ONLINE DATABASE TECHNOLOGY

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Introduction:

We are living in the so called information age. In recent years database technology has become one of the most rapidly growing areas of computer and information science. According to J.Martin "Database is a collection of interrelated data stored together without harmful or unnecessary redundancy to serve multiple applications". Literally the term "online" means that the user is in contact with the computer through same direct linkage either by a direct line or over the telephone network. Online net work systems like Lockheed/DIALOG, SDC/Orbit, ESA/IRS etc., have large computers to serve hundreds of users simultaneously.

Objectives of Database Developments:

a. To make the data available to wide variety of users
b. Maintaining privacy, security, quality and integrity of databases.
c. Centralised control of database.

The main advantages of online processing is it requires less time, managing large data, better precision and greater number of access points.

Types of Online Databases:

There are many kinds of databases that have been used by the librarians for meeting the information requirements of their user. In a recent workshop on HYLIBNET about 140 librarians have identified the following types of databases as the most used in libraries.

1. Bibliographical database which give the bibliographic description of the document and which are the essential feature of an OPAC (Online Public Access Catalogue).
2. Databanks and statistical databases which give numerical data - These are originally edited databses in which information is shifted and edited in conformity with a given pattern.

3. Industrial products & processes database which can be accessed on the basis of a wide variety of keys to find out the technical details of product or process these databases are used as inputs by industries taking up the manufacture of new products or development of new processes.

4. Vendor and manufacturer databases: These are useful to persons engaged in materials managements and inventory control.

5. Databases of special categories of publications like patents, standards etc.

6. Personnel databases which are used by professional manpower development agencies for finding the right persons for the right job.

This includes databases which are available in CD-ROM/MAG tape format which are generally made with special users as targets.

Models of Online Databases:

Online databases may be grouped as under:
— Bibliographical
— Relational
— Distributed
— Discipline Oriented
— Multidisciplinary
— Interdisciplinary
— Networking database models

Uses of Online Searching:

Online searching of databases is carried out to obtain different kind of information for different kinds of users. Some of the benefits that can be derived from online database searching are:

(a) Retrospective searching on particular topics
(b) Quick answers on specific questions
(c) Development of search profile and strategy.
(d) Current Awareness on topics
(e) Training of personnel
(f) Compilation of bibliographies
(g) Possibilities of online and offline printing
(h) Access to occasional interest files.

Popular Databases:

A large number of databases that are national & international in

their scope and coverage are available today for accessing through different nets, are in the dial-up mode:

1. BIOSIS PREVIEWS (1969--)

Corresponds to Biological Abstracts and Biological Abstracts/ Reports, Reviews, Meetings, with abstracts for recent years and including systematic biological names and codes to enhance searching. All life science subjects are included, taken from Journals, books, reports, theses, meetings etc and the coverage is international.

2. CA SEARCH (1967-)

Corresponds to chemical abstracts. Most aspects of chemistry, biochemistry and chemical engineering are included and the coverage is international.

3. COMPENDEX (1970-)

Corresponds to the Engineering index. Most aspects of engineering are included taken from journals, publications of the relevant societies, meetings, reports, books etc and the coverage is international.

4. INSPEC (1969-)

Corresponds to physics, electrical and electronics and computer and control abstracts. Most aspects of physics, electrotechnology, computers and control are included taken from Journals,Reports, Books, Meetings, Theses and Patents before 1976 and the coverage is international.

5. MEDLINE (1969-)

Corresponds to Index Medicus. All aspects of medicine are included taken from journals and the coverage is international.

6. NASA (1964-)

Corresponds to scientific and Technical Aerospace Reports (STAR) and International Aerospace Abstracts (IAA). Most aspects of space exploration and applications, aeronautics and astronautics are included taken from reports, journals, meetings etc and the coverage is international.

7. NTIS (1964-)

Corresponds to Government Reports and Announcements & Index (GRA & I). Most aspects of US Government sponsored research, development, engineering and associated analysis and reports are included. so that coverage is US based but multidisciplinary.

8. INIS (1970-)

The International Nuclear Information System (INIS) is a bibliographical

database covering the literature on peaceful uses of nuclear energy.

9. AGRIS (1975-)

International information system for the Agricultural Sciences and Technology (AGRIS) was established in 1975 to serve the agricultural needs of both developed and developing countries. It is an international database with participation from 120 countries and 14 international centres and is coordinating centre (ACC) of FAO (United Nations Food and Agricultural Organisation).

Commercial Database Services:

Access to clusters of leading business firms like Lockheed Aerospace Company of the USA and the European Space Agency at Italy on commercial basis by paying for the computer and communication time. A few of the database search services available for scientists and engineers are:

1. BLAISE:

Part of the British Library online services. This host has two services

    a.   BLAISE - LINE: Coverage of books, conference proceedings, grey literature, audiovisual materials and periodical articles on education.

    b.   BLAISE-LINK which provides access from the U.K. to the databases held on the National Library of Medicine.

Special features include automatic SDI, document request service, cheap off-line search facilities for searching etc.

2. DIALOG INFORMATION SERVICES:

Based in the USA, it is the largest service of its kind, with about 200 databases and 100 million records. It has a very wide subject coverage in addition to science and engineering which includes business, economics, law, social sciences and humanities and current affairs. There is also a wide source coverage, including patents, books, directories, theses, conference papers,news,citatioins, journal articles and reports.

3. ESA-IRS:

The European Space Agency Information Retrieval Service. It has a good selection of databases specializing in science and engineering.

4. SDC:

Based in the USA, it is one of the original large services with

about 80 databases. It has a wide subject coverage including business, science, engineering and the social sciences.

5. CAS ONLINE:

Specializing in a single file of chemical abstracts.

6. DIMDI:

Specializing in medicine, agriculture and biosciences and ISI databases located in Cologne West Germany.

7. L.C.ONLINE SERVICES:

Mums: (Multiple use Marc System): This covers the catalogued books and books that are under cataloguing process.

Scorpio: (Subject-Content-Oriented-Retriever-for-Processing-Information on-line). This is designed for users with little or no experience with computers. The commands are limited.

Sources of Information on Online Database:

There are number of sources through which the availability for online search giving the coverage and frequency of search are available today to the practicing librarian. A representative listing of the same is given below:

1. Directory of online databases: Santa Monica, Cuadra Associates inc., 1979 - quarterly
2. Computer- Readable Databases: A directory and data source books by M.E.Williams. L.Lannam and C.G.Robins. Illinois. American Society for Information Science,1982.
3. Datapro Directory on online service. Deiran, USA,Datapro Research Corporation, 1983.
4. Online bibliographic databases by J.L.Hall and M.J.Brown. 3rd ed. London. Aslib.1983.
5. U.K.Online search services compiled by J.B.Deunette. 2nd ed.London,Aslib. 1982
6. Computerised Literature Searching: Research strategies and databases by C.L.Gilreath.Boulder, Colorado, Westview Press, 1984.
7. Online searching: An introduction, by W.M.Henry and others. London, Butterworths, 1980.
8. Online search strategies, edited by R.E.Hoover. New York. Knowledge Industry Publications, 1982.

9. Basis of online searching, by C.T.Meadow and P.A. Cochrane. New York, John Wiley & Sons, 1981.
10.Online Reference and Information Retrieval, by R.C.Palmer, Littleton, Co., 1983.

For more detailed information of these sources, the readers are requested to refer to Parker, C.C. and Turley, R.V. Information sources in Science and Technology, a practical guide to traditional and online use. 2nd ed. Butterworths, London,1936.

Conclusion:

The online database technology is a boon to librarians and information scientists in collecting, retrieving and disseminating information. All the library services can be effectively implemented by using online search etc. Although online information search is a powerful tool in the hands of the librarian, it is not a Panacia for solving all information problems. To make effective use of online search, the librarian must know fully well the information potential of the resources available with him, identify grey areas of science and technology in which he lacks information and optimise the use of online searches to augment his own resources.