

LJ INFOTECH □ ONLINE DATABASES □

BY CAROL TENOPIR

Expert Views of the Future

NO ONE KNOWS for sure what the future will bring for the online industry or for libraries. Doomsday predictions that the free web will replace both are rampant, as are optimistic projections of phenomenal growth in this information economy. Some observers predict the demise of one in favor of the other; others focus on a world where libraries have no role in a totally commercialized information world; and still others forecast that the library and the web together will drive prices for information down so far that commercial publishers will be driven out of business.

Sometimes the antagonistic relationship between libraries and information companies suggests that they could never agree on any vision. Recently I queried people in 17 information companies whose primary market is libraries: "What do you see as the major issues or trends in the next five years relating to database distribution to libraries?" Then I ran these predictions past some librarians to see if these two groups of experts could agree.

Some web drawbacks

Neither librarians nor commercial database providers dispute that the web is the platform of the immediate future. As reported in "Database Marketplace '98" (*LJ* 5/15/98, p. 38-46), almost all database providers offer a web option, and libraries are choosing web versions more and more often.

However, both groups recognize that the web does not lack drawbacks. Representatives from both DIALOG and OCLC mentioned that web performance problems will probably get worse before they get better. Alan Wallace, reference librarian at the University of Tennessee,

Knoxville, warns that "one problem I (as an academic librarian) see is even slower response time during peak usage hours, as more and more services move to the web. Users who have been searching locally mounted (nonweb) databases find this slowness particularly frustrating. The traffic becomes heavier and heavier as we wait to see if Internet2 may help to alleviate this problem."

Web popularity

Overreliance on web versions of heavily used resources may lead to frustrating delays, but the web will remain popular for many reasons. Not least of these is that it allows librarians to avoid the hassle of loading and maintaining large databases locally. Ilyssa Greene of OVID Technologies says, "OVID is seeing an increasing number of libraries moving to the online, web-based environment rather than locally mounting databases. This is particularly true of electronic full text, which requires a lot of memory and some administrative time."

Lucy Park, systems librarian with GCI Information Services and the Environmental Protection Agency, agrees that web access to databases is a major trend. "It is convenient for librarians to let the information providers worry about system maintenance issues rather than dealing with those hassles themselves," says Park. She summarizes the main advantages she sees with web versions: "Web technology is quickly becoming familiar to most patrons, and the web allows them to access the information from anywhere—at home, on the road, etc."

Too much information

Of course, it may not always be a good thing to retrieve easily lots of information at the library, home, or on the road. Several database providers predict that finding solutions to information overload will be a major future trend. For example, Melissa Hart of Congressional Quarterly predicts, "More databases are going to move to the web, and information services will become less focused on providing more information and more focused on providing information pack-

ages." She describes information packages as "bundles of information that target very specific information." These targeted, prepackaged information products "will be far more useful than databases that cover an archive of everything."

Wendy Ostrow of SIRS, Inc. also believes that bigger is not necessarily better: "Already librarians lament the vast amount of unnavigable information on the web, and, unfortunately for library patrons, most information providers are buying into the 'more is more' paradigm. There will remain a place for the multi-terabyte databases. Yet in the future, we [will] see [a move toward] more manageable databases, an appreciation that quality information can, for many, surpass sheer quantity in value."

Karin Hallett, user services/interlibrary loan librarian, Middle Tennessee State University, Murfreesboro, concurs that librarians need to focus on quality. Responding to the vendors' predictions, she says that "one challenge of libraries is to keep up with the proliferation and implementation of numerous databases." Due to the large number of databases, "librarians need to be tenacious evaluators of database quality (content and search options) prior to purchase, as well as to assert their needs and requirements in the marketplace."

Now some librarians demand high-quality products that allow them to select just what they need. "In the special library environment, we tend to need products that are specialized and focused in content," notes special librarian Park. "Products that allow you to choose specific databases to subscribe to are great. Customizable or modular products are also attractive."

Partnering and full texts

One way vendors hope to provide more customized information packages is to make strategic partnerships with other companies. Beth Dempsey of Gale Research Inc. sees this as a major new trend: "The ability to mate like databases and connect them through the Internet will be key to sat-

(Continued on p. 36)



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ONLINE DATABASES

isfying the needs of library patrons as they become more comfortable with Internet search environments."

Sometimes, as Jennifer Hertzell of Research Libraries Group predicts, this will take the form of "continuing merger/consolidation of service providers and document suppliers." This is because full text linked to bibliographic information is likely to be key. Dan Arbour, vice president at UMI, sees "the key demand is [to group] the full-text offerings into subject-based, topic-based, and individual title availability."

If a secondary database producer lacks the rights to distribute full texts, it must partner with companies that do. Becky Clarke of R.R. Bowker sees an "increased emphasis on intellectual content vs. pure bibliographic information"; representatives from RLG, OVID, CARL, and Infotrieve all believe that links from bibliographic to full text will become an important part of information systems. What format these texts will take is still up in the air, with images, HTML, and SGML all offered as possibilities. Librarian Park thinks that "products that include text in both HTML and image format are very attractive."

Library partnerships to form area-wide or statewide consortia have existed for decades. Now, librarian Hallett predicts that "to keep up with change and current trends, libraries will need to look to consortia to provide affordable access." Database providers such as Bowker are seeing an increasing number of consortia negotiating for access, e.g., to statewide online access to databases.

Captivating interfaces

According to Debbie Loeding of the H.W. Wilson Co., a key issue is "the expectation of customization in terms of access and content." Librarians will want information that not only includes the content that is best suited to their constituents but also presented in a customized way. Certainly Z39.50-based systems represent the start of this trend, with the possibility of seamless interfaces to library catalogs and commercial databases. The familiar web-based interfaces are another way to respond to this trend.

But even web interfaces or consistent interfaces with Z39.50 systems are not yet that easy-to-use or compelling. Scott Ahlberg of Infotrieve feels that in the future "there will be a wider variety of search options and easier access to full-text and image resources. New tech-

nology has made many things possible. Now the real challenge is designing systems that satisfy customer needs."

Wendy Ostrow of SIRS predicts that "search engines and user interfaces will evolve into more intuitive, interactive, stimulating tools." Academic librarian Hallett explains, "The perceptual importance on the part of end users/patrons regarding 'the state of the

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art' will redefine the 'terms of success' and the perceived value of libraries as a whole and librarians in particular."

Difficult-to-use or old-fashioned interfaces are still too common in library systems. With few exceptions, e.g., CD-ROM reference works like *Encarta*, interfaces in the library must seem incredibly dull to a patron raised on computer games.

Other predictions concern more mundane (but no less important) issues than creating captivating interfaces. According to Lesley Sprigg of Lexis-Nexis, "copyright compliance may reemerge as a critical issue." Representatives from RLG and Wilson also mentioned the issues of ownership, copyright, and licensing rights, in particular with full texts.

Although the Copyright Clearance Center has initiated payments for electronic copying, most librarians oppose moving to an environment in which every reader must pay for each article read. Librarians are already battling to secure less restrictive licenses that provide adequate compensation for journal publishers without penalizing libraries or readers. For many publicly supported libraries, it's not an ethical option to pass costs on to patrons. RLG's Hertzell sees a "slower-than-anticipated role of [e-payments] by individuals."

Only one of the 17 database distributors mentioned archiving or preservation as a major issue facing libraries in the next five years. Still, a successful future requires libraries to preserve the present and the past for the next gener-

ations. Although none of the librarians who responded to the predictions mentioned the problem of preserving digital collections, it clearly remains on the minds of many librarians.

Preservation problems

This April, librarians, publishers, scientists, and others met in Santa Barbara at a workshop on the "Socioeconomic Dimensions of Electronic Publishing." The workshop, sponsored by the National Science Foundation and the Institute of Electrical and Electronics Engineers (IEEE), was held in conjunction with the 1998 IEEE International Conference on Advances in Digital Libraries (ADL '98).

Amid talk about designing the best electronic products, several participants mentioned archiving as a main obstacle to widespread electronic publishing. Brendan J. Wyly, librarian at Cornell University's Johnson Graduate School of Management Library, reminded the audience that "the need for archiving electronic publications is almost certainly not going to be met if the responsibility is left with publishers, particularly if the responsibility is left with small 'wildcat' publishers that otherwise offer great prospects for changing the scholarly publishing system in beneficial ways."

R. Keith Raney (Johns Hopkins University Applied Physics Lab) pointed out the physical problems with archiving electronic publications: "By definition, to be robust, an electronic archive must regularly rewrite all files onto fresh media...the preferred formats and media will change over the years. Thus the very concept of 'archive' becomes dynamic rather than static. Maintaining an active archive implies expense, risk, and... missed opportunities.... These trends suggest [absent a vastly improved electronic alternative] that the most reliable and least expensive long-run archival medium is low-acid, buffered paper."

Librarians, working with publishers and other database distributors, must take responsibility for finding the best ways to archive and keep electronic collections of the past usable, just as they are working together to create customized, up-to-date, and quality products for libraries of the present.

[For further info on the proceedings of either ADL '98 or the "Socioeconomic Dimensions of Electronic Publishing Workshop" contact: IEEE Publishing Services, 445 Hoes Lane, Box 1331, Piscataway, NJ 08855.]