



12-1991

## Changes Wrought by CD-ROM

Carol Tenopir  
*University of Tennessee - Knoxville*

Follow this and additional works at: [https://trace.tennessee.edu/utk\\_infosciepubs](https://trace.tennessee.edu/utk_infosciepubs)



Part of the [Library and Information Science Commons](#)

---

### Recommended Citation

Tenopir, Carol, "Changes Wrought by CD-ROM" (1991). *School of Information Sciences -- Faculty Publications and Other Works*.  
[https://trace.tennessee.edu/utk\\_infosciepubs/342](https://trace.tennessee.edu/utk_infosciepubs/342)

This Article is brought to you for free and open access by the School of Information Sciences at Trace: Tennessee Research and Creative Exchange. It has been accepted for inclusion in School of Information Sciences -- Faculty Publications and Other Works by an authorized administrator of Trace: Tennessee Research and Creative Exchange. For more information, please contact [trace@utk.edu](mailto:trace@utk.edu).

# □ ONLINE DATABASES □

BY CAROL TENOPIR

## Changes Wrought by CD-ROM

[Based on a speech given at the Department of Library and Information Studies, Northern Illinois University, DeKalb.]

JUST SEVEN YEARS ago there was only one CD-ROM cataloging product (BiblioFile) and one optical disc reference product (InfoTrac, at first on 12" discs). Libraries that purchased these early products were pioneers, but they didn't feel particularly brave. They bought CD-ROM not to be first, but because the time was right. The time was right for an in-house cataloging tool that circumvented the expensive telecommunications links and per record cataloging costs of the large bibliographic utilities. The time was right for end user searching of reference indexes without an online meter running.

### CD-ROM takes off

CD-ROM has taken off in the last seven years as librarians of all types have embraced the technology with enthusiasm. Over 95 percent of the Association of Research Libraries (ARL) libraries now have CD-ROM products for use by patrons ("Options for Accessing Databases," *Online Databases*, *LJ*, November 1, p. 73). The addition of CD-ROM in libraries has been quick and pervasive. A study by Ching-chih Chen found that between 1987 and 1988 there was a 100 percent increase in the number of American libraries using CD-ROM. By 1988 almost 60 percent of American academic and public libraries and 30 percent of special libraries were using CD-ROM databases (Ching-chih Chen, *Optical Discs in Libraries: Use & Trends*, Learned Information, 1991).

Depending on who is counting and how they are counting, there are

now between 1500 and 3000 commercially available CD-ROM databases. Paul Nicholls, who writes regularly for *CD-ROM Professional*, does an especially good job of keeping track of trends in CD-ROM publishing ("A Survey of Commercially Available CD-ROM Database Titles," *CD-ROM Professional*, March 1991, p. 23-31). Libraries are adding more and more titles on CD-ROM.

This means a lot of changes have been taking place rapidly in libraries. Reference areas that were just recently the domain of print sources are now crowded with microcomputers and electronic sources. Librarians who used to show patrons how to use standard print sources are now asked to teach patrons how to use CD-ROM sources as well. Libraries that used to relegate electronic database searching to a fee-based online intermediary service find the boundaries between electronic and "regular" reference not so clear anymore.

### Changes in collections

Just walk into most any library, and the physical side of collection changes will be obvious. Banks of CD-ROM workstations may be in place where print index tables or card catalogs once stood. Patrons may be lined up to use CD-ROM products, while print equivalents go begging. Librarians tell me that when they place the same index in print and on CD-ROM near each other, the CD-ROM version receives much more use.

In most libraries, the impact on collections has been one of redundancy. Few libraries have canceled print subscriptions when they purchase a CD-ROM equivalent. The two may stand side-by-side or in different areas. Librarians have resisted canceling print for a variety of reasons. They point to the small but dedicated group of users of print versions.

In universities or school libraries many faculty members feel that students should learn about traditional research tools because retrospective searching still needs to be done in print. Instructors worry that students will tailor their research papers to

only what can be found easily on CD-ROM. Other reasons for not canceling are more practical. With print sources, multiple users can search simultaneously, each in a different issue. There is no downtime with print. In addition, some CD products are not exact equivalents of the print. PsycLIT on CD-ROM, for example, does not include dissertations.

But libraries cannot afford to continue to buy two versions of the same reference product (even if it is not *exactly* the same). It just doesn't make sense to spend scarce resources this way. Migration from print must happen for expensive reference products.

Local area networks (LANs) are one facilitating factor for the switch over to electronic reference products. As CD-LANs grow in popularity, the limitation of one user at a time per database is no longer a problem. Multiple patrons can access a CD product on a LAN, just as they can access multiple print volumes, but the CD access is better because each user has the entire database. Some large libraries are also providing access to CDs on a dial-up basis, so anyone with a modem can access the library's CD databases.

If enough libraries cancel the print version of a product, print will no longer be an economic distribution medium for the publisher. For complex bibliographic reference tools especially, the added value provided by the search features of the electronic version far outweigh the advantages and familiarity of print. Some print versions will disappear, and others will become quite distinct from the CD-ROM versions as publishers increase product differentiation by media of distribution.

### Inadequate periodical collections

With CD-ROM, many more people are searching indexes and abstracts than ever searched printed indexes, and they are retrieving many more articles. Increased use of bibliographic tools is making the inadequacies of libraries' periodical collections all too evident. Patrons may



Carol Tenopir is Associate Professor at the School of Library and Information Studies, University of Hawaii at Manoa, Honolulu

## ONLINE DATABASES

now quickly prepare a comprehensive bibliography, only to find most of the items are not in the library's collection; they need and want full text and libraries must give it to them, one way or another.

Some libraries are putting a greater share of the library budget into serials that coincide with the CD index coverage. The new titles may be purchased in paper, microform, or on CD-ROM. Microform and CD-ROM collections that match electronic indexes are offered by IAC/InfoTrac and UMI/ProQuest.

Library budgets are not growing to meet this increased demand, however, so resource sharing is being looked to with renewed interest. Libraries are experiencing increases in interlibrary loan (ILL) and are using FAX for document delivery between libraries. Another way to meet the increased demand for full text is to shift the costs to the user. CARL users who have a credit card can request documents to be FAXed directly to them. Internet users can get documents delivered for a fee to their E-mail boxes.

### Changes in patrons

One of the most fundamental changes is a shift in the expectations of library patrons. High school students who search CD-ROM versions of Readers' Guide, Newsbank, or Compton's MultiMedia Encyclopedia in their school library expect their local public library and later their college libraries to have CDs. The public library user who searches InfoTrac expects it to be there next month and next year. University faculty members or graduate students expect all indexes to be on CD (and to be accessible from their offices or homes).

It is not unusual for people to prefer to wait in line or come back later rather than use paper reference sources. That should tell us something; patrons have already made their choice. Increasingly they expect reference tools to be in electronic form and look to the library as an electronic pioneer. We cannot go back to print-based reference.

What users expect from bibliographic research is changing as well. Many expect that the "magic machine" will find everything on their topic and do much of their work for them. Undergraduates may feel that a CD-ROM search is all that is needed to find information; they may resist

looking through printed sources or searching for a topic not well covered in existing CD sources.

On the other hand, users are picking up valuable new kinds of thinking and research skills. Over the past few years, I've noticed a big difference in the way students approach computers and new databases. They aren't afraid to just sit down and try, to explore ondisc. Their expectations of their own capabilities, the power of indexing tools, and the number of references they will find are all higher. They retrieve more references more often and thus are better using our collections. Research no longer seems quite so dull.

### Changes in reference librarians

Once upon a time, reference librarians helped people become independent users of printed reference tools. They rarely did research for patrons—except in special libraries—but instructed the patron how to use the proper reference tools. Online searching changed that role for some reference librarians, because intermediary searching provided a package service to the user rather than fostering independence. End user searching of CD-ROM means returning to the original role.

Reference librarians in all types of libraries once again find their instructional role emphasized. Not surprisingly, patrons need help when using the CD-ROM resources for the first time, but it goes beyond the first time.

As libraries are adding more CDs to their collections, they may be adding a wide array of software packages. It is not unusual for a business section in a special, academic, or public library to have, for example, Business Periodicals Index from Wilsondisc, ABI/INFORM from UMI/ProQuest, Social Science Citation Index from ISI, Magazine Index+ from IAC/InfoTrac, and Sociological Abstracts from SilverPlatter. Each of these indexes has different search software, meaning different commands or menus, different screen layouts, and different output features.

Reference librarians must be able to help users, at any point of their search, with the features and peculiarities of the whole range of products. They must be able to troubleshoot Wilsondisc one moment, ProQuest the next, and SilverPlatter after that. This "by-the-seat-of-your-

pants" type of reference is probably the hardest there is. (In the middle of all of this, the printer inevitably runs out of ink, the paper jams, or someone reboots the system in order to do word processing.)

Librarians' formal bibliographic instruction (BI) role is being reemphasized as well. Good bibliographic instruction will forestall some of the problems mentioned above if a library has a large number of repeat users. In all types of libraries, classes in CD-ROM searching are a common sight. They may be a part of the normal workday or scheduled at off-peak times such as evenings or weekends. Many librarians find they need to prepare print instructions for the CD-ROM as well, even if patrons won't use them as often as they should.

Collection development choices were never easy. Now they are even more difficult as librarians must decide what medium is appropriate for each reference tool. A majority of patrons are sure to prefer the CD-ROM version over the print, but the CD-ROM may cost twice as much. If you can purchase two print indexes for the price of one CD-ROM, will the print indexes get twice as much use? Almost assuredly not. Logic doesn't always figure into the best final choice.

All of these increased demands on the time and expertise of librarians mean continuing education is essential. Librarians must have confidence in their ability to help and to recognize what is causing problems in a search on a variety of systems. Time is a precious commodity for a reference librarian. Time off to attend conferences or classes, time to experiment with new CD-ROM software, and time to prepare new user aids are all more important than ever.

CD-ROM is having profound impacts on collections, patrons, and reference staff of all types of libraries. But, as was pointed out to me by Parke Malcolm, vice president at University Microfilms International (UMI), "CD-ROM is the technology of the instant." UMI, like many other reference publishers, believes, "whether we deliver by film, fiche, paper, FAX, CD-ROM, or loaded on a central computer over a network is fine with us. We are not wedded to any particular technology. No one new technology will eliminate others. All will exist and will meet particular users' different needs." More media and more changes are sure to come.

Reed Business Information, a division of Reed Elsevier, Inc. All Rights Reserved.  
Copyright of Library Journal is the property of Reed Business Information and its  
content may not be copied or emailed to multiple sites or posted to a listserv without  
the copyright holder's express written permission. However, users may print,  
download, or email articles for individual use.