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ONLINE DATABASES

BY CAROL TENOPIR

Choices for Electronic Reference

THROUGHOUT THE 1970s and early 1980s, electronic reference for most librarians meant intermediary searching of remote online systems such as DIALOG, BRS, or ORBIT. That picture has changed considerably in the last ten years, with the addition of a variety of media, systems, and choices.

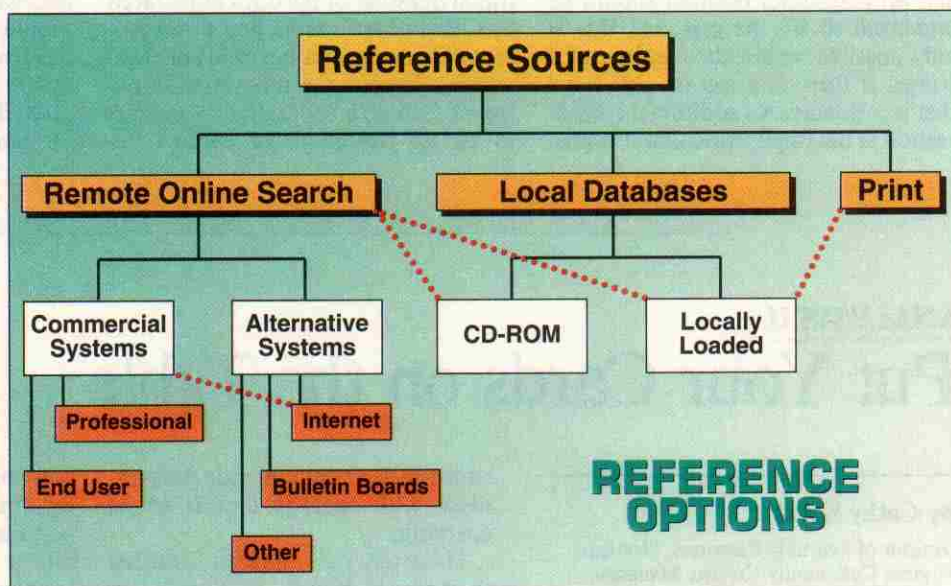
The pace of change is expected to accelerate even faster in the years to come as we move toward an electronic information highway that combines television, telecommunications, and information products. The April 12, 1993 issue of *Time* magazine and May 31, 1993 *Newsweek* forecast these future electronic revelations.

This column, however, will not present anything new but rather will reflect on the variety of choices that every reference librarian faces today.

Electronic options

Even now, the world of information access in libraries is becoming complex, with many options and many branches under each option. The figure shows the major branches available in 1993. There is not much to say about print; it is assumed that everyone offers it now and is comfortable with it. Print won't completely disappear from any type of library (for some things will remain still easier and better to read), although some print publications, such as indexes/abstracts, will disappear.

Remote online services—those services where the information itself is housed in another location and you get access to it by dialing in—can be split into commercial services and, for



lack of a better phrase, "alternative services." Commercial services are those for the intermediary searcher or professional in the workplace (such as DIALOG, BRS, ORBIT, etc.), or those for end users (such as Knowledge Index, CompuServe, Prodigy, and America Online). Some services, such as Dow Jones News/Retrieval or Mead, can fit in either category, depending on how they are being used.

Alternative online services include the many information resources created by libraries and universities that are accessible over Internet, bulletin boards, and other often free state or local options. Several states and counties, for example, provide online access to legislative actions, regulations, or other government documents.

On the other main branch are local systems—the library or user purchases or leases the information in electronic form and brings it inhouse. Adequate hardware must be provided for the data, and payment is upfront, often for unlimited use. The two main local access options are, of course, CD-ROM and locally loaded tapes. This chart attempts to make sense out of all the possibilities, but even these nice neat boxes aren't so nice and neat anymore.

The dotted lines show how the options interact with each other. In-

ternet can be used as a method to access commercial services; CD-ROM databases are connected through networks so branch libraries or dial-in users can access them remotely; locally loaded tapes may be put up on an OPAC (online public access catalog) accessible over Internet so separate library systems can access other libraries' local databases remotely, etc. Look for more dotted lines in the future as we all try to maximize these access opportunities.

Complex and confusing as all this may be, it is also exciting and liberating. Electronic access to information is not just for a few people, not just for a few types of libraries, not just for a few librarians, not just for a few types of reference questions. There is something (actually many things) for everyone. The trick for information professionals is to sort it all out, keep on top of it, and offer the most efficient access to it, while making the user aware that it exists.

Time line

It is helpful to put all of this into historical context to see where we've come from and maybe where we are going. A database searching time line can help with both. Everything before 1964 we can call BC (before computers) or "The Age of Print."



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Remote online searching began in the 1960s with the National Library of Medicine's (NLM) development of the MEDLARS system. Medlars was first available for batch searching in 1964; many of today's librarians may find it hard to imagine submitting a search request in writing to NLM, then waiting a week or two to finally get a printout of citations on the topic.

This changed to interactive online as we know it today in the early 1970s with NLM, DIALOG, and ORBIT—the first publicly available remote online systems. Online searching became much more common in 1975 after the first packet-switching networks such as Tymnet meant online users no longer had to make a long-distance call.

During its first ten years of development, online was pretty much the domain of librarians and other professional searchers (with some high-volume workplace end users such as lawyers). The first active marketing to widespread numbers of end users came in the early 1980s (after IBM introduced the PC) with systems such as CompuServe, BRS/AfterDark, and DIALOG's Knowledge Index.

CD-ROM came on the scene in 1985; local loading of database tapes took off in a big way just a few years ago. Internet is the online phenomenon growing the most right now. Although Internet has been around in one form or another almost as long as commercial online, it wasn't until last year when Internet was exposed to a wide user community that it began to have a profound impact.

What is interesting about this time line is that none of the options disappear when a new one comes on the scene. If you turn the line on its side, the new options just get piled up on top of the older ones and all become part of the information access scene.

More people affected

Actually, the time line is more like an inverse pyramid in terms of number of users or number of people affected by each option. The newer options affect many more people and are expanding electronic information access from the library to the tens of thousands and even millions. Even though the medium of print still reaches the most people, for any given library resource at any one time, print is limited to a single or just a few users.

Why offer such variety?

Why should a library offer all this variety in reference? It strains budgets, engenders coping with hardware and software, changes bibliographic instruction, and requires infrastructure changes, such as to electrical outlets, phone connections, and the physical arrangement of the reference desk. It means the library staff has to keep up with all the new options, all the features of the various options, and know how to instruct users in the use of it all.

Even if you admit you have an obligation to expose your constituency to electronic information, why not just load Wilson databases on your OPAC, or buy Magazine Index (or ERIC or Medline or whatever) on CD-ROM and stick it in the corner of the refer-

Even now, the world of information access in libraries is becoming complex

ence area? It would be a lot easier than what you are doing now or contemplating doing!

Reasons for going electronic

The various electronic information media help libraries meet their obligations to their constituencies. All libraries have obligations to provide the best source no matter the medium; to provide access to worldwide information sources and viewpoints; to provide up-to-date (and sometimes up-to-the minute) information; to provide things in the most cost-effective way possible; and to enhance informational and educational roles, including information and online literacy for all constituents. Electronic resources often do these in ways nothing else can, but not every electronic resource does it all. Each offers its own unique advantages and disadvantages.

Rather than compile a comprehensive list of advantages and disadvantages for every medium, here are some top reasons why you should include each within your library services:

- Keep print for basic resources because it is relatively inexpensive, there is no question of ownership (once you purchase it, you own it), and patrons are familiar with the for-

mat of books, leading to better browsability.

- Offer commercial online services (either intermediary or end user or both) to provide the most up-to-date and timely information. Most systems also offer low up-front costs and you can opt to pay only for what you use. In addition, commercial online provides access to hundreds, even thousands of information resources, many of which you would not be able to have otherwise.
- Tap into all alternative online sources you can (including Internet) to provide interconnectivity to the world. Most of these systems are available at low cost and offer high value. They provide access to many full-text databases and indexes not available anywhere else. The library can play an important educational role by helping users make sense of all the possibilities.

- The primary advantage of CD-ROM is in products that take advantage of its unique properties. Multimedia products go beyond printed books and beyond current online products; often the interfaces are easier to use; and CD-ROM access encourages independence and browsing (but in a controlled environment). Use locally loaded databases for the few things to which you want to offer widespread access. There is a high up-front cost, but locally loaded databases are cost-effective for high-volume use. Because the software is often the same used with the OPAC, locally loaded databases can offer ease of use as well.

Commercial online, alternative online, Internet, CD-ROM, or locally loaded databases—which are most important? ALL are important. All librarians must be cognizant of all, literate in all, prepared to search and offer all. Since each has its own unique advantages, all libraries should be offering some combination of services. The optimal combination depends on the size and resources of the library, but some combination is possible and necessary for every library. Small libraries may benefit the most: by using online access when they need it to access resources they would never be able to purchase for their libraries and tapping into databases that bigger libraries have locally loaded.

Thanks to the librarians of South Carolina, Oklahoma, AMIGOS, and LOEX for suggesting the topic and helping me to refine my comments.

