

LJ INFOTECH □ ONLINE DATABASES □

BY CAROL TENOPIR

Integrating Electronic Reference

IF YOU ARE a reference librarian it should come as no surprise that every time a new medium or service comes along, it gets added on to your other reference duties. Very rarely does a new technology neatly replace an old one. Not only have we kept most of our paper reference sources, we have added to them with intermediary online, end user online, CD-ROM, tape-loaded databases available through the online public access catalog (OPAC), and access to the Internet. No one medium or set of sources can satisfy all requests or all users. All are needed in today's complex information environment.

This eclectic mix of reference sources means we have more places to find information and more chance of success. It also means that each year reference staff must become better at deciding which medium is best to find a specific answer; what path is best to locate a needed resource; and how to teach patrons about each of the systems available through the library.

Ralf Neufang, a reference librarian at the University of Hawaii, and I surveyed Association of Research Libraries' (ARL) members in 1994 to find out which electronic reference services are offered and how the services affect the reference staff, the expectations of patrons, and user instruction. Having surveyed the same group of libraries in 1991, we now can compare how things have changed in the three years. (More detailed reports of the 1994 survey will appear in *Online* magazine later this year and in a presentation at the National Online Meeting in New York in May.)

College, public, special, and school libraries all incorporate electronic sources to varying degrees, but universi-

ty research libraries that belong to ARL are early and enthusiastic adopters of a variety of new reference services. In many cases, they have eased the way for other libraries by pushing interconnection limits, debugging software, negotiating site licenses, and developing new techniques for instruction. Eighty-five percent of the 113 university library members of ARL responded to our survey.

CD-ROM

Virtually all of the 96 responding libraries provide CD-ROM databases for patrons, most offering a multitude of titles. More than half of the libraries surveyed now carry more than 60 CD-ROM titles; 41 percent have more than 80 titles; and one third have more than 100. We did not ask what those titles are, but in 1991 a majority of the CD titles in reference were bibliographic, and almost all were text rather than multimedia. However, according to *LJ*'s Multimedia/Technology Survey (February 1, p. 44-45), 26 percent of responding academic libraries reported carrying multimedia CD-ROMs.

The stand-alone CD-ROM workstation is becoming less common, as 75 percent of university libraries now have local area networks for CD-ROMs (CD LANs), up from 38 percent in 1991. Some 21 of the 96 libraries offer dial-up access to their CD-ROMs.

Intermediary online

All but one of the responding libraries said they offer mediated online searching. In academic libraries, however, the number of mediated searches performed has continued to decline, as more end user searching is encouraged and more CD-ROM databases are purchased. Mediated searches are an extra service for those few who wish to pay for it—95 percent of these libraries charge for mediated searches.

University libraries use multiple online systems in their intermediary search services. All of the libraries in our survey use DIALOG; most use several others as well. Other popular systems, in order of preference in university search

services, include CDP Online (formerly BRS), STN International, OCLC Epic, National Library of Medicine Medlars, LEXIS/NEXIS, Dow Jones News/Retrieval, Westlaw, Wilsonline, ORBIT, and Data-Star.

End user online

The percent of libraries that offer end user online searching has increased from 45 percent in 1991 to 66 percent in 1994. We attribute the increase to two factors: the emergence of OCLC's FirstSearch shortly after our earlier survey and better integrated systems. FirstSearch is offered by 35 percent of the libraries we surveyed, making it the most popular end user online system. Some libraries are carrying it as an option on their OPAC menu for searching with the OPAC interface (see "A Second Look at FirstSearch," *Online Databases, LJ*, November 1, 1994, p. 30,32).

About half (49 percent) of responding libraries charge at least some users. Of those libraries that charge, two thirds charge all users, one third charge some.

Unlike mediated online searching, a library is more likely to have only one or two systems for end user online. When more than one system is offered, different systems are typically targeted to different user groups. Law school students, for example, may search LEXIS or WESTLAW, while liberal arts students may use FirstSearch or CDP Online.

Except for FirstSearch, the most commonly offered online systems are pretty evenly spread among libraries (and none is used by more than 20 percent of the libraries in our survey). Equally popular are LEXIS/NEXIS, CDP Online, Medlars, STN International, and Dow Jones News/Retrieval, with Westlaw and Knowledge Index next.

Tape-loaded databases

All but two of the 96 libraries responding to our survey have OPACs and, in most cases, have had them for years. The OPACs are widely available outside of the libraries, across campus, in dorms, and through dial-up. Roughly



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57 percent of the libraries surveyed have more than 100 terminals or workstations. An adequate number of terminals and dial-up ports are essential to achieve true integrated electronic reference.

We were not surprised to find that the proportion of libraries that are tape-loading databases has increased from 36 percent in 1991 to 74 percent in 1994. Access to tape-loaded databases does not always mean local loading, however.

Many universities are working in consortia, where databases can be loaded at one site and accessed at another. For example, the University of California libraries share access to tape-loaded versions of MEDLINE and other databases accessed through their MELVYL system. Libraries in a region may choose to distribute the locally loaded burden, deciding among themselves which libraries will load which databases. (This works only if site licenses allow one library to load a database and others to access it.) About half of the tape-loaded databases are bibliographic, with full text and directory features also popular. Most of the full-text databases are ASCII text, but eight libraries said they are loading image databases.

Patron access to the Internet

Patron access to the Internet has emerged as the hot new service since our 1991 survey. By 1994, 77 percent of the libraries we surveyed reported offering Internet access to their users. Of these libraries, about three-quarters offer Internet access from within the library and about half provide it on a dial-up basis.

More than half of the libraries linked to the net have a local gopher, and a few offer a library World Wide Web (WWW) home page through WWW browsing tools such as Mosaic or Netscape. They most commonly support telnet access to other libraries or information resources.

Only 28 percent of the libraries support E-mail access, and, of those that do, not all are happy about it. E-mail use can be a problem in an integrated electronic environment; some librarians complain that E-mail users tie up workstations, which are in heavy demand from users who need access to information sources.

Some libraries are solving this problem by using menus to direct users to information sources and services or by blocking E-mail access. An integrated library menu directs users to external database services such as OCLC's

FirstSearch, to tape-loaded databases, to CD-ROM databases, to the OPAC, to a campuswide information service, and to selected Internet sites.

When such menus are used, according to one librarian, "it is not apparent to the user that they are in fact using the Internet." Another explained, "At the reference cluster, we are trying to eliminate fun and games, especially E-mail! We are using a Windows-based menu for our 'electronic reference desk.'"

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We have access to FirstSearch via our Campus Wide Information Service, access to library catalogs, WWW, and also our networked CD-ROM products."

Changing expectations

As Internet use hurdles toward the mainstream and access to electronic information is covered in the popular press (and even advertised on television), patron expectations naturally change. Many university libraries are taking advantage of the situation by positioning the library as the electronic information center, or establishing themselves "as having the folks in the know."

In addition to providing access to a variety of sources and services to answer reference needs, libraries provide information about the services themselves. "We are expected to know what is on the Internet, both gopher and Web. We are also expected to be experts in data transfer, conversion, and compression," said a librarian in her survey response.

Keeping current is a constant task for library staff. Some libraries have formal staff training programs; many more rely on a few enthusiastic staff members who help others. Most agree the time is right to form new alliances with the computing center, other departments, or technical experts.

Sometimes patron expectations are unrealistic. "The hyping of the Internet has led many people to believe that hith-

erto expensive and valuable datafiles are now available free," said one survey respondent, "when in fact they are still fee-based and/or restricted to local clientele." This overoptimistic view is not restricted to patrons: Even on the reference librarians' listserv LIBREF-L, participants are asking where they can obtain access to commercial databases without paying the subscription or licensing fees.

User instruction

Although library staffers are putting a lot of effort into menu interfaces that provide an integrated view of reference, software has not yet replaced the need for user instruction. Most libraries offer formal instruction classes, feeling the need for them has increased.

An electronic learning laboratory with hands-on access for every student is considered ideal, but most libraries do not yet have this luxury. A classroom with one connection and a display device for online demonstrations by the instructor is more common. Classes may be dedicated to a specific task (e.g., using Mosaic), or electronic access may be integrated with course-related instruction.

The need for one-on-one instruction is growing, by phone and via E-mail for remote users. Most libraries still prepare printed guides, and some have developed self-paced computer-assisted instruction.

Integrated reference

Many of the university librarians we surveyed commented that electronic options of all types are now integrated into reference services. Others are working toward integration, both technologically and logistically.

In an integrated reference environment, a common interface leads users seamlessly to the best resource for their needs. It may not be obvious to the user whether the database is on the university's resident computer, at another university, at an online vendor's office 2000 miles away, or on the other side of the world at an Internet site. It doesn't matter to the user whether the source is on CD-ROM, loaded from magnetic tape onto a mainframe, or from a local area network of microcomputers.

Whether your library is a pioneer or a reluctant follower, electronic sources are just another part of reference work. Whether it occurs sooner or later, it's only a matter of time before complete integration takes place.