V The Product Arena

"The race is not always to the swift or the battle to the strong but that is the way to bet." Damon Runyon

The information CD-ROM--unlike the **audio** CD--has been comparatively slow to make headway in some market segments. There have been a number of CD-ROM winners, garnering sales in excess of 1,000 units. Although the CD-ROM producers do not generally publish their sales figures, industry observers suggest that a handful of products has been quite successful. These winners include:

- **Books in Print Plus**", a combination of reference and book review information, published by R.R. Bowker, a unit of Reed International. Sales in 1989, according to a company manager, exceeded 1,000 units.
- **Compact Disclosure,** a CD-ROM containing information from Securities & Exchange Commission documents. More than 10,000 companies are in-

cluded in the database. More than 1,000 sales to libraries and analysts in corporate, financial, and academic markets are said to have been made.

- Grolier *Academic American Encyclopedia*, one of the first reference CD-ROMs shipped, has sold more than 2,000 units. The product has been purchased by libraries and individuals.
- Poisindex® by Micromedex. The company has a number of CD-ROM titles which provide specific medical reference data. Shipments of the company's products exceed 200 units per month. The market is hospitals and other health care facilities. The CD-ROMS are placed in the libraries and treatment rooms.

Other products which are frequently mentioned as having a significant sales impact are Microsoft's Bookshelf, which provides a number of frequently-used reference books for writers on a single disc. Information Access Co., long recognized as an innovator and leader in nonprint reference tools, has assumed the position of the de facto benchmark in CD-ROM reference materials for the public and undergraduate libraries. Sales figures for their InfoTrac[®] product line are not available, but our estimate is that more than 1,200 libraries have one or more of the IAC CD-ROM products. Finally, a number of companies provide the Library of Congress MARC database on CD-ROM. It is difficult to pinpoint which vendor has achieved the highest number of sales, but our estimate is that Bibliofile from Library Corporation has sold more than 1,000 libraries its CD-ROM system for creating catalog cards.

In short, there have been some significant breakthroughs in the CD-ROM information arena. These achievements, however, have not come easily. There are more than 1,000 information CD-ROMS available as of this writing in April 1990. More are announced each month.

Pricing

An editorial in *Laserdisk Professional* reported that CD-ROM prices to the customer fell into three broad categories.' About half of the products currently available cost less than \$1,500 per year. The products have different update cycles and information content. About Onequarter of the products analyzed cost more than \$5,000 per year. The majority of these are targeted at businesses, and their content provides information appropriate to executive decision-making or financial analysis.

The remainder of the products cost between \$1,500 and \$5,000 per year. The companies choosing to price their products in the mid-range are SilverPlatter and H.W. Wilson. What's interesting about the resulting pricing curve shown in Figure 1 is that only one of the lower priced CD-ROMs--Grolier's Academic American Encyclopedia-made it to our list of winners.

The tabulation in Figure 2 shows the approximate distribution of CD-ROM information products by type of market sought by the vendor. This preliminary analysis examines the content of CD-ROMs listed in the December 1988 issue of CD-ROM Review, a magazine which has ceased publication. The principal categories are:

. Business (legal, financial, numeric, or text).

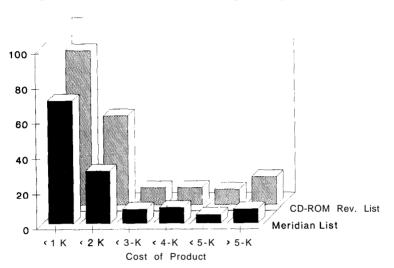


Figure V.1 A CD-ROM Pricing Analysis

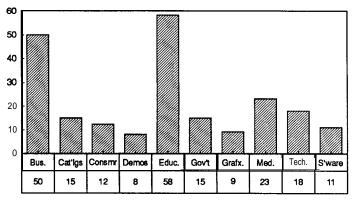
- Education or Library (including general reference materials).
- Graphics (including any image or picture discs).
- Scientific and technical.
- Promotional or demonstration discs.
- Medical.
- Consumer (any disc which has a consumer orientation).
- Government.
- Software.
- Catalogs or documentation.

As our analysis shows, the majority of the current CD-ROMs are intended for well-defined market segments. The vendors are concentrating their marketing efforts on business and education/library market segments. The education market is comprised of mostly public and academic libraries providing information tools to their user communities.

Keep in mind that none of the CD-ROM product winners we've identified has achieved the volume associated with cd audio because computer-based information products for the most part appeal to comparatively smaller markets. The difference between the two market sizes is startling: millions of audio discs versus thousands of information discs.

Other reasons for the niche nature of the market include:

Figure V.2 CD-ROMs by Type and Market



CD-ROM Review, December 1999 data.

- The base of CD-ROM consumers is small compared to the base of consumers for other types of information products. Even though CD-ROM discs can be replicated economically, the numbers sold by most vendors are quite modest and are counted in the hundreds
- The majority of the CD-ROM products investigated in preparing this analysis are variants of the online information product. The capabilities of the CD-ROM have been designed to provide a supplement to online service. Most of the products do not represent a unique application of the innovative and promising optical technologies. As a result, the majority of the CD-ROMs we have examined are derivative or me-too products. A few, including Lotus Corporation's CD/Corporate@ is quite imaginative and hints at the richness of the CD-ROM technology.
- The shifting sands of standards and technology will inhibit some CD-ROM product development activity. The number of known winners is small, and the lack of financial Success for most CD-ROM producers will restrain the new product flow.

A Buyer's Market

The consequences of this product situation are generally favorable for purchasers. The reasons are:

 Prices are likely to come down as the major CD-ROM publishers strive for market share in the niche markets that have money to spend for information. These markets include financial, legal, medical, library, and business segments.

- The present product implementations will make use of the most reliable technology. Therefore, obtaining a CD-ROM today from one of the major vendors provides almost iron-clad certainty that the product and the technology used for that product implementation will be supported for the foreseeable future. It is highly unlikely that a major disc producer--1AC or H.W. Wilson, for example-would leave their customers stranded.
- It's a buyer's market. Purchasers are in a strong position to negotiate favorable deals. Producers are willing to wheel and deal with respect to equipment, discounts of additional subscriptions, or enhanced payment terms.

The Product Portfolio

From the viewpoint of libraries, there are a number of CD-ROM collection development options. Whichever option is chosen, make certain that you take full advantage of your position as a buyer. The bottom line is that you should be fully informed about the particular product of interest, know the technologically important issues, and be prepared to ask for terms appropriate to your specific situation.

Before you acquire any CD-ROM product or add to the library's CD-ROM collection, there are several important points to keep in mind:

Buy from a Single Vendor

- Make certain, if possible, that the vendor is established.
- Buying from one source usually means that a consistent interface will be offered (controller board for the PC to connect to the CD-ROM drive). It is also likely that the installation procedure will be the same for all the vendor's products or will exhibit minor differences. This homogeneity reduces the learning curve and simplifies getting the products up and running.
- Your CD-ROM vendor may now be a company you are dealing with. Deeper discounts can often be negotiated when the library purchases several discs at one time.
- Consistent interface for most products.
- A wider choice of titles and often more search capabilities.
- System support.
- High end-user visibility for well-known products.

Buy from Different Vendors

When you shop around, you gain some advantages, but lose some of the convenience associated with one-stop shopping. Expect to encounter the following:

- The widest choice of titles.
- System problems which will require that you have an excellent knowledge of DOS and familiarity with interfaces.
- Inconsistent hardware requirements which may require the library to buy several different CD-ROM drives.
- More complex purchasing process because you'll be dealing with numerous vendors. The entry of subscription services like EBSCO may help alleviate this problem.
- Fewer discounts.

The Family Phenomenon

One relatively recent development has been the marketing of a family of CD-ROM products by a number of the largest, most well-established library service companies.

One advantage of buying a CD-ROM product from one of the companies offering a group of discs with a common interface is that technological change will be evolutionary. The products will not be orphaned, and library customers will be able to use today's hardware and software for a number of years. Moreover commonality in the interface

and searching commands can lower training costs and make CD-ROM services more efficient.

We suggest studying the products of these companies to get an understanding of CD-ROM features and vendor approaches:

- Dialog@ Information Services
- H.W. Wilson & Co.
- Information Access Co. (IAC).
- SilverPlatter.
- University Microfilms (UMI).

There are two approaches a vendor can follow when offering information families.

The most common approach is for a vendor to take information products from a variety of database producers. The integrator brings a common identity and, if possible, a uniform interface. Dialog Information Services and SilverPlatter are two well-known firms following this approach.

To give you an idea of the scope of the integrator's product offerings, OCLC advertised in March 1989 this family of information products under the family identity OCLC Search CD450:

- General Reference: Amonthly Catalog
- **Education: ERIC**, Education Library, and School Match.
- Agriculture: Agricola, CRIS, and Agriculture Library.

 Science and Technology: Earth Sciences, NTIS, Computer Library, Energy Library, and Environment Library.

OCLC's product mix offers a library a core of reference tools in three disciplines.

The second approach is for a publisher to offer its **own** information products in a family. Three companies adopting this strategy are **IAC**, **UMI**, and H.W. Wilson. Other publishers have offered two or three CD-ROM products, but these three firms have been able to implement the family strategy on a broad front. To illustrate: the line-up of H.W. Wilson's CD-ROMs includes:

- Applied Science and Technology Index.
- Art Index.
- Biography Index.
- Business Periodicals Index.
- Cumulative Book Index.
- Education Index.
- General Science Index.
- Humanities Index.
- Index to Legal Periodicals.
- Library Literature.
- MLA International Bibliography.
- Readers' Guide to Periodical Literature.

The prices for these products range from about \$1,100 to \$1,500 per year.

Advantages of Buying Family Products

The principal advantages of buying products in a family include:

- A common interface. Your clients or patrons don't have to struggle with different search software and screen displays.
- Service and support from one source.
- New products will be introduced with regularity, which helps to ensure that the library can expand its CD-ROM collection.
- In general, the companies ship quickly.
- These companies can provide one-stop shopping so you do not have to deal with multiple vendors.

Disadvantages of Buying a Family of Products

- Potential difficulty using other publishers' CD-ROMS on present hardware.
- Subject selection is limited.
- Loss of flexibility due to the commitment to a single supplier.

Is There One Best Strategy?

There is no single strategy for acquiring a CD-ROM product portfolio. In actual practice, an optimal strategy

is the one which allows the best balance of content, cost and such factors as interface and service.

There are three approaches to building the CD-ROM product portfolio. For illustrative purposes we have characterized the strategy in terms of a particular information service and a representative library delivering that service. Your situation, regardless of library type, can make use of one or more of these approaches.

Subject Specialization

Special or research libraries often have one or more areas which require a narrow topic to be covered in depth. A medical library may need to have thorough coverage of cancer data, for example. The strategy for these libraries can include:

- **Product Portfolio Strategy 1:** Discs from a variety of vendors. The driving force is disc content.
- **Benefits:** Purchaser can shop around for the best content. Purchaser has maximum flexibility.
- Challenges: Getting equipment from several vendors to work; negotiating prices; multiple interfaces for staff and users to learn.

Modest Size, Multi-Disciplinary Focus

Many public and academic libraries must balance collection development in specialized areas against general reference requirements. CD-ROMs must show wide coverage of the popular literature and include the most important titles in major disciplines; for example,

business, computers, and entertainment. For these libraries, the strategy can include:

- . **Product Portfolio** Strategy 2: A single vendor's family as the core collection. Supplement the collection with discs from other vendors as needed.
- . **Benefits:** Stability in equipment, technology, and disc interface; little or no training for users.
- . Challenges: Title selection, meeting user demand.

Large-Scale General Reference

Public libraries located in large metropolitan areas and the libraries serving undergraduates at state universities have to meet the informal ion needs of a wide range of patrons. It is unlikely that a single vendor's CD-ROM product line can provide adequate coverage. The strategy for these institutions can include:

- Product Portfolio Strategy 3: Two or more families supplemented by specialty discs.
- **Benefits:** Develop two relationships to ensure complete coverage.
- **Challenges:** Manage a mixed equipment environment; train users and staff on multiple products.

If your information plan calls for a limited number of CD-ROMS with a fairly well-defined subject coverage, your library can easily accommodate electronic products from two, three, or more vendors.

In some general reference settings, multiple copies of single titles and broad subject coverage can help make the case that one or two vendors families provide the foundation for the CD-ROM collection.

Three Benchmark Products

There are many excellent CD-ROMS on the market today. We recommend, however, that anyone considering a CD-ROM purchase examine the products which can give a point of reference against which to measure other CD-ROMS. We are using the term **benchmark product** to describe CD-ROMS that have characteristics which provide a frame of reference for evaluating other CD-ROMS. With several hundred CD-ROMS now on the market, it is impossible to profile more than a handful. We have provided an abbreviated list of CD-ROMS in Appendix A to this chapter that should be examined.

With that caveat, the three benchmark products are:

- Disclosure's **Laser Disclosure**(1)
- Information Access Co.'s General **Peridocals Index** on Info'Trac®
- Standard & Poor's Corporations On Disc. ®

Laser Disclosure

Disclosure, Inc. offers an image CD-ROM product which combines the power of electronic information retrieval and a photocopy of the original document.

Laser Disclosure puts on CD-ROMs a complete and current Securities & Exchange Commission document library.

The system provides immediate access to 10-Ks, 10-Qs, annual reports and proxies for more than 10,000 publicly-traded companies. It is one of the first commercial laser products that provides an electronic alternative to microform. It replaces the microfiche and hard copy versions of the documents, eliminates filing, and provides immediate access to a rich array of company data.

A user can locate and retrieve information about a specific company in a variety of ways. Enter all or part of the firm's name, and the system responds with a list of companies with that name. (Alternatively, the system accepts ticker symbols or unique Disclosure numbers.) Pick one and the system lists the reports, financial records, and proxies on the discs. The system specifies the disc on which the information resides--important because more than a hundred discs hold the document images. The high speed is a result of sound system design which keeps the index information on the system's hard disk, not on a CD-ROM.

Among the many features of the system are:

- Automatic updates to the systems index when a new disc is added to the collection
- Effortless integration of search, retrieval, and printing.
- · A fixed price for unlimited document copies.
- Comprehensive maintenance, support, and training.

In terms of search and retrieval, Laser Disclosure is much like many other CD-ROM products. However, the difference *is* apparent when the user displays a document

on the screen. Then the achievement of Disclosure is immediate and remarkable.

A high-resolution monitor shows an image of the original document, including pictures, charts, tables, and any other information which is a component of the source document. The user can read the document on the screen, flipping through its pages as easily as turning the pages in a magazine, or print the document on the laser printer integrated with the system.

Disclosure offers the product in three different configurations, ranging in price from about \$28,000 to \$90,000 per year. The least expensive system is an archival one for general reference applications; the highest cost option features continuous update discs--more than 80 per year-and an industrial-strength laser printer. Regardless of configuration, each pricing level includes:

- Data and updates, if applicable.
- All hardware and software.
- Turnkey installation.

Officials at Disclosure admit that the system's initial target market was the financial community, but many other markets have purchased the product as well. Take a close look at the Laser Disclosure product; it represents an innovative application of optical technology, particularly in its ability to display images. (See Appendix A to this chapter for contact information.)

General Periodicals Index (GPI) on InfoTrac

IAC'S GPI is a monthly CD-ROM product. It comes in two different versions: one targeted to the public library

and the other to the academic library. **GPI** is one of the largest, most comprehensive, cross-disciplinary databases available.

The Academic Library Edition is an index to about 1,100 general interest and scholarly publications. The subject areas cover social sciences, general sciences, humanities, business, management, economics and current affairs.

The Public Library Edition provides indexing of about 1,100 popular magazines and journals. The index covers current events, consumer information, arts and entertainment, business, management, and economics. It includes 11 titles indexed in the company's Magazine Index.@

Both versions include the most current four years of data and the most current 60 days of indexing of the *New* **York Times** and the **Wall Street** Journal.

One important and unique feature of the product is that each record provides location codes to the full text of all titles in IAC's microfilm Business Collection@ system and selected titles in the Magazine Collection.

Equipment provided by IAC features such touches as color-coded function keys, a thesaurus, nearly effortless printing of citations, and a hardware package that is attractive and secure.

IAC sells the complete system--hardware, software, databases, and maintenance. The GPI database can be used on the same workstation with other InfoTrac CD-ROMS, including the National Newspaper Index@ and Health Index.

The price of the a 12-month subscription, including all hardware and the CD-ROMS, is \$7,500. Four workstations bring the price per year to \$13,000.

TAC has brought many number of customer-oriented features together in one package. It bears close study and consideration and can be used as a yardstick to measure other fully-packaged systems. (See Appendix A to this chapter for contact information.)

Standard & Poor's Corporations OnDisc

This product was produced jointly by Dialog Information Services and S&P. Both companies are to be commended for the blending of expertise and cooperation. Most information professionals are familiar with the directory and factual content of the S&P corporate publications. The CD-ROM version allows access to a wide range of access to company, executive, directory, and financial data. The most significant achievements of the product are:

- The speed with which it operates. It is one of the fastest, most responsive CD-KOM products on the market today.
- The interface is usable by beginners and experienced searchers alike and allows the power of Dialog commands to be applied to the data set on the CD-ROM.

The product is updated every two months and also provides a connection to Dialog's online timesharing service for updating the CD-ROM. Included in the subscription price are software and a password to allow direct,

real-time access to S&P's Daily News Online. The advantages of this approach are that the background investigation can be conducted on the CD-ROM and the search strategy refined. The online link can then be used to retrieve the most current information.

S&P plans to introduce a network option in 1989 which will make use of the Meridian and Optinet systems which are described briefly in *Network Myths and Realities*.

This product is most appropriate for libraries with a need for corporate information. The online link will probably be most useful in special libraries, but it is a feature which will become increasingly common in other CD-ROM products.

The principal applications of the **S&P** product are for company information, merger and acquisition research, and competitive intelligence.

Other notable features of the product are:

- The product has a high degree of visibility among end users and information professionals, which positions it to function as a building block in a CD-ROM collection.
- The company provides a toll-free hotline 24 hours a day for customers, which is to our knowledge a unique feature of this product.
- A two-level interface using a menu for the new user or the command driven Dialog interface for the experienced online searcher. The two-tier approach will become a requirement for CD-ROMS which will be used by both end users and experienced searchers.

The automated link to the online timesharing service. It neatly sidesteps criticisms aimed at some CD-ROM products' slow updating cycles.

An annual subscription to the product is \$4,250 without a CD-ROM drive and \$4,850 with a Hitachi drive.

Although there are numerous CD-ROMS aimed at the business market, the S&P-Dialog offering provides a useful point of departure for evaluating other real-time CD-ROM products. It incorporates a number of features which will begin to appear on other publishers' CD-ROMS in the months ahead. S&P implemented several features of importance to corporate customers before other vendors did. (See Appendix A to this chapter for contact information.)

Notes

¹ Stephen E. Arnold, "CD-ROM Prices: Bound Down," Laserdisk Professional, March 1989, pp. 6-10.

The prices of CD-ROM products are from two separate listings of commercial products. The list from CD-ROM **Review** contained more than 250 products. We analyzed the products for which a price was given. The Meridian list accompanies the sales promotion material of Meridian Data (Capitola, California); it provided prices for more than 12.5 products. There is a 50 percent overlap in the lists. Not surprisingly, the curves are virtually identical.

Appendix A: CD-ROM Product Sampler

Prices accurate as of the first quarter 1989. Since CD-ROM prices are subject to change, please check with vendor for current pricing and product availability information.

Bowker Electronic Publishing

245 West **17th** Street New York, NY 10011 212-337-6989

Books in Print with Book Reviews Plus, \$1,395 60,000 reviews and Books in Print Plus

Books Out of Print Plus, \$395 Out-of-print book listing

Books in Print Plus, \$995 The electronic version of the standard print reference

Ulrich's Plus, \$395 Magazine listing

Chadwyck-Healey Inc

Electronic Publishing Div 1101 King Street, Suite 180 Alexandria, VA 22314 800-752-0515 Supermap, \$990

1980 U.S. census to the county level

Dialog Information Services, Inc.

3460 Hillview Ave Palo Alto, CA 94304 800-334-2564

> Agribusiness USA, \$2,000 per year with updates Agriculture database

Canadian Business and Current Affairs, \$1,450 Corporate filings, 300 magazines indexed from 1981-present

ERIC, \$1,650 per year with updates RIE and CIJE 1966-present on two discs

ERIC, \$950 per year with updates Current year

Medline, \$950 per year with updates Scientific writings, one-year backfile; additional years available

Medline, \$1,450 per year with updates, 1986-1987 (2 discs) Medline, \$2,450 per year with updates, 1984-I 988 (5 discs) NTIS. \$3.950 per year with updates

National Technical Information Service full database, 1980present

NTIS,, \$2,750 per year with updates National Technical Information Service's current file, 1984present

Disclosure Inc

5161 River Road Bethesda, MD 20816 800-843-7747

Laser Disclosure, \$40,000

SEC filings, annual reports, IO-K forms, proxies for 6,000 traded companies

Compact Disclosure, \$5,000 per year with updates; 10-Ks of 10,000 publicly traded U.S. companies

Not-For-Profit Laser Disclosure, \$27,500 Business reports for non-profit organizations

Wall Street Laser Disclosure, \$97,000

SEC filings, annual reports structured for corporate and *institutional financial applications*

EBSCO

P.O. Box 13787 Torrance, CA 90503 213-530-7533

Comprehensive Medline, \$2,400 per year with updates *A two-disc set with 2,000 titles*

Core Medline, \$1,400 per year with updates

522 titles

The Serials Directory, \$495 per year with options List of currently published serials

Grolier Electronic Publishing Inc. Sherman Turnpike Danbury, CT 06816 800-356-5590

The New Electronic Academic American Encyclopedia \$395

Full-text of the Academic American Encyclopedia

Information Access Co.

362 Lakeside Drive Foster City, CA 94404 415-378-5000

General Periodical Index on InfoTrac II, \$7,500 per year with monthly updates; includes workstation

1,700 titles available in two editions, both include two major newspapers

Library of Congress

Washington, DC 20541 202-287-I 309

CD-Marc Subject \$300 Marc Subject Authority files

Lotus Development Corporation

1 Cambridge Center Cambridge, MA 02142 617-577-8500

CD/Banking, \$19,500 per year

Commercial, bank holdings and savings institutions; discs may be purchased separately

CD/Corporate,\$13,000-\$18,500 per year Information about more than 12,000 publicly-traded companies

CD/International, \$19,500 per year Financial data about 4,000 international companies CD/Investment, \$11 ,OOO-\$30,000 per year Daily stock price history, Value Line stock information, formerly One Source

CD/Newsline, \$2,000 per year and up Dow Jones News/Retrieval Service plus corporate directory information

CD/Private Plus, \$7,000 per year Financial and directory data about private firms and 8,500 public companies

Micromedex Inc

6600 Bannock Street, Suite 350 Denver, CO 80204 303-623-8600

> Drugdex, prices not available Drug information and evaluations

Emergindex, prices not available Toxicology information

Identidex, prices not available Tablet and capsule identification

Poisindex, prices not available Abstracts of information about *poisons and antidotes*

Microsoft Corporation

16011 NE 36th Way Redmond, WA 98073-9717 206-882-8080

> Microsoft Bookshelf, \$295 Reference tools for

Programmer's Library. \$595

Manuals for Microsoft programming languages, including some source code

OCLC

6565 Frantz Road Dublin, OH 43017-0702 614-764-6000 Agriculture Series, prices not available Agricola, CRIS and AgMil databases

CIJE, \$350

Current Index to Journals in Education, 1969-8 1

Education Series, prices not available *ERIC and EMIL*

Science and Technology, prices not available NTIS and science and technology materials in libraries

PC-SIG Inc

1030-D East Duane Ave Sunnyvale, CA 94086 408-730-9291

PC-SIG Library on CD-ROM, about \$500 Shareware software; updated every 6 months

Science Helper (K-8), \$195

About 7,000 science and math lessons for teachers

SilverPlatter

One Newton Executive Park Newton Lower Falls, MA 02162-I 449 617-969-2332

> A-V Online, \$795 per year Audio/visual materials

Agricola, \$950 per year with updates Agricultural abstracts

Business Software Database Descriptions and reviews of 72,000 software packages for business applications.

Cancer-CD, \$1,750 per year with updates

Cancer information, current year five year backfile

Chembank, \$1,350 per year with updates RTECS. Ohm Tads, Chris data

CIRR, \$1,250

Corporate and industrial research reports

Compu-Info, \$1,250 per year Computer component directory

ERIC, \$650 per year with quarterly updates CIJE and RIE information

GPO Monthly Catalog, \$950 per year with bimonthly updates List of Government Printing Office documents

LISA, \$995

Abstracts in librarianship and information science

Medline, \$950 for the current year's data to \$3,500 for five years' backfile on disc

Medical abstracts

NTIS, \$2,250 per year with updates

National Technical Information Service citations

OSH-ROM, \$900 per year with updates Niosh, Hseline and Cisdoc citations

Peterson's College Database, \$595 College and university directory

PsycLIT, \$3,995 per year with updates Psychology and behavioral science citations

Sociofile, \$1,950 per year with updates Sociology abstracts

Software-CD, \$1,250 per year with updates Directory of business software, including technical profile, software descriptions and vendor information

Standard and Poor's

25 Broadway New York, NY 10004 800-233-2310

Standard & Poor's Corporations OnDisc, \$4,250 per year with bimonthly updates; includes biographical information on executives in spite of the disc's name *Financial and* directory of companies

Compustat PC Plus, \$12,000-\$45,000 per year Company statistics

University Microfilms Inc

300 North Zeeb Road Ann Arbor, MI 48106 313-761-4700

[Note: The vendor did not return our telephone calls for 7990 prices. Those interested in these products need to verify prices which may vary significantly from those provided in this listing.]

ABI/INFORM Ondisc, approximately \$5,000 per year for the abstract disc with bimonthly updates. An "electronic microfilm" image product is available tor about \$20,000 per year plus 10 cents per printed page.

150 word abstracts of the business and management articles in more than 750 worldwide publications

Business Dateline Ondisc, \$2.950 Selected articles from 150 regional publications.

Dissertation Abstracts Ondisc, \$1,695

Abstract written by doctoral students from most major universities; all disciplines

Newspaper Abstracts Ondisc, \$2,950 Index with brief annotations of articles in a dozen daily newspapers

Periodical Abstracts **Ondisc**, approximately \$2,000. An "electronic microfilm" version of the product is available for about \$20,000 per year plus 10 cents per printed page. *Index with brief annotations of articles in 300 general interest serials*.

H.W. Wilson Co

950 University Ave Bronx, NY 10452 212-588-8400

Applied Science & Technology Index, \$1,495/year Disc version of print reference book

Art Index, \$1,495 per year

Disc version of print reference book

Biography Index, **\$1,095** per year Disc version of print reference book

Business Periodicals Index, **\$1,495** per year *Disc version of print reference book*

Cumulative Books Index, \$1,295 per year Disc version of print reference book

Education Index. \$1,295 per year Disc version of print reference book

General Science Index, \$1,295 per year Disc version of print reference book

Humanities Index, \$1,295 per year *Disc* version of print reference book

Index to Legal Periodicals, \$1,495 per year Disc version of print reference book

Library Literature, **\$1,095** per year Disc version of print reference book

Modern Language Association Index, \$1,495 per year Disc version of print reference book

Readers' Guide to Periodical Literature, \$1 095 per year Disc version of print reference book

Social Sciences Index, Disc version of print reference book, \$1,295 per year Disc version of print reference book

Ziff Communications

1 Park Ave

New York, NY 10016

212-503-3500

Computer Library, \$695 per year

Full text of Ziff's PC publications supplemented with abstracted and full-text newsletter and magazine articles.