Getting Acquainted with Online Searching

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Introduction

Online database retreival is becoming a major factor in information activities not only in the developed, but also in the developing countries. It is exerting immense influence on the information world . . on present information services . . on the plans for the future . . on the thinking about choices of solutions to information problems . . on international cooperation . . on formulation of national and international policies. It is enabling information counters and libraries to add a major new dimension of service to their users in many subjects; science and technology, agriculture, business and commerce, social sciences, government, and even in arts and humanities.[1]

Historical Development

First the computer 'think tanks' began to use computers for creating printed lists of documents, to edit and sort them in preparation for typesetting and printing. In addition to learning to use the computer to drive the typesetting equipment, and to directly produce camera-ready copy, some programmers thought it would be nice to use the computer to find specific items, or small subsets of items, and to print those out. This saved going to printed copies, searching through them, comparing items to see if they covered specific aspects of a topic and hand copying of the found item lists.

In the early days, 1965–1970, there was the NASA (National Aeronautics & Space Administration) database, which was serviced by what was to become the Lockheed Information Service, DIALOG. There was the System Development Corporation BOLD service, which was to become the present ORBIT (Online Retrieval of Bibliographical Information Timeshared) service, and was the basis for a service by the National Library of Medicine's MEDLINE. NASA used dedicated communication lines for remote terminal access. NLM (National Library of Medicine) initiated the the dial-up phone capability, serving remote terminals in Regional Medical Library Centers. DIALOG and ORBIT, entering into the first commercial contracts in 1974, installed TELENET and TYMNET ports, as well as telephone ports, to make the service more attractive, costwise. Mead Data Central and the New York Times Information Bank were other early starters who have survived.

Definition, Capabilities

An online search is an interaction between an individual and a database, where the individual states his query in the form of SEARCH TERMS and LOGICAL COMBINATIONS of search terms, to retrieve small SETS of very specific information, from large computer-stored databases.

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Using a small set of COMMANDS (under 25) the user chooses a particular FILE from the DATABASE, enters SEARCH TERMS to be checked against the file, examines results (quantitatively and for content), adds new search terms or deletes some, combines some to make his own more specific search term (LOGICAL STATEMENT), until results satisfy. Then he may get his information printed immediately, or more economically, have it printed at the database computer and mailed to him.

If the information he gets points to fuller information which is available only in printed form, he may look for it in local libraries, or he may order it to be sent to him by a supplier which will fill his online order for a fee.

If the information he gets is numeric, he may use the capabilities of the database computer to manipulate it, plot or graph it. If his terminal can support it, he may record the information on his own disc, to revise, annotate, or incorporate it into his report-writing or personally maintained database for an ongoing project.

Equipment Needed

Any terminal with communications capabilities will do. If the terminal has no printing capabilities, then he must rely on the database service which will print and mail to him any copies he requires.

If the user is working with a microcomputer, it must have appropriate software, serial interface, modem and a telephone. In regard to telecommunications options, you can use the telephone to dial directly to most databases. It is much cheaper, usually, to dial a telecommunications network first, and then through the telecommunications network, to direct your call to the database host computer. You then login to the host computer (or you may be automatically logged in), give your private password, and begin searching. To secure a password you usually need only sign a contract agreeing to pay for the amount of time you use, on a monthly basis. In some cases there is a start-up fee.

The Databases

The databases are usually independently owned by an individual, a corporation, a news service, a government agency-and made available, over public or private communications carriers, by "Vendors" who provide Database Retrieval Systems. The vendor charges the user (known as a subscriber) a fee, and pays the database owner a royalty for each use.[2]

The following are the types of databases:

a) Referral: Some databases, while giving much useful information, also point you to more complete sources. These include:

i. Bibliographic: contain citations, often abstracts of the original documents, which may be journal articles, reports dissertations, patents, conference proceedings, newspapers, or books.

ii. Directories: contain lists of organizations, individuals, audiovisual materials, computer software, or companies.

b) Sourze, or zomplete, databases: contain all of the data or text of the original source of information. These are either numeric or textural or a mix.

i. Numeric: survey data or statistical representations of data: time series for a given measure of production: or handbook-type data of materials properties.

ii. Full text: complete text of items, newspaper articles, legal records.

The Database Retrieval Service

Why database retrieval services are needed:

a. The databases are often byproducts of other activities. The producer may be primarily a publisher of printed indexes, or he may be engaged in study of the area covered by the database. He may not have the capability to put the database up for public access or use, but is not averse to the economic return from such public use.

b. When the individual producers do put their databases online, users are required to lean the access protocols and command language for each such databases.

c. Most database producers find that their marketing and usefulness of the product are enhanced when they put their database in an online retrieval service.

d. For the database user the advantages of such "super markets" are great. One set of access protocols, one command language, and one source of documentation and billing for all databases in the service.

Choosing A Database Service

There are over 200 services. How does one decide which to subscribe to?

a. There is one criterion which must be met; the service you choose must have the database (s) you want to use.

b. If several services offer the database you need, consider whether you might want some special capabilities which one of them might offer. For example, if you are interested in economic indicators, you would want to use the Business International Corporation files. Both DIALOG and I.P. Sharp offer them. DIALOG displays the data in nicely labeled formats. I.P. Sharp allows many kinds of manipulations of the data, changing base years, converting to different currencies, combining different sets of information in tables, charts, etc. One is easier to use, one is much more flexible in use.

c. Or consider which service offers other files you might want to use. MEDLINE is more cheaply available from the National Library of Medicine; but you can get it and other several other medical files from DIALOG.

d. Finally, consider whether training is available, at what cost, and at what convenience of place and scheduling.

Help in finding databases and their online servicers can be found in directories of databases and service vendors. Once you have identified the databases you want to use, and the service, write to them for information. They are the best sources of

current information, and most of them are well produced.

Advances of Online Searching

The advantages of on-line access are considerable and it is important that they should be clearly appreciated inside the profession of librarianship and information work, and by potential users in the scientific and technological communities and in the social sciences and humanities[3].

A basis of comparison must be established for meaningful comparisons; the most useful comparison will be between the on-line search and manual search in the library.

The following are the advantages of on-line searching over the manual searching:

a. Ease of access: Think in terms of distance, and familiarity with protocols. How far must you travel to get to the terminal or library: how well do you understand the rules and mechanisms for finding and using the resources in the database of library?

b. Size and completeness of the resources: In the library or database likely to include the information needed; is it likely to be in place, lost, or in use when you need it?

c. Number of entry points to the collection: The information you need may be in the library or database, but can you find it? Are the critical indexed entries available? Printed index add card catalogs typically are very limited in the number of entries permitted fo each item, and typically you must go physically to many separate indexes: the card catalog for some items, printed indexes and abstracts for others. Usually you must consult several different sets of indexes in many different volumes and supplements, whereas the database interfile all volumes over many years.

d. Selectivity of retrieval: The use of the computer database is more flexible; two aspects of a subject may be combined in a search. Suppose you are interested in the treatment of a disease by a particular medication, e.g., Cancer treated by Homeopathy. In the printed index you would find the disease, then read through all entries to see whether Homeopathy is discussed. In a computer search you would simply request that the two topics be combined: Cancer and Homeopathy. Only the items wanted need be typed and reviewed for usefulness.

Limitations of Online Searching

a. Ease of access and skill in use: to some extent the limitations of use are the converse of the advantages. If you cannot get to a terminal, have little skill in use of the online service, they are of less value to you. Floundering, or bemused browsing, can be very expensive, so preliminary training and guided experience are essential.

b. Content: a special caveat is required. In the case of the computer-stored file, since it is huge, and invisible, you may assume more than exists. With a physical collection, as a library, you have a greater likelihood of assuming gaps in the collection. You have some sophistication in

evaluating documents attributing qualities to an item, depending on easily observable attributes: who the publisher is, or the type of articles which surround it in a journal issue, for example.

Financial Considerations

a. Types of contracts:

Typically they are of two types: contracts which allow you to pay as you go, on a monthly basis; or those which require a start-up payment, plus a per-minutes charge for actual use. Some services offer both types of contracts; DIALOG and BRS both do. Look at the Limitations imposed by the contracts, especially when there is a cost-advantage in one or the other.

b. Strategies for economic use (cost-cutting)

There are many ways to minimise the cost of use of online services, beyond the simple acquisition of skills in searching. For example, some contracts at lower rates limit you to hours when the system is not heavily used. Those are the best hours even if you do not choose the lower cost contract, because system response time is faster, and you pay by the minute, whether the system is fast or slow.

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