis of the current trends and the long-term performance outlook on 41 industries in India. It includes the evolution of an industry, the regulatory environment, cost structures, nature and extent of competition, global trends along with statistical information on capacities, production, imports-exports, domestic and international prices, consumption patterns. This information is updated a regular basis and the 3-5 years long term outlook is updated on an annual basis.

Accessible to: IIMs

6) EBSCO Fulltext Sources

a) Business Source Premier

Business Source Premier, designed specifically for business schools and libraries, is the world's most comprehensive index of business journals, magazines and other sources. This file contains indexes and abstracts for more than 3,800 business-related periodicals with back coverage as far as the first half of the 20th century for many leading scholarly journals. It also includes the research community's foremost business thesaurus as well as searchable citations (a.k.a. linked, cited references) for more than 1,100 academic journals. In addition, this database provides Fulltext for more than 3,000 periodicals, including nearly 1,000 Fulltext peer-reviewed journals, the most found in any business database.

Business Source Premier is the most comprehensive archive available for business journals, offering hundreds of thousands of peer reviewed business articles in PDF prior to 1985. Post-1985 coverage is also unparalleled with current Fulltext from leading journals in every area of business, including marketing, management, MIS, POM, accounting, finance, econometrics, economics, international business, and more.

The database also includes other sources such as hundreds of Fulltext country economic reports from eight different providers (including the EIU), hundreds of Fulltext reference books and scholarly monographs, hundreds of industry reports, and thousands of detailed company profiles. This database is updated daily.

b) Academic Search Elite

Academic institutions worldwide depend on this database for scholarly information. Academic Search(tm) Elite contains Fulltext for 1,833 journals. The database includes PDF images for the great majority of journals; many of these PDF's are native (searchable) or scanned-in-color. The diverse content is a valuable resource business-oriented libraries. This scholarly collection provides Fulltext journal coverage for nearly all academic areas of study - including social sciences, humanities, education, computer sciences, engineering, physics, chemistry, language and linguistics, arts & literature, medical sciences, ethnic studies, etc.

3,232 Abstracted and indexed journals

1,833 Fulltext journals 2,351 Peer-reviewed, abstracted and indexed journals

1,298 Peer-reviewed, Fulltext journals

c) TOC Premier

TOC Premier(tm) provides access to the most up-to-date table-of-contents information for over 22,000 journals. This collection was created to provide users with a comprehensive, unduplicated list of titles, which account for the more than 22 million records in this citation-only database. Records in TOC Premier are culled from three vast resources: EBSCO Publishing's entire collection of existing proprietary databases, EBSCOhost Electronic Journal Service (EJS), and the British Library Document Supply Centre, the leading document provider in the world. Citations in TOC Premier date back to the 1960's, and the database is continuously updated.

Accessible to: IITs and IISc. (Except IIT Guwahati), IIMs

7) ScienceDirect

ScienceDirect is the web-based interface to the full-text database of Elsevier Science journals and Academic Press (Ideal), one of the world's largest providers of scientific, technical and medical (STM) literature. The ScienceDirect offers a rich electronic environment for research journals, bibliographic databases and reference works. The database offers more than 1500 scientific, technical and medical peer-reviewed journals, over 59 million abstracts, over two million full-text scientific journal articles, an expanding suite of bibliographic databases and linking to another one million full-text articles via CrossRef to other publishers' platforms.

IITs and IISc would get unlimited and complete online access to all 1500 electronic journals published by the Elsevier Science and Academic Press. Moreover, Elsevier Science also guarantees a fixed maximum price increase of 5.0 % on print journals as against average increase of 10%. All category II institutions including NITs will get access to 225 journals (two subject categories, namely, Computer Science & Engineering and Technology) of Elsevier Science available in Science Direct database.

Resource	: 1500 journals published by Elsevier Science and Academic Press
Print-base	: Yes, Participants are required to maintain their print subscription
Media	: Web
Back-files	: 1995 onwards
Archival Access	: Offered on the cost of preparing data set
Simultaneous Access	: Unlimited
Price-cap on Print	: 5%
Accessible to	: IITs and IISc.

8) Emerald

- Emerald publishes the world's widest range of management and library & information services journals, as well as a strong specialist range of engineering, applied science and technology journals. Emerald was established in 1967 by a group of senior academics in the name of MCB University Press, a publishing house that focused on niche management disciplines including strategy, change management, and international marketing.

In 2001 MCB University Press adopted the name Emerald

Nearly 42,000 searchable articles from over 100 Emerald journals in Subjects like: management, HRM, Marketing, Librarianship, Mechanical Engineering, Electronic and Electrical Engineering are available. Online archives go back to 1989.

Accessible to: IITs and IISc. (Except IIT Guwahati), IIMs

9) GMID

The Global Market Information Database (GMID) provides key business intelligence on countries, companies, markets and consumers. It is an integrated on-line information system covering over 350 markets and 207 countries. GMID integrates research across the following categories of information:

- **Statistics:** Consolidates information on consumer lifestyles, retailing, countries, consumer market sizes and forecasts.
- **Analysis:** Euromonitor's in-depth market analysis reports, Major Market Profiles and journal articles covering consumer, industrial and service sectors. Also accessible are reports focusing on consumer lifestyles and the retailing industry.
- **Companies:** Profiles of leading FMCG companies along with financial, market share and brand information.
- **Sources:** All information sources stored on Euromonitor's internal databases.

Key benefits of GMID

- One-stop source for international consumer market and competitor intelligence.
- Fully integrates a global databank with detailed analysis for a complete understanding.
- Standardised category definitions allow the user to compare trends in product markets worldwide.
- On-line analysis tools enable the user to manipulate, recalculate and compare data.
- Provides key findings from a uniquely comprehensive research programme including primary and secondary research in the field.
- New research is added as soon as it is available, ensuring access to the most up-to-date information.

Accessible to: IITs and IISc. (Except IIT Guwahati), IIMs

10) IEEE/IEE Electronic Library

The IEEE/IEE Electronic Library (IEL) covers almost one third of the world's current electrical engineering and computer science literature, providing unparalleled access to publications from the Institute of Electrical and Electronics Engineers (IEEE) and the Institution of Electrical Engineers (IEE). The resource covers more than 9,50,000 documents from over 12,000 publications, including 120 journals, transactions, magazines, and conference proceedings, IEEE Standards. More than 25,000 new pages are added per month. It provides access to more than two million full-page PDF images, including all original charts, graphs, diagrams, photographs, and illustrative material.

Resource: 120 journals, transactions, magazines, conference proceedings, Standards

Media: Web;

Back-files: 1988 onwards plus select legacy content dating back to 1950.

Archival Access: Archival data free of charge after five years continuous subscription to IEL for Cat. I and II. Link to Print ASPP Package is made available at a highly discounted rates to level I and Level II INDEST

Accessible to: All Categories

11) **Indian Standards**

The entire collection of 18,000 odd Indian Standards is included in this Database. The database is updated once in two months/six months, as per subscription order. The search engine allows you to identify, view and print Indian Standards by Standards Number, Standards Title, Text in the Scope of the Standards, and search-in-search (Nested search). You can also search for New and Revised standards. Segments of Indian Standards are Civil Engineering, Chemical Engineering, Electro technical, Food and Agriculture, Electronics and Telecommunication, Basic and Production Engineering, Medical Equipment and Hospital Planning, Management & System, Mechanical Engineering, Petroleum, Coal and Related Products, Metallurgical Engineering, Water resources, Transport Engineering and Textile.

Accessible to IITs and IISc., NITs

12) **INSIGHT**

Asian CERC, presents INSIGHT—The Complete Research Platform. It offers a comprehensive knowledge-based service, which includes in-depth information on corporates, mutual funds, primary and secondary markets, classified news, research and select briefs on current events. Industry analysis reports coverage encompasses industry framework, domestic scenario, markets for products including detailed study on exports and imports, demand trends, product pricing, government regulations, financial performance of major players including their market positions.

Insight offers instant and accurate information on corporate fundamentals of 8000+ listed and unlisted companies and PSUs over the past 14 years, financial information on corporates, which is classified into more than 260 industrial sectors with complete break-up. It also provide single window access to 35,000 annual reports and prospectus of companies dating back to 1995

Resources Information on 8000+ Companies and PSUs, 260+ Industrial Sector's Financial Information, 35,000 annual reports

Accessible to IIMs

13) **NATURE**

Nature is a flagship magazine of Nature Publishing Group (NPG). Launch in 1865, it is the world's weekly scientific journal. Nature Genetics was the first Nature research journal that followed after 123 years. Now, in 2004, NPG publishes nine Nature Research Journals..

Accessible to IITs and IISc. , NITs

14) **ASTP**

The Applied Science & Technology Plus (ASTP) is a CD-ROM database (with access to the Web). The database provides indices and full abstracts to more than 556 key science and engineering titles, plus full-image of 160 titles. All titles are indexed from 1994 onward; the database is updated monthly. The resource is offered on Web with CD ROM backup. While IITs and IISc have online access to ASTP, the NITs, SLIET, ISM and NERIST get Web-based access as well as backup on CD ROM.

Resource 160 Full-text Journals + 556

Indexed and Abstracted

Print-base No

Media Web with CD ROM backup

Back-files 1994 onwards

Archival Access On CD ROM

Simultaneous Access Un-limited

Accessible to NITs and Web access (without CD backup) to all the IITs and IISc. for one year

15) **Springer's Link**

The Springer's Link is the online e-books and e-journals service from Springer Verlag, one of the world's leading scientific publishers. Key subject areas include: Mathematics, Computer Science, Physics, Astronomy, Geosciences, Chemistry Engineering and Medicine. The resource includes over 400 current journals of the highest quality, as well as more than 20 book series. Currently over 3,40,000 full-text articles are available in Springer Link.

Resource 300 journals



UNIT 10 DOCUMENT DELIVERY SERVICES

Structure

- 10.0 Objectives
- 10.1 Introduction
- 10.2 Historical Perspective
- 10.3 Document
- 10.4 Document Delivery Service
 - 10.4.1 Modes of Document Delivery Service
- 10.5 Electronic Document Delivery Service
 - 10.5.1 Advantages of Electronic Document Delivery Service
- 10.6 Steps in Document Delivery
- 10.7 Some Document Supplying Agencies
- 10.8 Copyright Facilitators
 - 10.8.1 Copyright Licensing Agencies
 - 10.8.2 Copyright Clearing Agency of India
- 10.9 Summary
- 10.10 Answers to Self Check Exercises
- 10.11 Keywords
- 10.12 References and Further Reading

10.0 OBJECTIVES

After studying this Unit, you will be able to understand:

- the concept, purpose and benefits of efficient and effective document delivery system;
- the different steps involved in the process of document delivery; and
- the different modes of document delivery and how the current computer and communication technologies are used for speedy document delivery.

10.1 INTRODUCTION

Document delivery means providing the document(s) required by the user(s). In this process speed of supply is important. If a document (book, journal article, report, etc) required by a user is readily available in the library, the job becomes simple. But, often, it won't be the case. The required document is not available in the library and it is to be procured from external sources and provided to the user. Such procurement can be through any of the following ways:

- a) From a vendor if the requested document is available in the market and the purchase is approved by the competent authority.
- b) Through inter-library loan from another library.
- c) Obtaining a copy of the requested document from a document supply center like BLDSC (UK), NISCAIR (formerly INSDOC), etc.

In the present era of information or literature explosion in almost all fields of knowledge and shrinking library budgets in real terms, it has become impossible for any library to build up huge collections to meet all the information requirements of its users. So, libraries have been sharing the documents.

The fast developments in information and communication technologies that have been taking place the world over have provided a great momentum to document supply services in terms of speed, exhaustivity, monetary savings, etc.

This Unit discusses briefly different methods of document delivery and how these methods have undergone changes over the years with the applications of Information and Communication Technologies (ICT).

10.2 HISTORICAL PERSPECTIVE

Before the advent of inter-library loan practice, libraries were providing documents to their users from their own collection. This continued for a few centuries ever since libraries, as repositories of documents for the use of their patrons (or clientele), came into existence. During the first half of the twentieth century, the practice of inter-library loan began and developed during the 1950s and 1960s. However, with the invention of xerography in 1960, it became possible to provide photocopies of documents to the requesting libraries or documentation centers and later to individual requesters. This supply of copies was for retention by the requester and such supply was usually charged for in the initial years. Later, by the 1970s, as the photocopiers came to be used commonly in the libraries and documentation centers, requests for copies of small (thin, with a few pages) documents were often not charged for by the providing libraries. Subsequently, by the 1980's, commercial document supply agencies came into the field knowing the huge potential market for document supply. They have been using ICT to provide documents in electronic / digital form over online communication networks to enable the readers to get copies of complete texts of even bulky documents almost instantaneously.

10.3 DOCUMENT

In the conventional sense, a 'document' refers to print or engraved material including a book, periodical publication, microfilm, photographs audio- visual record, etc. Further, documents are categorised into microdocuments and macrodocuments. The contents of microdocuments are small in length, usually on a narrow topic or subject area while those of macrodocuments are broader in subject coverage and much more lengthy in the size of the text. In a broader sense, documents include all forms of materials in which information is recorded.

In the present digital era, documents are delivered in electronic format because of certain advantages it has. The advantages, which are characteristic of digital/electronic publications, include the following:

Electronic documents need not to be localised.

They can be used from any place without knowing their physical locations.

One document can be accessed by more than one user at a time

They can be easily copied

They can be word-processed, edited, revised, copied, rearranged, reformatted, added to other documents and converted from one format to another.

They can also be stored with great compactness.

They can be read by software.

They can be translated (to some extent) into other languages through machine translation.

10.4 DOCUMENT DELIVERY SERVICE

This service involves supplying of documents to the users on demand, either in original or its copy in print or non-print form, irrespective of the location and form of the original. This activity is considered to be one of the prime activities in any library.

For providing the documents requested by the users, the library may have to tap several sources – other libraries, publishers, vendors, authors, document supply centers/agencies, etc. Quite often, the demand for document supply occurs as a result of information or alerting services like CAS, SDI provided by the library, apart from the usual demands readers place with the libraries for the documents of their interest.

10.4.1 Modes of Document Delivery Service

Libraries endeavour to meet the demand for documents through different methods. These include the following:

- a) Supply from the library collection itself;
- b) By obtaining documents from other libraries on inter-library loan;
- c) By joining library consortia for subscription to journals and databases (particularly full-text databases) and sharing the resources;
- d) By procuring copies of documents from other libraries, documentation centers and commercial document supply agencies like publishers, etc.; and
- e) By accessing and downloading web-based documents.

These modes are discussed below:

a) Document Delivery from Library Collection

This involves providing a document requested by the user by picking it up from the library itself, if it is available. This is usually the easiest or quickest way of document delivery. But, at times, it is not fast enough if the document is already issued to another user.

b) Document Delivery through ILL

In this method, the library contacts another library, which has the required document and obtains it through inter-library loan and delivers to the user who is a bonafide member of the borrowing library. In this process the user usually gets the original document but this borrowing would be strictly as per the terms and conditions of issue, of the lending library. Also, if the requested book is issued to another user of the lending library, it cannot be quickly borrowed on ILL.

c) Document Delivery by Joining Library Consortia

Library consortia are usually formed to achieve sharing of the journal resources savings in subscription costs. In addition, the journal supplier through the consortium approach, who is usually a large publisher, provides online access to full texts to several additional journals over and above the journals subscribed by the consortium. Using this access facility, libraries can meet a member of demands for delivery of journal articles and other documents transacted by the consortium. In India, the consortium being operated by IITs, IISC, NITs, IIMs, etc., titled INDSET is a such consortium.

d) Document Delivery by Processing Copies from Suppliers

This is a common method of obtaining documents demanded by the user if they are not held by the library, nor by the libraries covered by ILL arrangement. However, since procuring documents involves expenditure, this approach for document delivery is used only for bonofide members of the library and when such procurement is approved by the competent authority.

e) **Document Delivery by Collecting it from Websites**

A number of websites of publishers and other document generating agencies usually make fulltexts of their open (not classified) documents available on their websites. Such documents are permitted to be downloaded by those who require them either free or against payment. If a document requested from the library is not held by the library, and if it is available on the web, often the user may himself download the document instead of placing the demand on the library. In spite of this, libraries often have to meet such demands by providing a downloaded document copy.

Self Check Exercise

- 1) Explain various modes of document delivery.

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

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

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10.5 ELECTRONIC DOCUMENT DELIVERY SERVICE

This mode of document delivery refers to supplying documents or their copies to the users by electronic or digital transfer. For this, the library may obtain a document available in the full text database of another library, a publisher or a database producer by any of the following methods:

- i) Online searching and downloading the required document
- ii) Downloading the document from relevant CD-ROM database and transferring it electronically to the user's computer. Necessary payment for such downloading is done by the library and also the document delivery is made within the provisions of copyright law.

10.5.1 Advantages of Electronic Document Delivery

Libraries find it highly advantageous to deliver documents requested by the users, electronically. The advantages are as follows:

- i) **Increase in Efficiency:** Electronic documents are usually made available on the web or other networks, by the concerned publishers or database producers (of course, some are free and some others are chargeable). So, libraries can search online, the availability of the requested document and instantly downloaded it and pass on to the users. Thus, the service can be operated at a great speed.
- ii) **Cost-effectiveness:** Electronic transfer of documents would not involve the charges of packing, postage, etc., as is the case with printed or paper-based documents. Since many libraries would have access to the web via a dedicated telecommunication

link, it would hardly cost anything to download; such cost is negligible even if the downloading takes place in dial-up mode.

- iii) **Simultaneous Availability of the Document to Several Users:** If a document is stored in electronic/digital form, several eligible users can simultaneously access it and download the required portions. Thus, the original remains in the library, even if the document is sent to another library (electronically). Such a facility is obviously not available with the printed versions of documents. If a lending library has only a printed version of a document, it would normally prefer to scan the document (or the required pages) and transmit electronically to the borrowing library, as an email attachment, instead of sending the hard copy by mail.
- iv) **Increased Demands can be Effectively Met:** When a library provides efficient/speedy document delivery service, demand for the service is likely to go up substantially. Even then, efficiency of the service can be maintained by using electronic document delivery method, without increase in staff.

Self Check Exercise

- 2) What is an electronic document delivery service? Explain its advantages.

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

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

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10.6 STEPS IN DOCUMENT DELIVERY

The steps usually involved in document delivery service are the following:

- i) Identification of bibliographic details of the document
- ii) Identification of the supplier of the document
- iii) Making a formal request or placing order for supply
- iv) Processing of the request and supply of the document by the supplier
- v) Receipt of the document by the library and delivery to the user.

i) Identification of Bibliographic Details of the Document

Often, the bibliographic details of the document given by the user are either incomplete or wrong. So, it would save time and effort for the library staff first to check these details. Proper reference tools are to be used for getting the correct details – for books it could be 'Book in-Print', publishers' catalogues or library OPACs' for journal articles, it could be abstracting and indexing journals or international bibliographic databases, etc. The library may create a directory of such reference sources or database producers in relevant subject disciplines.

ii) Identification of the Supplier of the Document

Depending upon the types of document required by the user, the library has to identify a suitable supplier in terms of cost and speed of the supply. Usually, the choice would be among the libraries, document delivery centers, commercial document suppliers, etc. If the request is for a journal article, payment is to accompany the order for the supply. In India, for a scientific or technical article, National Institute of Science Communication & Information Resources (NISCAIR, formerly INSDOC) can be a good source of supply. Alternatively, the IITs, Indian Institute of Science, Bangalore also have excellent collections and they usually supply copies on request. Of course, NISCAIR sends you copies of articles on request on payment at their rates, which can be known from their websites. IITs and IISc would usually like the users to visit them to get copies. It is good idea to keep a deposit account with NISCAIR if the requests are frequent.

Among the foreign document supply agencies; the British Library Document Supply Centre (BLDSC) is the foremost with very large collections to support them. It works very efficiently but is quite expensive. They operate deposit accounts for the users. Details of their service are given Section 1.8 (iii).

Another important foreign source is the National Library of Australia, which also supplies copies of document against payment. Details of this service are given in Section 10.8 (iv). And there are several commercial document supply agencies abroad whose charges would be high in terms of rupees. It would therefore be a good idea to tap Indian sources before approaching foreign agencies.

iii) Making a Formal Request or Placing Order for Supply

After the details of the requested document are verified, and the supplier is located, a formal request or supply order is to be placed. Usually the suppliers demand payment with the order. The traditional way of making payment is by cash or by bank draft. Presently, with the advent of e-commerce, many organisations including book suppliers and other document suppliers accept payments through credit cards.

iv) Processing of the Request and Supply of the Document by the Supplier

The document supply agency receives the request and processes either manually or electronically. In the manual method, someone in the center locates the relevant document and sends it to the copying section. There, a copy of the document is made and the copy goes to the billing/accounting section for noting the payment details and then to Despatch Section for despatch. In an automated processing system, the request is scanned if it is in printed form or downloaded if it is by email and the details of the requested document get matched with the relevant OPAC of the library and if the matching is positive, then the concerned section in the library is intimated electronically for retrieving the document. If the fulltext of the document is available in an electronic/digital form, the document is transmitted to the requester after the receipt of the payment is verified by the software. Such an electronic matching of the request with the OPAC and despatching the document is operated by BLDSC by a system called AUTOMATCH.

v) Receipt of the Document and Delivery to the User

Immediately after document is received, the user must be informed to collect the document if it is in hard copy form. However, the document is only to be issued to him for study and obtained back at the library to form part of the library collection. If it is electronically obtained after making payment, the user is only to be provided access to it. He may be given a copy for retention only when it does not violate the copyright.

3) Explain the various steps in an electronic document delivery service.

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

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

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10.7 SOME DOCUMENT SUPPLYING AGENCIES

Libraries in general, also provide document supply services. They provide documents or their copies, as the case may be subject to copyright regulations, from their own collections if the requested documents are available. Otherwise, they procure the documents (or their copies) from external sources for their member-users and this extra service is usually not extended to others. However, document delivery centers whose objective is to provide documents to any bonafide readers on request, usually against payment, extend this service to any such user. Similarly, document delivery agencies that operate on commercial lines also provide the service by collecting the documents (or their copies) from other sources and they usually do not maintain large collections.

Another important point to be noted in this connection is that certain agencies specialise in document delivery in certain subject disciplines. And some database producers supply copies of documents only from their databases. Some of such agencies are briefly presented below. For further details, the student is advised to visit their websites.

i) **ISI Document Solutions (IDS)**

(<http://www.isinet.com/products/dosdelivery/ids>)

This is a document delivery service offered by Institute of Scientific Information (ISI), Pittsburg, USA. IDS provides full text articles from over 16,000 titles covered in the ISI database which covers scholarly journals in the disciplines of science and technology, social sciences, arts and humanities. Articles can be ordered via OCLC ILL, DataStar, OVID, Dialog, through the basic indexes of ISI and the ISI websites as well as through email, fax, telephone and by mail. The charges include a standard processing fee; a variable copyright fee and the copies are copyright-cleared. These are delivered to users via fax, mail, or courier. Users can open a deposit account with a sum of US \$ 500 and each time ISI will send a statement of balance amount to the user.

ii) **Canadian Institute for Scientific and Technical Information (CISTI)**

(<http://cisti-icist.nrc-cnrc.gc.ca/dosdel/delivery>)

CISTI is one of the world's major sources of information in all areas of science, technology, engineering and medicine. One can access CISTI collection as well as the collection of the Canadian Agriculture Library (CAL). Articles, conference proceedings, books, etc. can be ordered from CISTI via OCLC ILL, DOCLINE, OVID Web Gateway, email, fax, telephone or mail. Articles are delivered via fax, Ariel, or courier. Books are delivered via courier only.

iii) **British Library Document Supply Centre (BLDSC)**

(<http://www.bl.uk/services/document/articles.html>)

The British Library Document Supply Centre (BLDSC) is the world's foremost document supply service. It receives over 4 million requests each year (including over 1 million from other than UK) for all categories of literature. BLDSC is one of the well-known Centres in the field of document supply. It provides a rapid and comprehensive document delivery and interlibrary loan service to researchers and scholars in all kinds of libraries and organisations. It is regarded as the central organisation for interlibrary loans in UK. Though, particularly strong in sciences and technology and medicine, the BLDSC collects materials in all subject areas of human knowledge in many languages. The Centre holds journals, books, conference proceedings, reports, theses, official publications, gray literature of all kinds, music, patents, etc. It supplies documents from its own collection held at Boston Spa and other parts of the British Library. It satisfies almost 83% requesters from its own stock including 45,000 currently subscribed titles and 2,50,000 titles of back issues of journals. Documents of any length and data can be ordered from BLDSC via OCLC/ILL, Dialog Data Star, ARTTel, ARTEmail, British Library Automated Information Service (BLAISE)/ LINE, telephone, fax and mail. Documents supplied are copyright cleared because it has direct agreement with publishers and copyright clearing agencies in United Kingdom. Articles are delivered via fax, Ariel or mail. Books are delivered via airmail. Billing can be through the NELINET monthly statement and/or the Interlibrary loan Fee Management (IFM) option. BLDSC provides two ways for passing the requests. Organisations or libraries can request document on loan or they can order documents through the Article Direct Service of BLDSC. Each user organisation must register with the BLDSC and establish an account before using the Library Privilege Photocopy Service (formerly known as International Photocopy Service). Individual user also needs to open his customer account with BLDSC with minimum deposit of Pound 100 or US\$160. Payment can also be made through credit card or through the Web Order Form or a perform invoice can be sent through fax or email. One article, regardless of length, airmail delivery cost comes to Pound 7.25 or US\$11.50. If document is taken on loan, the present charges for airmail delivery is Pound 13.25 or US \$21.25.

iv) **National Library of Australia**

(<http://www.nla.gov.au/webpac/>)

The National Library of Australia's Document Supply Service (NLADSS) is the Australia's largest document delivery service. The catalogue of NLA provides information on its holdings. The majority of materials held at the library are available for loan. Some of the materials, however, are part of a special collection and is not available for loan. Individuals who wish to use library materials need to contact their institution library or local public library to arrange for them to borrow the materials on their behalf. Since June 1, 2000 NLADSS has ceased accepting vouchers as payment for inter library loans and document supply. In place of this, libraries, using the NLADSS, can choose the following methods of payment:

- Kinetic Document Delivery (KIDD) payment service.
- Monthly account (payable by cheque or credit card).

v) **Inforetrieve – The Article Store**

(<http://www.inforetrieve.com>)

Inforetrieve has assembled one of the world's largest libraries of articles and journal contents, through ongoing partnerships and alliances with publishers and content producers. It provides copies of published documents, in accordance with copyright law. It uses a network of libraries, electronic resources, publishers and other primary document suppliers to deliver the documents. This service claims to fulfill 95% of the users documents demand. Articles can be ordered from Inforetrieve via OCLC ILL, Web, e-mail, fax, and telephone.

Articles are copyright cleared and delivered to the user via Ariel, fax, mail, or courier. Ariel is a commercial software package, produced by the InfoRetrieve, which sends and receives documents as TIFF or PDF files over the Internet. It must be installed on the requester's workstation in order to use this delivery method.

vi) **Ingenta Journals**

(<http://www.ingenta.com/>)

Ingenta Journals was launched in May 1998 and now it offers a single point of free access to the abstracts of over 9,00,000 full text articles from over 2800 academic and professional journals from over 35 leading publishers. It provides documents to more than 3 million users annually. It allows any one any where in the world to browse and search database of articles free of charge and to view titles of contents, bibliographic information and abstracts. More than 8000 academic, research and corporate libraries, institutions and consortia from all over the world are currently using this service. Subscribers can view full text articles free of cost whereas non-subscribers have to pay for that. Users can order documents for immediate electronic delivery and payment can be made through credit cards on the screen.

vii) **AskIEEE**

(<http://www.ieee.org/services/askieee/>)

The AskIEEE service is the Document Delivery Service of the Institute of Electrical and Electronics Engineers, Inc which provides photocopies of articles published by the IEEE. It has different levels of delivery options i.e. first class mail, facsimile, etc. All requests are fulfilled from its own collections.

viii) **Chemical Abstracts Service/Document Delivery Service (CASDDS)**

(<http://www.cas.org/support/dds.html>)

The CASDDS supplies most of the documents cited in Chemical Abstracts. It provides photocopies for non-copyrighted publications, publications registered with Copyright Clearance Centre, American Chemical Society publications, and publications from organisations with whom CAS has right-to-copy agreements. It also provides loan service to international customers for a period of 28 days. Documents are supplied through normal post, airmail, fax, and courier. It does not supply multiple copies of a single document.

ix) **OCLC Full Text Option Program**

Using the OCLC/ILL Full Text Option, libraries can request ASCII text documents using OCLC/ILL procedures and workflows. The documents are delivered within minutes of the receipt of the request in the body of e-mail messages. Requesters can use the OCLC/ILL Fee Management service to pay for the supplied documents.

x) **PEAK: Pricing Electronic Access to Knowledge**

(<http://www.umdl.umich.edu/peak>)

PEAK is a research project of University of Michigan in which Elsevier Science and the University of Michigan are working together to create and manage a host service for all 1110 journals published by the Elsevier, including North Holland, Butterworth and Pergamon Press. In this service, user can have unlimited access to a specific article for a fixed price. User can also select and purchase a fixed number of articles for use.

xi) **Science Direct**

(<http://www.sciencedirect.com>)

Science Direct is an online host facility for scientific and technical information. It offers libraries and their users desk top access to remotely stored full text of journals published by the Elsevier Science and other participating publishers. Users can have single user or

multi-user license for one or more year subscriptions. This service is very popular in science and technology libraries all over the world.

xii) **Uncover Desktop Image Delivery**

(<http://www.uncweb.carl.org/uncover/imgfaq.html>)

Uncover offers full text articles from its database from over 2500 journals. Nearly 300 scholarly, universities and trade publishers have granted permission to deliver articles from their publications. It allows users to order articles and to download including images, graphics, photographs, etc. Articles can be delivered by the Uncover after charging handling charges and copyright fee.

xiii) **National Technical Information Service (NTIS)**

(<http://supprot.dialog.com/publications/docdelivery>)

The NTIS is the largest single resource for the government- funded scientific, technical, engineering and business related information available today. It provides access to over 2 million publications covering over 35 subject areas brought out during the past 50 years. Users can make their payment through credit cards or they can open their deposit accounts with NTIS. Documents are delivered by the NTIS through airmail or surface mail.

xiv) **University Microfilms International (UMI) Dissertations Services**

(<http://www.umi.com>)

University Microfilms International offers comprehensive full text document delivery service of dissertations and masters theses in a variety of formats. Documents can be ordered through credit cards or users can open deposit account with UMI. Copies can be had in microfilm, microfiche, soft cover paper or hard cover paper. UMI charges different costs for different countries and different types of users i.e. academics, non-academics, etc.

xv) **United States Patent and Trademark Office (USPTO)**

(<http://www.uspto.gov/patft/>)

United States Patents Full Text and Full Image Database contains two parts:

- 1) Patents Grant Database which includes full text of patents granted since 1976 and full images since 1790;
- 2) Patent Application Database.

Users can search a particular patent document using Quick Search option, Advance Search option and Application Number Search option. They can display the search result on computer monitor or download it or place an order for printed copies to the USPTO.

xvi) **Chicago Public Library**

The Chicago Public Library is one of the Patents and Trademarks Depository Libraries in the United States. The library provides copies of U.S. patents as well as foreign patents. The library holds an almost complete collection of British patents from 1617 to mid-1994 in German patents from 1912 to 1938. The copies can be obtained through the Xerox Copy Centre.

xvii) **DERWENT Publications Ltd.**

The Patents Supply Division of Derwent Publications Ltd offers a comprehensive patent delivery service with very rapid turnaround at low prices. Patents published anywhere in the world and cited in the World Patent Index may be ordered from Derwent. Delivery options available are: normal service, express service, fax service or translated documents from other languages. Order can be placed through any mode and user can open deposit account with the Derwent.

To provide technological information contained in patents or patent related literature through publication service, search service and patent copy supply service, the Government of India established Patent Information System (PIS) at Nagpur in 1980. PIS operates subscriber advance payment scheme. Under this scheme, user interested in availing regular service by way of procurement of patent document, may remit an amount of not less than Rs. 1000/- or in multiples of thereof and open an account in his name. On receipt of payment, the user is allotted a Subscriber Account Number (SAN) by the office of PIS. The charges for the information or service provided are debited to the account and debit-credit statements are sent.

xix) **National Institute of Science Communication and Information Resources (NISCAIR)**

The Indian National Scientific Documentation Centre (INSDOC) now NISCAIR has been offering document delivery service at national level since 1952. The service is provided utilising the entire country's resources including those of National Science Library and the Pilot Electronic Library of NISCAIR. The requests are received by mail, fax, telex and e-mail. The location of required document is identified using the computerised National Union Catalogue of Scientific Serials in India (NUCSSI). Requests from scientific and technical libraries located in the country are received for document delivery. These are sorted out on the basis of availability of source documents. NISCAIR supplies copies of documents from its own library collection of about 8000 periodicals including over 2100 journals in electronic form. Using the local resources, on an average 73% requests are met within 2 weeks, and 85% within 4 weeks. Procurement of copy of document from other Indian or foreign libraries usually takes about 8-12 weeks time. Another form of document delivery service offered by NISCAIR is Contents, Abstracts and Photocopies Service (CAPS) and Full Text Journal Service (FTJS).

xx) **Other Document Delivery Agencies**

Besides these agencies, there are some other national and international document delivery services, which are providing documents in various disciplines. Some of these are:

Information Quest

(<http://www.eiq.com/>)

ACM Digital Library

(<http://www.acm.org/dl/>)

Articles in Physics

(<http://www.ojps.aip.org/>)

Bioline Publications

(<http://www.bioline.org.br/>)

BioMedNet: Internet Community for Biological and Medical Researchers

(<http://www.biomednet.com/>)

ChemPort

(<http://www.chemport.org/html/english/about.html>)

ChemWeb : The World Wide Club for the Chemical Community

(<http://www.chemweb.com/>)

(<http://www.newslibrary.infi.net/noframe2.htm>)

(<http://www.docdeliver.com/>)

(<http://www.elibrary.com/>)

10.8 COPYRIGHT FACILITATORS

A document, not in public domain and coming under the purview of copyright, needs to be copyright cleared from the copyright holder before supply to the user. The supply can be made after getting permission from the copyright owner. To overcome the problems of getting permission from the owner, granting license to the user or documents supplier, to collect copyright fees from the end user and to distribute royalty to the actual owner of the copyright, etc. a need was felt to establish copyright facilitating agencies. These agencies could work as switching system among users, documents suppliers and copyright owners. Some of the western countries have already established copyright licensing agencies in this regard. In India, it is still on experimental stage. The functions of these agencies are to negotiate fees with the copyright holders i.e. publishers, authors, etc. and charge the copyright fees from the users either directly or through clearing house and pay the agreed dues to the copyright holder. Some of the major copyright licensing agencies and copyright clearing houses are discussed below.

10.8.1 Copyright Licensing Agencies

- a) Copyright Clearance Centre (CCC), USA: At the suggestion of the US Congress, a non-profit organisation namely, Copyright Clearance Centre (CCC) was founded in 1978. During the past two and a half decade, it has distributed million dollars royalties to authors of books and contributors to professional journals in the form of articles. The CCC charges a nominal service fee for each work. The copyright holders are required to fill in a Rights Holder Authorisation Agreement with CCC. The CCC offers the following four types of services to its users :
- Academic Permissions Service (APS): On behalf of the copyrights holders, CCC grants permission to academic institutions, academicians and bookshops for photocopies of copyrighted materials for their use in the courses or classroom handouts and royalty, as set by the rights holders, is collected from the users.
 - Electronic Course Content Service (ECCS): Permission is granted by the CCC to the users for the digital use of copyrighted materials for storage in electronic form, electronic course materials through a protected password. This password is issued for a limited period of time.
 - Transactional Reporting Service (TRS): The CCC grants instant permission to libraries, information centers, document delivery centers, document suppliers, photocopying shops, information providers, individuals or organisations involved in information dissemination and documents supply activities. It collects royalty fees as set by the copyrights holders.
 - Foreign Authorisation Service (FAS): Royalties collected for the photocopying of US works in foreign countries is distributed by the CCC under this service.
- b) Copyright Licensing Agency (CLA), UK: The Copyright Licensing Agency (CLA) offers a range of licenses to copy onto and from paper and also electronic copying.

It does not store and deliver documents to the end users. It also acts as an agent of the CCC.

- c) Canadian Copyright Licensing Agency (CANCOPY), Canada: The Canadian Copyright Licensing Agency (CANCOPY) receives royalties from the Government of Canada for the copies made within the Canadian Government. The CANCOPY distributes royalties to the "Copyright Collective in the Province of Quebec" (COPIBEC) or CCC or other agencies, which further pay the royalties to the rights holders. Its functions are almost similar to the functions of the CCC.

10.8.2 Copyright Clearing Agency of India

The Government of India has set up Indian Reprographics Rights Organisation (IRRO). The IRRO has been collectively formed by the Federation of Indian Publishers (FIP), Authors Guild of India (AGI) and some professional associations and individuals. To minimise the activities of infringement of copyrights, at present, unfortunately, we have no licensing agency as established in USA, UK and Canada. On the pattern of licensing agencies like CCC, CLA and CANCOPY, there is a need to have a mechanism of licensing agency in India for granting licenses of copyrights. Similarly, we should also establish a national agency/clearing house for supply of documents to the end users. The copyright clearing house should be well equipped with the latest information and communication technologies and skilled and professional manpower to facilitate users of copyrighted materials. This should work as a facilitator between users and copyrights holders and collect fees from users and distribute royalties to the owners after charging a nominal service charge. Publishers, authors, librarians, academic institutions, government and all those associated with these activities may join hands in this regard. Some efforts have already been made to constitute a Copyright Clearing Agency of India (CCAI), which will grant license to the users on behalf of the rights holders. This can minimise the problem of infringement of copyrights up to some extent.

Self Check Exercise

- 4) List some of the major copyright licensing agencies and copyright clearing houses facilitating document delivery.

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

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

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10.9 SUMMARY

In this Unit, you have learnt about the document delivery service and electronic document delivery service. The different methods of delivery of electronic documents are also discussed in this Unit. How can one evaluate a document delivery system and what should be the evaluation criteria, these are also discussed in this Unit. The different factors affecting the document delivery system are also discussed in this Unit. In appendix of the different document delivery service providers are also enlisted.

10.10 ANSWERS TO SELF CHECK EXERCISES

- 1) The document delivery service means supply of documents to the users on demand, either in original or its copy in print or non-print formats, irrespective of location and form of the original. Some of the modes of document delivery are:
 - Supply from the library collection,
 - Supply through interlibrary loan,
 - By joining library consortia for subscription to journals,
 - By procuring copies from other libraries and document supply agencies,
 - By accessing and downloading web-based documents.
- 2) The method employing electronic technologies for receipt and supply of documents are known as electronic document delivery service (EDDS). In this, the availability of a document at a particular source is known by online searching of holdings database, supply order is placed online and the requested document is transmitted to the requesting library or user, through e-mail or another online delivery mode. The following are the advantages of this method of document delivery:
 - a) Fast or almost instantaneous document delivery
 - b) Cost- effective supply
 - c) Simultaneous delivery of the same document to several requestors
 - d) Ability to maintain the efficiency even with increased demands
- 3) The steps involved in electronic document delivery are:
 - Identification of Bibliographical Details of Document
 - Identification of Document Supplier
 - Making a Formal Request
 - Processing of the request by the supplier and the supply of the document
 - Receipt of the document and delivery to the user
- 4)
 - a) Copyright Licensing Agencies
 - Copyright Clearance Centre (CCC), USA
 - Copyright Licensing Agency (CLA), UK
 - Canadian Copyright Licensing Agency (CANCOPY), Canada
 - b) Copyright Clearing Houses/Documents Suppliers
 - British Library Document Supply Centre
 - Canadian Institute for Scientific and Technical Information

10.11 KEY WORDS

- Document Delivery Service** : The supply of the required document to the end-user on demand, irrespective of the location and form of the original document. It involves the integration of document discovery, location of supplier, request and delivery of document.

Electronic Document Delivery Service	: It refers to the use of electronic technologies in support of document delivery and inter-library lending activities.
Electronic Mail	: The electronic transmission of letters, messages and mail memos through a communication network.
Facsimile	: It is known as "Fax". It is a system of communication in which a transmitter scans a text, photograph, map or other fixed graphic materials and converts the information into signal waves for transmission by wire or radio to a facsimile receiver.
Feedback	: The act of using output from a system as part of input to the system to achieve a greater operational efficiency in the performance of the system.
Internet	: A network of networks; a group of networks interconnected via routers.
Server	: A computer that provides some service for other computers connected to it via a network. A database containing all books records can be located on a server so that several client machines can access it.
Web Browser	: Software program that allows to access web pages on the Internet. Microsoft Internet Explorer and Netscape Navigator are two most popular web browsers.

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UNIT 11 REFERENCE SERVICES

Structure

- 11.0 Objectives
 - 11.1 Introduction
 - 11.2 Reference Service
 - 11.3 Need for Reference Service
 - 11.4 Reference Service Process
 - 11.4.1 Query Analysis
 - 11.4.2 Reference Interview
 - 11.4.3 Refining User Statement
 - 11.4.4 Formulation of Search Strategy
 - 11.4.5 Searching
 - 11.4.6 Notification to the User
 - 11.4.7 Feedback Analysis and Evaluation
 - 11.4.8 Unanswered Questions
 - 11.5 Digital Reference Service
 - 11.5.1 E-mail Reference Service
 - 11.5.2 Real Time Digital Reference Service
 - 11.6 Evaluation of Digital Reference Service
 - 11.7 Major Digital Reference Services Projects
 - 11.7.1 Collaborative Digital Reference Service
 - 11.7.2 Automatic Reference Librarians for the World Wide Web
 - 11.7.3 Virtual Reference Desk (VRD)
 - 11.7.4 24/7 Reference
 - 11.8 Expert Systems in Reference Service
 - 11.9 Future of Reference Service
 - 11.10 Summary
 - 11.11 Answers to Self Check Exercises
 - 11.12 Keywords
 - 11.13 References and Further Reading
- Appendix

11.0 OBJECTIVES

In the Units 8, 9 and 10 of this course you have been told about the services offered by libraries and information centres. In this Unit, you will come to know some of the basic aspects as well as information technology-based reference services provided by the libraries and information centres to their users:

After reading this Unit you will be able to:

- understand the basics of reference service;
- identify the purpose of reference service;

- know the step-by-step process for handling a reference query;
- know the method of conducting reference interview;
- understand various kinds of reference enquiries made by the users and modes of receipt and delivery of information;
- know about the possible applications of expert systems in answering reference queries;
- know how to provide reference service in digital environment;
- study the various kinds of digital reference services, i.e., e-mail reference service, real time reference service, offered by the libraries in western countries;
- study the examples of Virtual Reference Desk, 24/7 Reference and Collaborative Digital Reference Service provided by the Library of Congress and by some other libraries in UK and USA ; and
- know the parameters on the basis of which digital reference service can be evaluated.

11.1 INTRODUCTION

Libraries and information centres offer a variety of information services to their clientele to meet their information requirements. These services may be anticipatory and of responsive type. Anticipatory information services are provided by the initiatives of the library staff whereas responsive information services are provided against the requests made by the users. The first type of requirement is normally met from the in-house collection of documents. Some times users are directed to the source of information or they are just guided by the library staff to find out what is where. The basic objective of library is to save the time of the user and to provide right information as quickly as possible. Towards this objective, libraries and information centres need to plan the collection development appropriately, and use appropriate tools and techniques for quickly locating and retrieving and transmitting information to the users.

Handling reference queries is a professional and skilled job. It requires proper understanding of subject, analytical approach, knowledge of relevant technologies for collection and dissemination of resources. The complete reference process including conducting of reference interview, analysing the query, and searching and providing relevant information to the satisfaction of the users, all have been discussed in this Unit. Major digital reference services, and technologies used for providing these services have also been discussed with examples. Providing reference services in digital environment has also been discussed.

11.2 REFERENCE SERVICE

According to Dr. SR Ranganathan, "reference service is a personal service to each reader in helping him to find the documents answering his interest at the moment pinpointedly, exhaustively and expeditiously". In his view, providing reference service means making contact between the right user and the right book at the right time and in the right personal way.

CA Bunge says, "Reference service, some times referred to as reference and information service, which refers to the personal assistance provided to the information seekers in the pursuit of information". Further, he categorised the reference service in the following three broader categories:

- That which involves either finding the required information on behalf of the information seekers or assisting them in searching information.
- That which develops information seeking skills in the users.
- That which guides information seekers in selecting most relevant appropriate information sources and services.

According to DJ Foskett, "Reference service is currently humanism in practice because the aim is to help people, in a way or other, to secure great happiness through the possession of knowledge".

Margaret Hutchins equated the term reference service with reference work. She says, "reference service includes direct personal aid, within a library, to persons in search of information whatever purpose, and also various library activities especially aimed at making information as easily available as possible".

In the present electronic and communication environment reference service is not only confined to the library users but also to remote users. Some times, it is termed as electronic reference (e-reference) service, digital reference (d-reference) service, virtual reference (v-reference) service, etc. Whatsoever may be the nomenclature, its basic function is to provide point-of-need reference service to information seekers at the place where they are and when they have a query.

11.3 NEED FOR REFERENCE SERVICE

Information is recorded in a variety of documents like books, reports, periodicals, digests, theses, standards, patents and so on. A reader may need a specific type of information for a specific purpose. The number of documents produced is very large, so large that it is impossible for the reader to keep track of its variety and location. Users, often spend much time in locating information required by them. After making a lot of efforts, users some times fail to retrieve required information due to not following the proper search strategy or not having the subject knowledge in the field. Reference librarians are also finding it a daunting task to keep abreast of the new resources that appear daily on various types of recordable media. Here, the reference librarian's main functions are: (1) to keep track of the outpouring of documents in the subjects of the clientele, which his library hopes to serve and (2) to study as closely as possible the information needs of the clientele. He needs to provide instructions, both individual or in groups with the aim of helping the users to become more self-reliant in accessing information sources, to suit the Chinese proverb '*give a man a fish, he will eat for a day, teach a man to fish, he will eat through out his life*'. Thus, one can summarise the need and purpose of the reference service as follows:

- To satisfy the information requirements of the users and demand for intensive services.
- To be in pace with modern tools and techniques developed for providing information services to the information seekers.
- To know the availability and location of required documents in print and non-print formats.
- To evaluate multidimensional growth of libraries and their complexities.

Now, there is an increasing trend towards replacement of human-delivered reference service by the machine-assisted reference service to make it available to remote users. These will be discussed in the later parts of this Unit.

Self Check Exercise

- 1) Explain in simple terms what do you understand by the term 'Reference Service' and how it is needed in a library and information centre?

Note : i) Write your answer in the space given below.
ii) Check your answer with the answers given at the end of the Unit.

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11.4 REFERENCE SERVICE PROCESS

For providing efficient reference service, the reference librarian needs to adopt a systematic approach. This approach involves interaction with the user, understanding of the query and adequate knowledge of reference sources. Sometimes, a very simple question asked by the user becomes unnecessarily complicated due to many reasons—lack of knowledge of reference librarian, communication gap between the reference librarian and the user, for instance, the question was not properly stated by the user or understood by the reference librarian and so on. Therefore, the reference needs to avoid such a situation by getting necessary clarification before the search is started. After proper understanding of question, the reference librarian begins his search from in-house sources, then if the information available is not adequate, searches external sources and finally collects the required information wherever available. During the search process or at the end of the search, the reference librarian should establish dialogue for seeking more clarifications about the relevance of the search results to the user's query. In case the user cannot provide background information on the subject, the reference librarian may consult encyclopedias, handbooks, text-books, Internet sources or any other relevant source. The complete reference process, i.e., from the receipt of an information request till the required information is communicated to the user, can be broken down into a series of decision-making steps. These steps are briefly discussed below:

11.4.1 Query Analysis

When the reference librarian receives a request or query for information, he/she must understand the query in as much depth as is necessary or possible. If subject of the query is not familiar, the reference librarian must get an idea on it by consulting dictionaries, encyclopaedias, handbooks or textbooks. Then he must analyse the query as deep as possible, and prepare a rough search strategy.

11.4.2 Reference Interview

After getting a basic idea of the subject of the query or an understanding of the query (or request), the reference library must make efforts to have a personal interaction with the information seeker or the user to get a precise understanding of the query. He must ask all the questions necessary to get a clear understanding of the query. The questions put to the user must be open-ended, as they allow the user to take off and start talking on the other hand, closed questions limit possible responses to 'yes' or 'no' type answers.

Such an understanding obtained through the interview helps the librarian to formulate his/her search strategy in specific and clear terms and in quickly tapping the right information.

However, if the request for information is from a senior level official or executive, the librarian may not be able to get the opportunity for the interview. In such cases, the librarian must get above information about the subject specialisation of the user or if he is a top official, the context of the information requirement and this information will help in providing the required information with some (acceptable) relevance.

Even if the reference librarian is able to get the reference interview, before conducting the search, he may often need to seek further clarifications during the course of the search to improve the relevance of the information he supplies. To minimize the efforts of seeking clarifications again and again, the reference librarian must design Information Search Request forms and gets it filled up by the requester before conducting the reference interview. A sample Information Search form is given at Appendix-A.

11.4.3 Refining User Statement

Once the reference interview process is over, the next step is to refine the statement of user and transform the user's query into the searchable statement. It involves selection of appropriate terms to be used for searching. Reference librarian may also consult controlled vocabularies, i.e., thesauri, subject heading lists, classification schedules, etc. in this regard.

11.4.4 Formulation of Search Strategy

Formulation of search strategy is a plan for hitting on the right information that answers the user's query. Generally, reference librarian tends to jump immediately into an unfocused search using 'piece meal' or 'hit and miss search' without analysing the search request and formulating systematic search strategy. It is good to spend some time at the beginning of a search in organising and formulating a proper search strategy for a much more productive and efficient search. Such a strategy would involve identifying potential sources, selection among these sources, searching within the sources chosen, etc. He should systematically comb the sources to dig out information. There are a number of steps involved in this process from selection of relevant source or databases, selection of appropriate web sites on Internet, standardizing and grouping of selected terms, combining them using Boolean operators AND, OR, NOT to make a final search statement for searching.

11.4.5 Searching

A quotation from Alice in the Wonder Land:

'If you do not know where you are going, then it does not matter where you end up. If you do not know where you want to go, you probably would not get there. If you do not know where you are going, any road will take you there'.

It means the reference librarian must be precisely clear on what he is going to search; otherwise, he may end up with some other result or irrelevant information. There are different types of searching mechanism—exhaustive, precision, pearl growing, snowball, and situational. The reference librarian can use one or combination of more than one mechanism to formulate search strategy. In an exhaustive type search, efforts can be made to focus on collection of all possible information, which may be of peripheral interest to the user. The 'precision' search is focused to identify the targeted information, which is directly relevant to the user's need. Using the 'pearl growing' technique, the reference librarian starts search from the point where he knows a little on the topic. He begins his search using whatever facts are available and then refines the search strategy step by step. In case the reference librarian is new to the topic being searched, he may consult an expert in the field before search process is started. This type of search is called 'snowball' search. The process of searching may be changed with the change of situation during the course of searching. It depends upon the changing needs of the user, interpretation given by the user during the reference interview, availability and accessibility of resources, permissible time for searching, cost involved and many other factors. This type of search

is called 'situational' search. The reference librarian should also make record of information sources consulted or to be consulted. The record should be very clear and systematic enough to allow someone else to continue the work in the absence of the person who received the question.

If the request can not be fulfilled by the sources available in the library, the reference librarian should not give it up because the world of information do not start and end at his library. He may be able to help the user by drawing the resources of other libraries through data transmission networks. Advantage of information and communication technology, like telephone, e-mail, fax, Internet, etc. may also be taken for the purpose.

11.4.6 Notification to the User

After search process is over, the reference librarian should inform the user and disseminate information in appropriate form as quickly as possible as speed of supply is critically important. Also, the result of the search should be appropriately formatted because presentation and delivery of the result reflects the efficiency and involvement of reference librarian in answering the query. It may be given in printed, audio-visual or any other form acceptable to the user. Supplied information must fulfill the requirements of the user. It must have relevance for him.

11.4.7 Feedback Analysis and Evaluation

No improvement can be made in any system, including reference service, unless it is properly evaluated.

A main component of such evaluation is obtaining feedback from the user on the relevance of the information provided. The reference librarian should therefore seek invariably feedback on the relevance of the information supplied and try to improve the service for further requests so that he can satisfy the users better. It is important to design a feedback mechanism, say, using a performa, and seek feedback against every supply of information. The search methodology or process is to be improved continually based on such feedback. Other components of the evaluation are the speed of supply, the courtesy extended, initiative taken to continue to supply information like the requirement is met, and so on. He should make sure that information provided to the user has been well accepted by him. He should politely ask the user to provide feedback about the relevance of the information, satisfactory level of the service rendered to him, etc. User may make certain comments/suggestions, which may be taken in a positive way for the improvement of the reference service.

11.4.8 Unanswered Questions

No system can be perfect and much less so is the reference service system. As long as reference service is done by humans, errors or deficiencies are bound to occur. However, the reference librarian should always endeavour to create an effective and efficient system. The reference librarian may not be able to provide answers of all questions asked by the user. He might have overlooked the answer in the available sources; the answer might not be available in the in-house collection; or the question might not have definite meaning and answer. If the unanswerable questions of a similar type seem to be recurring, the reference librarian should try to fill the gap in the reference collection through the acquisition group. If the desired information cannot be located from in-house collection, the same may be tried through cooperative or networking arrangement. There are other agencies which have specialisation in certain types of reference services and products, e.g., Ask A Librarian, Ask A Scientist, Ask A Teacher, 24/7 Reference, etc. These agencies may be contacted for such type of questions. The user should not be left with negative response even the question is not answered. He may be suggested the places where he can go and find answer. Even making a telephone call, if necessary, to fix an appointment with another information provider may help to increase satisfaction level of the users. Providing reference service is a complex and multi-process activity therefore, errors are bound to occur. Focus should be on the elimination of errors and to improve the efficiency and quality of reference service.

- 2) Explain the various steps in the 'Reference Service Process'.

Note : i) Write your answer in the space given below.
ii) Check your answer with the answers given at the end of the Unit.

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11.5 DIGITAL REFERENCE SERVICE

In this fast changing technology era, researchers need to find relevant, usable, authentic and verifiable information as quickly as possible. To meet this requirement, libraries and information centres need to augment their conventional reference service using ICT. Using these technologies, libraries maintain digital collections and also access digital or electronic information sources and provide information in digital/ electronic mode. With the emergence of digital libraries and Internet, the concept of traditional reference service has changed. Even many non-library commercial organisations now offering digital reference service to their clientele. While some are free, others need payment. In digital reference service, the web is used as a medium of communication for sending the questions and receiving answers, which is quite useful in providing fast answers to the questions. However, the reference librarian needs different skills for accessing digital information sources and communicating the information to the users.

In the process of providing digital reference service, the reference librarian receives questions via e-mail or web interface, identifies the query and then decides appropriate course of action. He analyses the request and gets the type of information required. The question may also be checked with the archive file, which is usually called Frequently Asked Questions (FAQ) File. The answer may be supplied to him through appropriate mode of communication. Based on the mode of receiving question and delivering information, the digital reference service can be broadly categorized into two groups:

- 1) E-Mail Reference Service.
- 2) Real Time Digital Reference Service.

11.5.1 E-Mail Reference Service

The e-Mail reference transaction involves back-and-forth exchange of information, users would not get any immediate answer. But users can ask a question when they think of it, at any time of the day or night. And they do not have to take time to make a special trip to the library. In other words, the users send e-mail to the library with a reference question, asking whatever information they feel necessary. The library sends reply by e-mail, fax, phone or letter as it finds convenient. In such a case, the controller of all questions initially receives and examines and then routes them to appropriate staff. Technical questions are forwarded to technical staff, circulation related questions to the circulation staff, reference questions to the reference librarian, and so on.

Initially, this service was adapted by the health and engineering libraries, now it has established itself as a basic service in majority of libraries having Internet connectivity. This service has certain advantages to the users:

- Who feel shy and uneasy about asking questions in person, face-to-face or by telephone.
- Who are poor in oral communication.
- Who may not be able to visit library due to certain difficulties in physical movement, living at a long distance from the library, and so on.

Besides above advantages, there are certain disadvantages also:

- Reference librarian cannot establish eye contact or conduct face-to-face reference interview to seek any clarification with the user.
- It is difficult to judge the urgency of the requirement of information.
- To know the degree of the user's satisfaction for further modification of search strategy for providing more relevant answer.
- Speed of asking a question and getting an answer depends upon the volume of e-mail traffic and communication link over the Internet.
- Reference librarian needs to make more efforts in understanding the meaning of the asked question. Sometimes, he misses the focus of the asked question because users often do not clearly express the question.

E-mail reference service also offers the following advantages for the reference librarian as well:

- Reference librarian finds more time to think, plan, chalk out search strategy and finally search the answer.
- Simple or easy questions can also be answered by other staff.
- Reference librarian can devote more time on questions of complex nature. This way the workload of reference process can be distributed among other staff.
- Question can also be diverted to the experts, if required.
- There is no restriction on working time. Question can be answered any time after working hours.
- This mode of receiving and answering questions is very cost-effective.

Library can design a user-friendly request form, which can be filled up by the users through downloading from the library's web site. A sample Digital Reference Service - Request Form is given at *Appendix 'B'*. The user can send a completed request form to the library by clicking a button on the web labeled 'submit' or 'send'. A well-designed Request Form will eliminate problems and provide right framework for finding out what the user really wants to know. There should be a standard format for the Request Form for all types of questions. The Request Form should bear essential instructions and advice about how to complete it. It should be as short as possible so that it takes a little time to complete. Library can reply users by e-mail or in any other appropriate form, acceptable to the users.

The following table gives a quick overview of some of the prominent e-mail reference services currently in operation:

Service	Subject	Payment	Organisation	Remarks
Askme	All	Free	Askme.com	
AllExperts	All	Free	Allexperts.com	
Inforocket	All	Fee-based	Inforocket.com	(Charges from \$5 to \$75)
AskAuntieNolo	Law	Free	Nolo.com	
Find/svp	Business	Fee-based	Findsvp.com	(Charges \$250 per question)
Professional City	Law	Fee-based	Professionalcity.com	(Charges \$25 per question for first 15 minutes and \$18.75 per additional 15 min)

Information is searched by experts and delivered to the users via e-mail. Besides the above, there are other services available where users need to conduct a search for a reference query. Some of them are:

Internet Public Library	(http://www.ilp.org)
Infoplease	(http://www.infoplease.com)
Britannica	(http://www.britannica.com)
Bartleby Reference	(http://www.bartleby.com/reference/)
Internet Library for Librarians	(http://www.itcompany.com/info retriever/)
Electric Library	(http://www.ask.elibrary.com/refdesk.asp)
Mediaeater Reference Desk	(http://www.mediaeater.com/easy-access/ref.html)
Reference Desk	(http://www.referencedesk.org)
Xrefer	(http://www.xrefer.com)

Although these services are available free of charge but some charge nominal fee. For example, Electric Library charges US\$ 80 as annual charge for unlimited access.

11.5.2 Real Time Digital Reference Service

In real time digital reference service, the exchange of information is live (it takes place in real time) between user and reference librarian. This service is still on experimental stage in developing countries because it requires advanced computer technology, faster and better communication connectivity, interactive audio and video capacity and availability of computers at home and work place. This service is not a replacement of conventional or e-mail reference service but a supplement to these services. This service is gaining popularity due to many advantages over the other two services. These include the following:

- This is a synchronous service in which reference librarian responds immediately in real time.
- Reference interview is conducted at a faster pace than e-mail.
- Clarification can be sought online.

- Reference librarian can demonstrate to the user about how to use reference sources, web sites, expert or whom the user should contact. This allows user to walk through the reference source to find answer. In addition to this, Voice Over Internet Protocol (VOIP) allows reference librarian to talk to users and hear them while connected and while locating the sources.
- This service can be offered at any time, any day (24/7 basis).
- Reference librarian can chat with several persons simultaneously.

Against the above advantages, there are several disadvantages also as compared to e-mail reference service.

- The technology is still at premature stage.
- It is a labour-intensive service.
- It makes reference librarian busy in answering the questions because it involves several back-and-forth message transactions. He may not find time to answer the urgently needed questions.
- It is stressful for reference librarian as well as user because one is waiting for other's message.
- For every inquiry, user needs to type questions every time and reference librarian also need to answer in typed form.
- Typing speed and errors occurring during typing in the text cause, both reference librarian and user, difficulties in communicating their messages because real time chatting demands fast and accurate typing speed.

In case the question is found complex in nature and requires more time for searching, the user should be requested to fill the proper form or visit the reference desk.

Real time digital reference service can be provided using chat software, live interactive communication utilities, call centre management software, interactive customer assistance system, bulletin board services software, customer interaction management software, web contact centre software and other Internet technologies. The following are some of the commonly available real time digital reference technologies and these have been used in academic and research libraries in the western countries.

Real Time Digital Reference Technologies:

- 24/7 Reference
- Anexa.com
- AOL Instant Messenger
- ConferenceRoom
- Desktop Streaming
- DigiChat
- eGain Live
- e-Gain Voice
- Group Board
- HumanClick
- LiveAssistance
- Livehelper
- LivePerson
- NetMeeting

- Netscape IRC
- OnDemand
- QuestionPoint
- Rakim
- RightNow Live
- Virtual Reference Software
- Virtual Reference Librarian
- Web Line

Examples of Real Time Digital Reference Services:

The following are some of the frequently used real time digital reference services available for providing reference services:

- Ask A Question
- Ask Now!
- Ask The Librarian
- Ask Us Now
- Ask-A-Librarian
- Chat Reference Assistance
- Chat With A Librarian
- Chat With Us
- Click For Live Help
- E-gateway
- Infochat
- Librarians Online
- Library Chat
- Live Assistance
- Live Library Reference
- Live Online Assistance
- Live Online Reference
- Live Reference Help
- Livehelp
- Need Help?Ask A Librarian
- Questions?
- Real Time Help
- Real Time Reference
- Real Time Reference Help
- Refchat
- RefDesk Live
- Reference Chat
- Reference Librarian Online
- Request It Online
- Talk To A Librarian
- Virtual Reference Desk

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11.6 EVALUATION OF DIGITAL REFERENCE SERVICE

Assessing the quality means judging the quality standard of services that should be provided to the users and how quickly and accurately. The degree of quality varies from library to library because it depends upon a number of internal and external factors directly affecting the library services.

Lankes has laid down the following measures/components for assessing the quality of digital reference services rendered by any library or information centre or organisation.

- **Outcome Measures (Quality of Answers):** Accuracy of response, appropriateness to user audience, opportunities for interactivity, instructiveness, and impacts resulting from the digital reference process.
- **Process Measures (Effectiveness and Efficiency of Process):** Service accessibility, timeliness of response, clarity of service procedures, service extensiveness (percentage of questions answered), staff training and review, service review and evaluation, privacy of user information, user awareness (publicity).
- **Economic Measures (Costing and Cost-effectiveness):** Cost to conduct a digital reference session, infrastructure needed to support quality digital reference service, and impact of these costs on other library expenditures.
- **User Satisfaction (Degree of Satisfaction):** Satisfaction indicators, i.e., accuracy, behaviour of staff, facilities, etc.

Self Check Exercise

- 3) What is a digital reference service? Explain e-mail reference service and real time reference service with examples. What are various measures/components for evaluation of a digital reference service?

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

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

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11.7 MAJOR DIGITAL REFERENCE SERVICES PROJECTS

Brief information about some of the prominent digital reference services projects being undertaken for providing reference services is presented in the following sections:

11.7.1 Collaborative Digital Reference Service (CDRS)

The Library of Congress launched the Collaborative Digital Reference Service in June 2000. At present, more than 100 libraries from various countries are participating in this collaborative venture. Some of the major libraries are Library of Congress, National Library

of Australia, National Agricultural Library, National Library of Canada, Cornell University Library, University of Texas Library at Austin, University of Washington, University of Southern California, Metropolitan Cooperative Library System at Los Angeles, etc. The mission of this project is to provide professional reference service to the users at any time and any where through an international digital network of libraries and information centres. It is a library to library network for asking and answering reference questions. It is an international web-based cooperative network of librarians and experts in various disciplines. It is a worldwide network of libraries in which OCLC builds and maintains a database of profiles of participating institutions, maintains a question - and-answer database system that enables participants to catalogue answers and store them in a searchable/browsable database and provides help in marketing, registration, training and user support.

There are three main components of CDRS:

- 1) *Members Profiles (MP)*, which contain information on strengths and features of the members. It includes addresses (including e-mail), hours of services, collection strengths, staff strengths, what is out of scope, geographical locations of the users served, any special service, average number of questions received, etc.
- 2) *Request Manager (RM)*, software for entering, routing and answering reference questions. It receives, sorts out routes and tracks down the incoming questions and delivers the credible answers to the end user.
- 3) *Knowledge Base (KB)*, a searchable database for questions and answers sets. It is an archive of questions and answers for future use.

An end user can request information through CDRS member-library and then the member-library sends question to the Reference Manager software for processing and routing. The Reference Manager will then search the database of CDRS member-libraries profiles looking for the member-libraries best suited to answer the question. The matches will be made on the basis of data elements as hours of service, including time zones, subject strengths, scope of collections, type of patron served, etc. The matching process will end within a fraction of second. Once the match on a member-library has been made, the question will be sent to that library for answering. Once the question has been answered, it is routed back to original CDRS requesting library via Reference Manager to allow for closing out the case and completing other administrative jobs. The response is sent to the requesting library by e-mail. Simultaneously, the question and answer are stored in the Knowledge Base. The strength of the reference service lies in the strength of the member libraries, RM and KB.

Currently, this is a free service and it delivers reference assistance to researchers any time and any place. It supports reference efforts by combining the power of resources and manpower with the diversity and availability of libraries and librarians everywhere. Using advanced technology that directs questions to the appropriate library based on the subject profiles, this digital network pools librarians' expertise to bring quality and professionalism in on-line reference service. The following are some of the advantages of this service:

- One library is linked to the other libraries for subjects, languages and collections outside its scope and coverage.
- Experienced reference librarians are always available to provide access to collections and resources available in more than hundred libraries and information centres worldwide.
- Librarians and information scientists can add value to reference interactions by obtaining answers to difficult questions from expert librarians at other institutions and organisations.
- Librarian can improve his library's ability to respond more quickly and accurately on a broader spectrum of research.

- Reference service is available beyond normal working hours of the library, i.e., 24 hours a day and 7 days a week.
- Reference transactions are stored in a question-answer knowledge database that can be accessed for ready reference.
- Reference questions can be answered from books, monographs, journals, magazines, citations from online catalogues and licensed databases and references to web sites. The requesting library is notified by e-mail to retrieve the answer from the server.
- This service provides opportunity to highlight the strength of the collections of participating libraries.
- Virtually, an information seeker can access not only his library where he is a bonafide member but also a union of libraries, which has many, times bigger collection than his library.

11.7.2 Automatic Reference Librarians for the World Wide Web

This project was sponsored by the University of Washington to create software agents that possess reference intelligence – a limited understanding of complex technical topics, but a very sophisticated understanding of how and where to find high quality information on the World Wide Web. It works on the basis of wrapper technology. Wrapper technology is a data that precedes or frames the main data or a program that sets up another program so that it can run successfully. This service involves the following steps:

- The user asks a question.
- The Query Router assigns a topic to the query.
- The topic maps to a number of relevant wrappers.
- The parallel web search module sends request via wrappers to the sites.
- Responses from the sites are obtained and sent to the fusion engine for collation.
- User gets the response.

It explores web directories such as YAHOO to find out searchable sites. It queries each searchable site and obtains responses from them. The responses and other information about a given site are used to assign topics to that site. Thus, each searchable site gets a wrapper containing some assigned topics, which are used for matching the topics of the users queries.

11.7.3 Virtual Reference Desk (VRD)

This project is sponsored by the US Department of Education. It is dedicated to the advancement of digital reference and the successful creation and operation of human-mediated, Internet-based information service. The VRD project organizes and provides conferences on digital reference issues for information professionals in libraries and other contexts. The VRD does not actually answer questions, but provides resources and links to experts that offer these services. The basic idea of VRD is that when a user asks a question and that can not be answered by a participating library then it is forwarded to the VRD network for assistance. This service includes:

- **Collaborative Ask A Service:** A network of Ask A Services and volunteer information professionals that ensure users' questions are addressed by the most appropriate experts.
- **The Learning Centre:** A web site for the K-12 community with curriculum-related websites, frequently asked questions, and other previously asked questions.
- **Ask A+ Locator:** A searchable database of high quality K-12 Ask A Services.

The following are some of the Ask A Services, which are Internet based question and answer services that connect users with experts and subject expertise.

- Ask a Hydrologist
- Ask a Linguist
- Ask a Parenting Expert
- Ask a Question
- Ask a Reporter
- Ask a Scientist
- Ask an Archaeologist
- Ask Dr Math
- Ask Mr Calculus
- Ask the Dentist
- Ask the Space Scientist

11.7.4 24/7 Reference

A pilot network established in the California, Los Angeles and Orange County areas to provide real time reference services directly to the library patrons over the Internet. To avail this service a librarian needs a computer with Windows 98, NT or 2000 and a direct Internet connection. This service can be used to:

- Guide the user's browser to the best resources on the Internet with collaborative browsing.
- Communicate with users real time chat.
- Send files, images, power point presentations, etc. to the patron's computer.
- Conduct meetings with up to 20 participants, while sharing web pages.
- Network with others by transferring complex questions to a local or remote expert.
- Access reports, transcripts of sessions with users, and a wide variety of usage statistics on demand.
- Customise the software to integrate with user's website.

Besides the above, there are other projects like, AskERIC, the Internet Public Library, the MAD Scientist Network, etc., which are also in operation.

Self Check Exercise

- 4) What are the major digital reference service projects in operation? Explain their functions.

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

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

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11.8 EXPERT SYSTEMS IN REFERENCE SERVICE

The most promising artificial intelligence technology for libraries and information centres is an expert system. An expert system is a knowledge-based computerized system, which plays a role of intelligent interface for providing access to databases and to obtain relevant information. An expert system contains knowledge about a specialized area, which enables the specialist to formulate search profiles and obtain relevant solutions for various problems. The key feature of an expert system is that it involves modeling the thought processes of human experts who are familiar with the domain of a given problem.

Expert System Design

In reference service it has been observed that a large number of reference queries repeat themselves. Majority of the questions are of ready reference types and these can be answered by directing the user or through available reference sources. User may ask location of source, contact person for a particular type of service, procedure for borrowing and lending of documents, filling up of photocopying requisition form or interlibrary loan request form, etc. Providing reference service is an area, which can largely be benefited by introducing an expert system because it functions like a human expert and it does the same thing what a human expert is supposed to do. It performs question-negotiation process with the user and provides solution by analysing the question, identifying the sources that are likely to answer the question.

While designing models of such system, at the broadest level, focus or emphasis is given to four main components: actors, objects, actions, and relationship.

- **Actors:** Actors are entities that act. Actors are most often people, but in the context of a model, a machine could also be an actor. An information seeker, a computer are all categories of actors. An on-line searcher who sends messages is also an actor.
- **Objects:** Objects are things, which are acted upon. Information-seeking models include a variety of different types of objects. Best examples of objects are information sources - the most common types of objects. There are other types of objects - a reference book, an index in a reference book, a database of reference books, a query, a record in a database, a field in a record, etc.
- **Actions:** Models of reference and search processes often describe actions. To raise a query, recommend, reformulate, look up, explain, evaluate, all are action words that appear frequently in search models. The reference process is often described in terms of the actions that are performed by the reference librarian and the user.
- **Relationships:** Finally, information seeking models are concerned with relationships. A correlation is made among the actors, objects, and actions to get the desired output in an expert system.

Advantages of Using Expert System

Applying an expert system for providing reference service has a number of advantages. These include the following:

- An expert system can be designed to store complete library collections and their locations, which may be difficult for any reference librarian to remember and locate physically.
- A multi-user expert system can serve more users at a time.
- Expert system can work round the clock even when library is closed or reference librarian is on leave.

- Interactive expert system can be used by the user more frequently than to a reference librarian.
- User may ask questions from a long distance rather than approaching to reference desk.
- Expert system in one library can be linked with other libraries which may create a network of libraries thus providing much scope of availability of source to answer the question.

Self Check Exercise

- 5) Explain an expert system, and how an expert system is useful in handling reference queries in a library and information centre?

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

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

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11.9 FUTURE OF REFERENCE SERVICE

It may be very difficult to make certain predictions about the future of reference services. Earlier, the mode of providing reference service was quite different from what libraries and information centres are providing after the advent of Internet. Electronic databases, and particularly on-line databases have replaced printed reference works. A good number of reference sources, i.e., encyclopedias, dictionaries, thesauri, handbooks, directories, etc are available on Internet. Similarly, major abstracting services like, Chemical Abstracts, Physics Abstracts, Engineering Abstracts, etc. are also available on Internet. Thus, in the future users will be less dependent on library and more on the online sources and service agencies providing real time reference services. Users may also tap required information at home by means of a computer. At the same time, the cost of the services will be quite high to afford by the users. And users will continue to get the information at less cost from the library. Also specific and accurate information will be on great demand. Since users often may not be able to find specific information, they have to depend on trained reference specialists. So more expert reference librarians will be needed in the future.

For researchers to be productive and to be able to use information round the clock on 24/7 basis, from any location, the information has to be organised accordingly and made available to the users by the reference librarian. No library can provide reference service entirely based on its own collections, on all types of queries. Therefore, there will be a need to have collaborative ventures for reference service, in which location of reference sources, location of users, time, etc., will not be the constraints. Survivability of reference professionals and existence of libraries and information centres will depend upon the quality and efficiency of reference services provided by them. The future of reference service will also be based on the digital collections and communication links through web, because digital technology has opened new ways of storing and accessing information. Whatever direction and which shape the new technology is going to take in future; it will always help the reference librarian. In the coming era, the reference librarian will need the ability to read the situation in which a user will be able to find the right information on

his own, as and when he requires. Since many non-library organizations have started providing digital reference services to their clientele, libraries and information centres should turn their attention and to compete in the new environment to provide e-reference services and real time reference services. For users, the reference librarian is going to act as a hub if the library is well equipped with computer, Internet and CD-ROMs. Reference librarian and reference service will be a centre of the universe of information in the future.

11.10 SUMMARY

In this Unit, efforts have been made to define reference service and its needs to meet information requirements of the information seekers. A systematic approach to handle reference queries to provide right information at right time has been discussed. On the basis of requirements of the users, reference questions have been categorized into various categories and their mode of receipt and answering. In a modern library or information centre, manual system of handling reference queries can be replaced with computerised and an expert system. Various advantages of developing expert systems and their applications in reference service have been discussed in this Unit. Examples of collaborative digital reference service provided by the Library of Congress along with a group of more than hundred libraries, the Automatic Reference Librarian for the World Wide Web, the Virtual Reference Service and the 24/7 Reference, etc. have also been discussed which may be beneficial for other libraries and information centres which are planning to make a joint venture in this direction. These discussions will help students to understand basic concepts of reference service provided to the clientele manually as well as automatically through computer including their evaluation.

11.11 ANSWERS TO SELF CHECK EXERCISES

- 1) Reference service is a personalized service provided to the user to help him to find out documents answering his interest at the moment pin-pointedly, exhaustively and expeditiously.

Reference service is needed in a library to:

- satisfy information requirements of the users.
- know about the tools and techniques developed for libraries and information centres for providing reference service to its users.
- know the availability of volume and type of documents in conventional and non-conventional formats.

- 2) Reference service process is a process of satisfying specific and recurrent information needs of the users. It involves interaction between reference librarian and user. The following are the steps involved in the reference service process:

- Analysing the queries to understand the specific information requirement of the user.
- Conducting reference interview to ascertain identify exactly the specific information requirement of the user.
- Refining the user statement and transforming the query statement into search terms.
- Formulating the search strategy.
- Searching the information through matching process.
- Notifying to the user.
- Getting feedback from the user and evaluating it.
- Evaluating the feedback received from the user.
- Modifying the search strategy for full satisfaction of the user.

- 3) Digital reference service is an Internet-based question-and-answer service that connects the user with experts in a variety of subject fields and possessing specialized subject or skill experience. In addition to this, experts also provide users with referral to other online and printed information sources. Digital reference service can be broadly categorized into two groups:

E-Mail Reference Service: In this service, the user sends e-mail to the library with a reference question, seeking whatever information he feels necessary. The library sends reply by e-mail, fax, phone or letter as it finds convenient. When a query is sent by a user, the controller of the query in the library first receives it and examines and then routes it to the appropriate people who can handle the query. Technical questions are forwarded to technical staff, circulation-related questions to the circulation staff, reference question to the reference librarian, and so on. Examples of prominent e-mail reference services are: Askme, AllExperts, Inforocket, Xrefer, Reference Desk, Infoplease, etc.

Real Time Digital Reference Service: In real time digital reference service, the exchange of information is live (it takes place in real time) between the user and the reference librarian. Examples are: Ask A Question, Ask Now!, Ask The Librarian, Real Time Reference, Virtual Reference Desk, etc.

The followings are the some of the measures/components for assessing the quality of digital reference services rendered by any library or information centre or organisation.

- Outcome Measures (Quality of Answers)
- Process Measures (Effectiveness and Efficiency of Process)
- Economic Measures (Costing and Cost-effectiveness)
- User Satisfaction (Degree of Satisfaction)

- 4) Some of the major digital reference service projects are:

- *Collaborative Digital Reference Service (CDRS):* This project was launched by the Library of Congress in June 2000. At present, more than 100 libraries from various countries are participating in this collaborative venture. It is a library-to-library network for asking and answering reference questions. Conceptually, the CDRS has three components:
 - *Members Profiles (MP)*, which contain information on strengths and features of the members including addresses, hours of services, strengths of collection and staff, what is out of scope, geographical locations of the users served, any special service, average number of questions received, etc.
 - *Request Manager (RM)*, a software for entering, routing and answering reference questions including receiving, sorting out routing and tracking down the incoming questions and delivering the credible answers to the end user.
 - *Knowledge Base (KB)*, a searchable database for questions and answers sets including archiving of questions and answers for future use.
- *Automatic Reference Librarians for the World Wide Web:* This project was sponsored by the University of Washington to create software agents that posses reference intelligence – a limited understanding of complex technical topics, but a very sophisticated understanding of how and where to find high quality information on the World Wide Web. It works on the basis of wrapper technology.

- *Virtual Reference Desk (VRD)*: This project is sponsored by the US Department of Education. It is dedicated to the advancement of digital reference and the successful creation and operation of human-mediated, Internet-based information service. The VRD does not actually answer questions, but provides resources and links to experts that offer these services. This service includes:
 - *Collaborative Ask A Service*: A network of Ask A Services and volunteer information professionals that ensure users' questions are addressed by the most appropriate experts.
 - *The Learning Centre*. A web site for the K-12 community with curriculum-related websites, frequently asked questions, and other previously asked questions.
 - *Ask A+ Locator*: A searchable database of high quality K-12 Ask A Services.
 - *24/7 Reference*: A pilot network established in the California Los Angeles and Orange County areas to provide real time reference services directly to the library patrons over the Internet.
- 5) Expert System is a knowledge-based computerised system, which plays a vital role in making interface for providing access to databases and to obtain relevant information. It contains knowledge about the subject areas, technique to formulate search profiles and obtains appropriate solutions for the problems. Advantages of an expert system in handling reference queries are:
- An expert System is helpful in storing complete library collections which can be located within a short duration of time.
 - It can be a multi-user accessible system.
 - It can work beyond the prescribed time, i.e., round the clock.
 - Reference queries can be made from remote places and answers received.
 - Many libraries can be linked electronically to pool their resources, which can create an exhaustive collection.
 - The system can save the search result for future use.
 - It can also be helpful in evaluation of library collections, and their usefulness.

11.12 KEYWORDS

Expert System	: It is a knowledge-based computerized system, which plays a role of intelligent interface for providing access to databases and to obtain relevant information.
Reference Query	: Any request by a library user for information or assistance in locating information.
Reference Service Process	: It is a process of answering questions or satisfying specific, recurrent information needs.

INFORMATION SEARCH REQUEST FORM

Please enter your specific information requirement. The specificity would help us to analyse your topic to provide relevant information. Please use one Form for each request.

1. Type of Organisation ☐ Research ☐ Academic ☐ Others

2. Official Address:

Name.....Designation.....

Organisation /Institution.....

Place.....City.....PIN.....

E-mail.....Phone.....Fax.....

3. Name of your research/project, Head/Guide.....

4. Title of your research/project work.....

5. Description of research/project work (about 100 words. Please attach a sheet if necessary).....

6. List subject keyword(s) of your research/project work. (Explain abbreviations/synonyms, if any, and use CAPITAL LETTERS only)

Keywords

Abbreviations/Synonyms

- | | | |
|----|-------|--|
| 1. | _____ | |
| 2. | _____ | |
| 3. | _____ | |
| 4. | _____ | |
| 5. | _____ | |
| 6. | _____ | |

7. Are you aware of any relevant papers published on the same topic as your research/project ☐ Yes ☐ No

(If 'Yes' please give title, author, journal/conf. Name, volume number, and year)

a)

b)

8. Specify the format in which information is required?

☐ Bibliography only ☐ Bibliography with Abstracts

9. Type of documents you wish to include?

☐ All categories	☐ Journal papers	☐ Conference papers
☐ Standards	☐ Patents	☐ Others (Pl. mention)

10. Languages you wish to cover?

☐ English

☐ All Languages

Signature:

Signature of the

Date:

Research/Project Head/Guide

For Office Use:

Search Strategy

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Sl.No.	Database(s) Searched	Period	No. of References
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1.

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THE PEOPLE'S
UNIVERSITY

DIGITAL REFERENCE SERVICE - REQUEST FORM

Name:

Designation:

Library Membership No :

E-Mail Address :

Telephone No: (Office): (Residence):

Fax:

Enter your request here (please state clearly in about 50 words or more. Better specificity will help us in providing specific information. Use the space on the reverse if necessary):

.....

Language acceptable(Please tick):___English/German/Russian/others please specify

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Preferred database(s) or source(s) to be searched (if known):

Preferred format: Print/Soft copy

Submit

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THE PEOPLE'S
UNIVERSITY

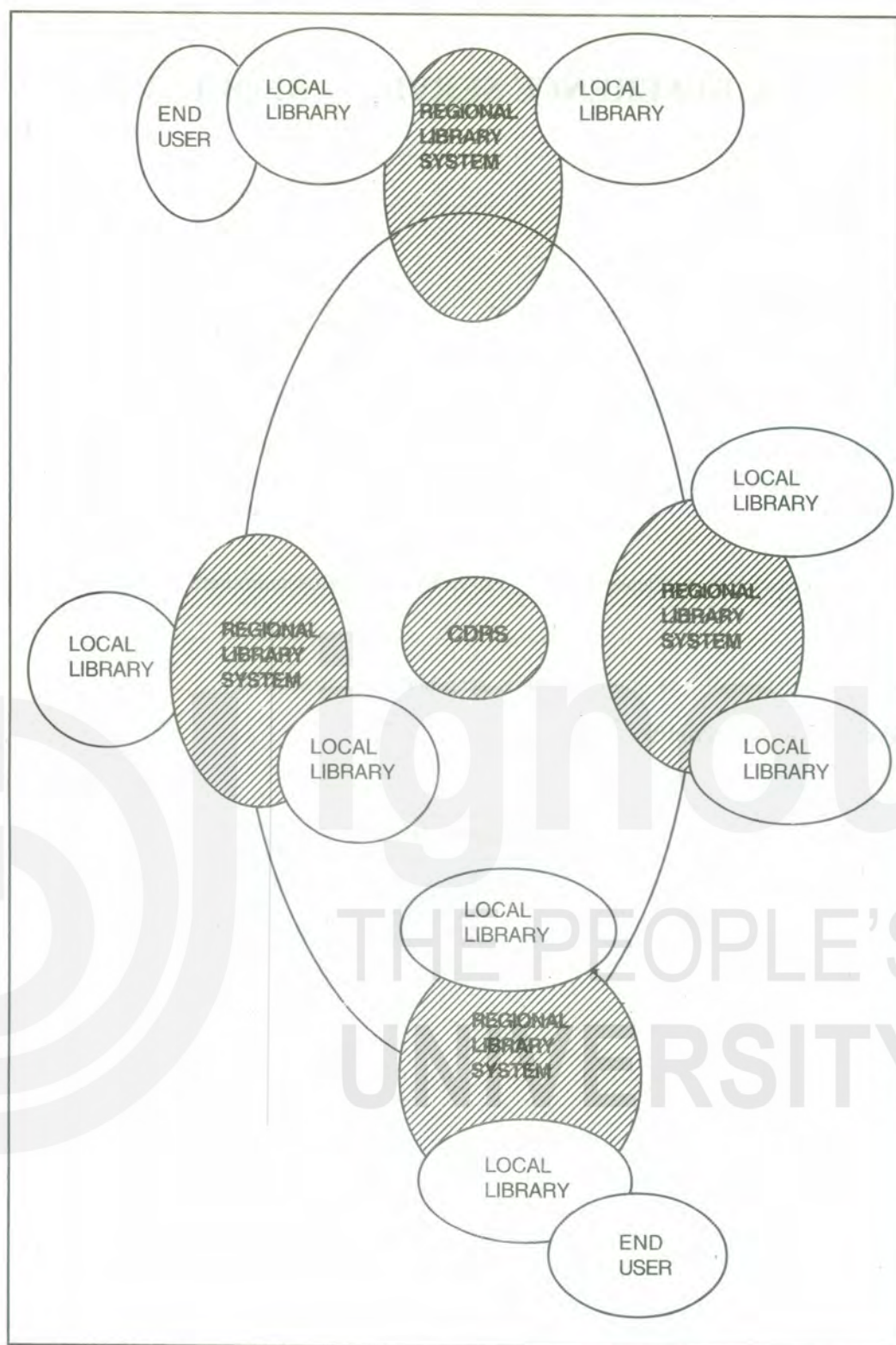


Figure 11.1: CDRS Network

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