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Carol Tenopir
University of Tennessee - Knoxville

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Costs and Benefits of CD-ROM

[This is based on a presentation at the 1987 LITA Preconference on Optical Publishing and Libraries.]

AN INCREASING number of indexes and abstracts are available on CD-ROM in addition to their print and online versions. Some of them are exact duplicates of the print or online products, others are subsets or enhanced versions. The number of CD-ROM publications is expected to continue to grow as publishers look for a variety of distribution alternatives for their products.

When the same (or similar) material is available in a variety of formats, librarians must make difficult purchasing decisions. Each medium offers its own unique advantages and has its own disadvantages. The advantages must of course be weighed against the costs of each medium in order to make an intelligent decision. The final decision may be to purchase (or continue) only one form of a work or to simultaneously use more than one form.

All immediate startup and ongoing costs for each option should be considered. Although the precise costs are different for each index and in each library, costs can be broken down into the following major categories: subscription, purchase, or access price; physical processing; intellectual processing; staff time; space; furniture; equipment; and maintenance and supplies.

Subscription, purchase, or access costs

Costs of different products may be difficult to compare because each publisher sets its own subscription, purchase, or access policies as well as its own pricing schedule. Several common alternatives for each medium exist, however.



Carol Tenopir
is Assistant
Professor at the
Graduate School of
Library Studies,
University of
Hawaii, Manoa

Printed indexes are usually purchased on a subscription basis. Once a volume is purchased it is owned outright by the library. The yearly subscription price typically covers monthly or quarterly update volumes plus a yearly cumulated volume or volumes. If a current subscription is canceled, the library retains all of the previously purchased volumes.

Online is typically on a pay-as-you-go basis. The library pays for the amount of time it is connected to a database and/or for the amount of information accessed. Connect time may be lower if the library commits to a minimum number of connect hours. There may be some startup fees or monthly minimum fees, but they are usually low.

CD-ROM is typically on a subscription-lease arrangement. Libraries purchase *permission to use* a CD-ROM database, not the discs themselves. Under this arrangement, if a current subscription is canceled, all discs must be returned to the publisher. Thus, libraries will no longer have access to retrospective information on disc if they cancel their current subscription.

Most of the major CD-ROM indexes operate this way, but there are exceptions. When an updated WILSONDISC is received by a subscribing library, the library may give the old disc to a branch or another library (but they may not sell it). PAIS will let the library keep the last disc received if the current subscription is canceled. (Nonsubscription reference discs such as the *Kirk-Othmer Encyclopedia of Chemical Technology* from Wiley are often owned outright by the purchasing library.)

Some publishers establish price links between the different versions of their indexes. A subscription to a CD database from WILSONDISC, for example, includes unlimited access to the corresponding online database. This allows users to start a search on the CD database (updated quarterly), then find the most current information on the online database (updated twice a week) for only the cost of the telecommunications ac-

cess fee. Access to all of the other WILSONLINE databases is allowed with the user's password, but at the standard connect-time rates. Wilson also links its print products to its online product by offering online discounts to subscribers of the corresponding printed index.

Psychological Abstracts offers ten percent discounts for multiple subscriptions to their CD-ROM product and ten percent discounts for subscribers to the printed index. Other database producers offer reduced online rates for subscribers to their printed products.

Physical & intellectual processing

Startup physical processing costs for printed indexes include the costs of setting up a check-in record, shelf markers, and labeling any back issues ordered. (In most cases printed indexes are already being received by the library so this has probably already been done and the decision will be whether to continue an existing subscription.) The physical startup procedures for online access entails getting the software and/or equipment set up, a process that does not take much time especially if the library has some experience with microcomputers. CD-ROM startup requires installation of the hardware and software.

Ongoing physical processing costs associated with print are the time (and therefore costs) of: checking in volumes, labeling, claiming (if necessary), targeting volumes for a security system, shelving, and re-shelving. The major ongoing processing cost for online is the updating of search aids and manuals. CD-ROMs may be checked in like printed volumes (so a check-in record must be established). For most CD indexes, the old discs must be returned when updates arrive.

Intellectual processing costs are typically at startup when the new material is cataloged. Almost all libraries catalog printed indexes, some catalog CD indexes, hardly any catalog online databases. The cost of cataloging will vary in each library.

Staff time

A more substantial cost factor is that of staff time. Staff time is required to learn to use a product, to use it to find needed information, and to assist patrons in using it. Startup time for printed products is minimal, CD-ROM products require some orientation and practice, and online searching requires extensive training and practice.

On an ongoing basis, staff time with print and CD products is primarily to assist patron use. Online requires substantially more staff time to do searching for patrons or to assist patrons to do their own searches. Ongoing refresher courses for online intermediaries are recommended.

Space, furniture, & equipment

The equipment or furniture required to use a particular medium is related to the amount of space needed by that medium. Equipment and furniture are mostly startup costs, while the cost of space is ongoing. For printed indexes there is an investment in furniture (shelving, tables, chairs), but usually no other equipment is needed. Floor space requirements can be substantial with printed indexes (Cohen and Young, of Aaron Cohen Associates,¹ estimate .1 square foot per volume).

The startup and ongoing costs vary with the size of the index and how many older volumes are retained by the library. Floor space requirements for printed volumes usually do not completely disappear when a print subscription is replaced by online or CD. Most online or CD products do not go back as far in time as the printed indexes, necessitating retention of some older volumes.

Discounting the retention of older printed volumes, online frequently has very low space and furniture costs if searching is done by the librarians in their work areas. End user search areas require space for terminals or microcomputers, some user aids, and a small work area (Cohen and Young estimate 40 square feet per workstation). Phone lines must be available. Startup equipment costs are of course higher, requiring at least one microcomputer with modem, communications software, and printer (or a terminal). If the microcomputer is located in the librarian's work area it can be used for other things, so the cost is not borne totally by the online service.

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CD-ROM has the highest equipment costs of the three media. A typical workstation consists of a microcomputer (frequently requiring a hard disk drive), a CD-ROM player, and a printer. One workstation typically costs around \$5000. Many libraries will want more than one workstation to minimize patron queues. Furniture required includes a table and chair(s) for each workstation. With telephone lines, a modem, and appropriate software, the CD-ROM workstation can serve double duty as an online station.

Maintenance/supplies

Printed indexes require only physical processing supplies (e.g., labels) and preservation costs (e.g., repair or binding) in the way of maintenance and supplies. Because both online and CD require hardware, there are the costs of hardware maintenance, either on a yearly contractual basis or as needed for repairs. Both also require printer supplies (e.g., paper and ribbons or ink cartridges). The cost of such supplies is not inconsequential, especially when the system is in a public area.

Source of funds

Where will libraries get the funds for yet another new medium? There are several options being considered in libraries. One option is to cancel subscriptions to the printed equivalents and use these funds for the CD-ROM subscription. One problem with this approach is that the startup costs must still be borne. Even if the

startup costs are not considered, yearly subscription prices for CD-ROM databases are still typically higher than the price of a subscription to the printed equivalent (CD subscription prices are expected to come down at some point).

If a current subscription to the printed form of an index was no longer available, many libraries would need to have more than one CD-ROM workstation to accommodate demand. Multiple workstations mean multiple subscription and multiple hardware costs. A second option is to pay for CD-ROM databases from the materials budget just as any other subscription. If no increases in the budget are possible, libraries must re-examine their total acquisitions patterns and user needs in order to set new priorities. One problem with this option is that the other items in the materials budget are owned, while most CD products are only leased.

A final option is to charge patrons for use of the CD-ROM database. Most libraries now charge for online access, but very few assess a direct fee for the use of a printed index. CD-ROM costs are different from online costs in that online costs are associated with amount of use and CD costs are not. Like a printed index, the library pays a set price for a CD database subscription, regardless of how much it is subsequently used. Determining a fair and adequate access price would be guesswork at this point. Charging for a database on CD-ROM raises basic philosophical issues beyond the scope of this talk.

Some libraries have funded their first year of CD-ROM access through grants. A grant may cover startup costs, but when it runs out these libraries must face the same cost decisions as other libraries if they are to continue their subscriptions.

Most studies of the problem conclude that all three media are likely to coexist in libraries. The advantages of each are thought to justify this coexistence, while the cost differences are not sufficiently clear to base a decision on cost alone.

References

1. Cohen, Elaine & Margo Young, "Cost Comparison of Abstracts and Indexes on Paper, CD-ROM, and Online," *Optical Information Systems*, Nov.-Dec. 1986, p. 485-490.

