CD-ROM in 1986*

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Databases on CD-ROM (compact disk-read only memory) were the biggest news in the database industry in 1986. During the year, many new CD products became available, others were announced as forthcoming, and some of the big names in the information industry (e.g., DIALOG and H. W. Wilson) entered the CD marketplace. It was also a year of uncertainty and flux, with Digital Equipment Corporation (DEC) entering the market in the spring only to suspend its database distribution in the fall, prices of CD products changing frequently, and the number of users not yet approaching the projected figures. The professional literature was replete with articles explaining potential benefits of databases on CD-ROM; in addition, several books on the topic were published (see "References").

CD-ROM allows database producers to distribute copies of their databases on a medium that is more durable than magnetic disks and that provides high density capacity (up to 600 megabytes per 4¾-inch disk). Libraries can offer unlimited end-user searching of these locally held databases, because they are priced on a subscription basis rather than on a connect-time basis and because the hardware, software, and database are all under local control rather than being reliant on telecommunications networks.

Although the potential for use of and impact of CD-ROM on libraries, publishers, and the online industry is expected to be profound, most experts predict a coexistence of technologies. CD is expected to be used in libraries with high volume online use of particular databases for retrospective searching by end-users, in libraries that want to budget and pay ahead for searching, and in areas where telecommunications is a problem. Online access is expected to be used for current searches, searches on less-used databases, and searching by libraries that do not want to commit themselves to the upfront subscription costs of laser discs. Print is expected to continue to coexist with online and CD and to continue as most publishers' main revenue source for many years to come.

Because laser discs are a new distribution medium for databases, there are still several unresolved problems. Different products use different software, making it difficult for a library to provide access to all the databases it wants. Laser discs are not yet standardized, so every disc cannot be played on the same disc player peripheral. Investments in multiple microcomputer workstations make start-up costs high for the library. Most laser disc updates are sent monthly, quarterly, or yearly so the information is not usually as current as corresponding online products. Finally, because the industry is so new, it is easy to get confused over who is in the business, what products are offered, and how laser discs will complement or replace online or printed products. This article discusses some of the developments in this area during 1986.

DEC BOWS OUT

The instability of CD-ROM products is demonstrated by the exit of DEC from the CD-ROM database publishing market. DEC had agreements with several large database producers including Engineering Index, NTIS, and Chemical Abstracts to produce and market subsets of their databases on CD-ROM. DEC's ambitious plans at the beginning of 1986 included future development of an entire "library" of CD-ROM databases. Instead, after only six months as database publishers, DEC decided to refocus on their traditional strengths of hardware, software, and services rather than continuing in publishing.

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DEC still provides private compact disc production for in-house databases or for publishers who want to market their own databases. They also sell CD-ROM players and search software. For a library this private production service could be a way to distribute the online library catalog to remote sites or it could be used as a backup to the online catalog.

Mary Berger of Engineering Index (EI), one of the database producers affected by DEC's decision, spoke at the 1986 Annual Meeting of the American Society for Information Science. Berger discussed three areas of consideration for database publishers who are contemplating CD-ROM products.

The first area is *financial/business.* EI believed one advantage of CD-ROM over online was that they would maintain more control over their database. In reality, CD-ROM products are usually joint ventures involving, in addition to the database producers, software firms, disc mastering organizations, hardware vendors, and financial backers. Publishers do get more customer data than they do with their online products, but complete control is still not in the publisher's hands. In addition, the price of CD-ROM products must be set with the online, printed, and magnetic tape products in mind so no one customer segment is alienated.

The second area mentioned by Berger is *marketing.* EI first thought that CD-ROM would be a great way to tap new end-user customers, but they found that the existing online customers were most ready to adopt the new technology. Because they are experienced searchers, these existing customers want software with search features and access speeds comparable to online.

Berger's final consideration is *product design.* CD-ROM databases are so new that no one is sure how best to package the information. EI marketed three subsets by topic, a tactic that Berger said seemed to confuse customers. It was difficult for the customers to understand what was on each disc; they would have preferred the entire database divided by publication years.

Other packaging options would be to put partial records from a complete database on a disc (e.g., everything except abstracts), to put more than one database on a disc, or to mix bibliographic information with relevant numeric or full text sources. This last option is "where we ought to be headed" according to Berger, because "we don't want CD-ROM to turn into another microfilm, a convenient storage medium."[1]

NEW PRODUCTS

Although DEC's exit has removed some databases from the market, there seems to be an almost continual offering of new CD-ROM databases. A four-part directory by Bruce Connolly in *Database* and *Online* magazines has attempted to describe and keep current with all of the laser disc databases on the market.[2]

Laser disc databases are now available for many bibliographic sources, including PsycLIT, ERIC, AV-Online, Sociofile, and Excerpta Medica, all from SilverPlatter, Inc.; Aquatic Sciences and Fisheries Abstracts, Life Sciences, and MEDLINE, all from Cambridge Scientific Abstracts; ABI/INFORM and Predicasts from Datext, Inc.; Science Citation Index from ISI; Dissertation Abstracts; Microreviews from Knowledge Access, Inc.; Government Periodicals Index, LegalTrac, InfoTrac, and Magazine Index from Information Access Company (IAC); and Wilson indexes from the H. W. Wilson Company. Source databases include Grolier Electronic Encyclopedia; Poisindex, Drugdex, Emergindex, and Identidex from Micromedex, Inc.; DISCLOSURE; full text of The Wall Street Journal from IAC; Business Research and Marquis Who's Who from Datext, Inc.; EBSCO Serials Directory and Occupational Health and Safety Information from SilverPlatter; and Books in Print and Ulrich's from R. R. Bowker.

Some of the new CD-ROM products that are of the most general interest to libraries are discussed below.

WILSONDISC

At the ALA meeting in January 1987 the H. W. Wilson Company announced the upcoming availability of their CD-ROM WILSONDISC. Twelve of the Wilson indexes are available as separate CD products. Each disc contains retrospective information corresponding to the date the index went online, providing retrospective coverage ranging from early 1981 to December 1984. Index to Legal Periodicals, for example, includes references from August 1981, Readers' Guide to Periodical Literature from January 1983, Education Index from December 1983, and Library Literature from December 1984. Each CD database is updated (and cumulated) quarterly. The annual subscription price ranges from $1,095 to $1,495 per index.

The WILSONDISC search software offers several choices for searchers with different levels of experience. Intermediary searchers may choose to use a replica of the regular WILSONLINE system or "Expert WILSONLINE" commands if they are very experienced. Less experienced searchers might opt to search WILSONDISC with the end-user WILSEARCH software or an even simpler "browse mode" system, where users rely on paging through an alphabetical list of subject headings.

With a modem and a WILSONLINE account, users of the CD-ROM database can use the same microcomputer workstation to dial-up the Wilson mainframe system. A compact disc subscription includes unlimited online searching on the corresponding online database. The subscriber pays only for the telecommunications charges. This enlightened policy will allow great flexibility for intermediaries, as they can immediately and inexpensively update a CD-ROM search with the more current materials that are only available online. The Wilson workstation acts as a combination CD-ROM system, front-end, and online system for a single subscription fee. All of the appropriate hardware and software can be purchased from the H. W. Wilson Company for a price of $4,995 for the complete workstation.

INFOTRAC II

On 15 December 1986 Information Access Company added a CD-ROM product to their twelve-inch laser disc InfoTrac product line. "InfoTrac II" covers Magazine Index citations for the current year and three back years, plus three months of current indexing for The New York Times. Subscriptions to InfoTrac II include a microcomputer workstation with built-in CD-ROM player, a printer, software, and monthly updates. The cost is $4,500 per year.

InfoTrac II search software provides the same simplified searching that comes with the InfoTrac I system. Searching is done by browsing modified LC subject headings; no free text searching or Boolean combinations are allowed.

R. R. BOWKER

R. R. Bowker Company introduced CD-ROM versions of two of their popular reference works this fall. Books in Print (BIP Plus) includes the 1986-1987 records for the entire Books in Print series (including *Books in Print, Subject Guide to Books in Print, Books in Print Supplement, Forthcoming Books*, and *Subject Guide to Forthcoming Books*). In addition, the disc contains names and addresses of publishers.

Ulrich's Plus includes records from the 1986-1987 editions of *Ulrich's International Periodicals Directory, Irregular Serials and Annuals, International Serials Database Update* plus an ISSN index and addresses of periodical publishers.

Both databases will be updated quarterly. Prices for the database with software are $895 for BIP Plus and $395 for Ulrich's Plus.

SILVERPLATTER

SilverPlatter's databases have been available for several months, but prices were revised this fall. An "ERIC CD-ROM starter kit" is available for $1,550 per year. This includes a disc with the three most recent years of ERIC records (including abstracts) which will be updated annually. The starter kit also includes a CD-ROM disc drive and the SilverPlatter retrieval software, which includes such features as Boolean combinations, truncation, and free-text searching. Libraries must have their own IBM PC computer.

Backfiles of ERIC may also be purchased on CD-ROM. Records from 1966 to 1982 for Resources in Education (RIE) are available for $1,500. Current Index to Journals in Education (CIJE) covers 1969-1982 for $750. Both archival sets (three discs) sell for $2,000. New SilverPlatter pricing options are also available for the PsycLIT database from the American Psychological Association. Both a retrospective and current disc, each including citations and abstracts to the journal literature portion of PsycINFO, are available for lease. The retrospective disc covers the period 1974-1982 and now costs $1,495 for the first year of use. Each subsequent year costs $1,195. The current disc (1981-) is updated quarterly for an annual subscription price of $3,500. There are discounts of 10 percent for subscribers to *Psychological Abstracts* in print.

DIALOG ONDISC

DIALOG announced its entry into the CD marketplace at the end of the year. The first database OnDisc is ERIC (since it is in the public domain and, appropriately, was DIALOG's first database online). ERIC OnDisc includes the entire ERIC database from 1966 to the present on a three-disc set for $3,450. The annual fee for the current disc only (1981-) is $1,950. The current disc will be updated quarterly.

The DIALOG OnDisc search software offers two search options. Experienced searchers

can search using the standard DIALOG commands or novice searchers can select a simpler menu-driven version. (The OnDisc search software is more attractive than online DIALOG, making use of color and word highlighting.) As with the Wilson disc system, DIALOG OnDisc searches can be saved and uploaded to the full online system for current awareness searching.

DIALOG is planning an entire family of CD databases in the future. Six additional products will be introduced in 1987 aimed at different vertical markets.

STANDARDS

A problem for CD-ROM consumers has been the lack of standardization. The lack of a disc formatting standard means that one cannot simply purchase a CD-ROM player and assume it will work with all discs purchased. Many database producers have gotten into the business of leasing or selling CD-ROM players to ensure compatibility. A proposed ANSI standard for CD-ROM is being voted on by members of the National Information Standards Organization (NISO) in late 1986.

The "High Sierra Group," a group of computer manufacturers, developed this proposed standard. The standard deals with volume and file structures—where information is located on each disc and how that information is addressed by the computer. (Standards for things such as external labeling and bibliographic description may be separate standards developed later.) The European Computer Manufacturers Association has proposed a similar data structure standard to the International Standards Organization, so a compatible United States-international standard for CD-ROM may be forthcoming. Detailed technical explanations of the standard can be found in *CD-ROM Standards: The Book*.[3]

CD-ROM SURVEY

Sociological Abstracts included a questionnaire on CD use in its April 1986 *Note Us* newsletter. Preliminary findings (reported in the October 1986 *Note Us*) showed that 34.5 percent of the respondents felt they would have a CD-ROM search station installed in their facility between 1986 and 1988. Only 23.4 percent felt they would not; the rest either did not know or had no answer.

Respondents were divided on what should be included in a Sociological Abstracts CD-ROM product, but by far the largest number (33.9 percent) favored the entire database from 1963 onwards. The second most popular choice (17 percent) was English-language entries from 1974 onwards. Price was definitely a factor in potential use, with only 0.6 percent indicating they would be likely to subscribe to the CD-ROM product in 1986 or early 1987 if the cost was between $4,000 and $6,000 per year.

CONCLUSION

The Sociological Abstracts survey and observations made by Mary Berger of Engineering Abstracts help to summarize the current state of the CD-ROM database market. Berger's observations included the following:

- The existing online marketplace will be the first to adopt CD-ROM.
- Users need computer literacy because it is more difficult to get the CD-ROM database system up than it is to start online searching.
- Intermediaries will introduce end-users to CD-ROM.
- Database producers have a "long sell" and will not realize quick payoffs. Potential customers need many demonstrations before they are ready to purchase and much hand holding once they purchase the CD-ROM system.
- Training and hotline services are needed for CD-ROM databases just as they are for online.
- CD-ROM products should be different products or be aimed at new users rather than just replicating the online database.
- Software must be up to par in terms of access speeds and search capabilities.[4]

The following are further observations on the CD-ROM market.

- Lower cost products are needed if the CD-ROM potential is to be fully realized.
- Many users want complete databases on CD or segregation by time periods.
- Online will be used to supplement CD use for current information or seldom used databases.
- Users would like database discs to be compatible so they can use the same equipment to access multiple databases.

As is evident from this review, CD-ROM, like all new technologies, remains in its infancy. A review of progress five years from now will likely make 1986 developments look primitive indeed.

NOTES

[1]Mary Berger, "CD-ROM and Optical Publishing" (Paper delivered at the 49th Annual Meeting of the American Society for Information Science, Chicago, 28 September-30 October 1986).

[2]Bruce Connolly, "Laserdisk Directory, Part 1," *Database* 9 (June 1986): 15-26; "Part 2," *Online* 10 (July 1986): 39-49; "Part 3," *Database* 9 (August 1986): 34-39; "Part 4," *Online* 10 (September 1986): 54-58.

[3]Julie B. Schwerin, et al., *CD-ROM Standards: The Book* (Medford, N.J., Learned Information, Inc., 1986).

[4]Berger, "CD-ROM and Optical Publishing."

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