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Has Online Made CD-ROM Obsolete?

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[Based on a presentation for the Washington Library Association, May 1996]

CD-ROM IS ONLY about 11 years old, so it may seem ludicrous to suggest it has become obsolete. But popular computer magazines and the library literature now question the longevity of CD-ROM because of the rise of commercial online services and the Internet. (Ironically, ten years ago many of these same publications predicted the demise of online due to the potential of CD-ROM.) How serious are these predictions? Should libraries abandon their investments in CD-ROM in favor of online in all its forms?

The notion of "obsolete" varies. While one dictionary definition is "no longer in general use," another meaning is "of an outmoded type, out of date." Just because something is "out of date" technologically does not mean it can't help the general user. We use outmoded things every day—pencils, floppy disk drives, radio. Thus, in the short-term, CD-ROM should be useful; the long-term answer is more complex.

Growth of CD-ROM industry

There are several ways to measure the growth of the CD-ROM industry. For example, this year, the research firm SIMBA, in "The Economics of Multimedia Publishing," found that total CD-ROM unit sales (titles) have increased exponentially, from two million in 1992 to 8.5 million in 1993 to 27.8 million in 1994. Forrester Research last year predicted that retail CD-ROM sales will nearly triple, from $584 million in 1994 to $1,476 million in 1996 and almost $4000 million by 1999.

Moreover, 95 percent of all new PCs now come equipped with CD-ROM drives, whose sales have at least doubled for five straight years. Today the combined worldwide installed base of CD-ROM drives is over 54.7 million.

These figures don't show the total picture, nor do they measure actual CD-ROM use. Of the 1995 sales of titles to the consumer market, over 14 percent were returned, many of them Christmas gifts to people who couldn't get them to run on their computers.

While Martha Williams's introduction to the annual *Gale Directory of Databases* describes a steady growth in CD-ROM products, CDs are still much less pervasive than commercial online products. In 1990, online titles made up 53 percent of the database total; CD-ROM made up ten percent. By 1995 online was 55 percent and CD-ROM 23 percent, but that growth has come at the expense of products on floppy disk or other magnetic media. If web titles are factored in, CD-ROM plays an even smaller part in electronic information gathering.

Types of CD-ROM titles

None of these figures show what's available on CD-ROM. Although bibliographic databases marketed to libraries represented the first success for this medium, such titles –which are still sold to libraries –have been eclipsed by other titles (full text, multimedia, popular) in today's total CD-ROM marketplace.

Forrester Research's report on retail CD-ROM sales found games and children's titles to be the most popular sellers, followed by adult reference. These are almost all multimedia products—not text only—which may be most vulnerable to competition from the web and the looming prospect of interactive TV. The average multimedia publisher last year still generated 84 percent of its revenues from CD-ROM, as compared to floppies or online, yet there have been persistent rumors that some major players are planning to drop CD-ROM. The other big segment of the CD-ROM industry concerns software distribution, led by Microsoft.

Libraries were the earliest market for CD-ROM. Almost all university libraries, over 90 percent of high school and college libraries, and well over 50 percent of corporate and public libraries collect CD-ROMs. Most have offered multiple titles for several years.

Evan St. Lifer's "Catching on to the 'Now' Medium" (*LJ*, February 1, 1995, p. 44–45) reported that 70 percent of libraries overall have bibliographic databases on CD-ROM, 59 percent have other reference titles, and 32 percent have specialized titles. Only 23 percent carried multimedia CD-ROMs and only four percent circulated them.

Libraries for several reasons do not have nearly the multimedia presence that the consumer market does. Multimedia titles often have site licenses that prohibit networking or circulation. Also, they may demand an expensive hardware investment for titles that may be of interest for a relatively short time.

Though school libraries were not in *LJ*'s survey, they are the one segment of the library market that joined the multimedia trend early. *School Library Journal* found in a survey way back in 1994 that even then three-quarters of school libraries had CD-ROM encyclopedias and over one-half had text-only indexes.

Digital videodiscs

The introduction of DVD (digital videodiscs) may change the CD-ROM landscape. DVD drives should be out by the end of this year. They can read discs containing at least 4.7 gigabytes of data, more than seven times as much as today's CDs. Dual-sided discs would double data capacity.

DVD primarily concerns entertainment, possibly replacing videotapes and VCRs for viewing movies. Another promising market might be interactive books with high-quality graphics and video that lasts more than just a few seconds. For bibliographic databases, the complete backfiles of ERIC, MEDLINE, and the Library of Congress Marc files would fit on a single disc.

DVD drives will be able to play

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old CD-ROMs and CD audio (but not CD-recordable) discs. However, new DVDs can't be read on an old drive. The first DVD drives will cost between $600 and $700 retail. Most will be computer peripherals, while some may sit near the TV.

Competition from the web

The trend toward multimedia, recreational, and educational use is not just a CD-ROM trend as well. Many see the web as the biggest competitor to CD-ROM. For bibliographic databases, many online vendors (for example, OCLC, Information Access Co., UMI ProQuest Direct, EBSCOhost, etc.) have introduced or are introducing web versions in 1996 that may be more attractive for libraries than the CD-ROM versions.

However, many fee-based information products will not join the web soon. The web culture creates expectations of free (or low-cost), freely copyable information. Some commercial publishers are not ready to put their products on the web for reasons of security, copyright, and control.

Others see the web and CD-ROM as compatible, leading to the creation of CD/online products using the strength of both. You may purchase a CD with information on a certain recent period, then go online to get new materials (or to get archives). You may have software distributed the first time on CD-ROM, then go online to get updates. Or, you may have a CD-ROM with a limited amount of information and go online to get further details or full text.

When does CD-ROM make sense?

For certain types of materials and certain users, CD-ROM is not obsolete and will not be for at least four years. These include:

- multimedia (books, games, reference materials);
- standalone titles such as single books that replace or enhance printed book collections;
- CD book collections that bundle a group of titles (such as the children's book collection *Wiggleworm*).

Some uses still make sense for CD-ROM. These include:

- for a single user or up to a few dozen users on a network will probably work fine before you start transferring content to hard drives or go online;
- when content and interface and search techniques are very much tied to each other (for example, many children's books use the main title character as part of the interface);
- when learning, not just answering facts, is a part of the experience;
- when you serve a relatively homogeneous population, as in a school library;
- for formal published multimedia titles that are not available elsewhere (for example those not on the web because publishers do not trust it for security, copyright, etc.).

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When does online make more sense?

Online is superior for certain types of materials, including:

- bibliographic databases (e.g., union catalogs) that are large and frequently used and updated;
- many directories (especially those that need to be updated often);
- ASCII full text (because searching of large databases is easily and quickly done online);
- image collections or static texts such as journal articles (because few articles in a journal collection will likely be used and the limited storage capacity of CD-ROM doesn't match the huge storage requirements of large image collections); and
- large databases (CDs don't yet hold enough for huge bibliographic databases, and it is likely to be a few years, if ever, before DVD makes an impact on the library-only marketplace).

Online also makes more sense:

- when you require many simultaneous users, who would slow down CD-ROM response time;
- when sophisticated search techniques such as crossfile searching are needed;
- when you serve a heterogeneous population that needs great variety in types of sources, subjects, or topics searched (for example, in a large public library or university library);
- when you have many users and much use (this is counterintuitive if you think of the old online model where you pay by the hour. But new online models provide subscriptions or pay per search schemes, and the response time for high-volume use may be better online than with CD); and
- when you have lots of use from outside the library (dorms, offices, homes) but provide services that allow users to dial into the library or through the library. (The library adds value through pointers, subsidies, guidance, and help to a variety of online services.)

What are the individual exceptions?

Not all decisions are so clear-cut. For certain instances or certain users, CD-ROM may still be warranted:

- where the telecommunications infrastructure is unreliable or prohibitively expensive;
- when control over what people see or use is desired (e.g., in some countries, or even schools, that don't want unchecked outside influence); and
- when ownership is important for collections or for self-sufficiency. (CD-ROMs are much like books—they can be counted, they can be seen [sort of], they are paid for up-front. This model is comfortable and understandable to budget officers, administrators, and funders.)

How long will CD-ROM be around?

Karl Beiser, CD-ROM columnist for *Online* magazine, said it well in his January 1996 column:

> Open Secret #87 of personal computing states that 'obsolete' in a computer context is synonymous with 'reliable' and bears no relation at all to longevity.
>
> CD-ROM is reliable, widely supported, and entirely adequate for many important tasks....The next time the conversation turns to matters of modish technology and someone asks if you have heard that CD-ROM is obsolete, tell them that it is about time. After all, it is only the obsolete stuff that one can count on being around for a while.

No disagreement here. "Obsolete" CD-ROMs will be around in libraries for quite a while.