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CD ROM and access to information in academic libraries

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Abstract
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IMPLICATIONS OF CD-ROM TECHNOLOGY ON THE USE OF AND ACCESS TO INFORMATION BY TERTIARY STUDENTS

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ABSTRACT

CD-ROM databases have been hailed as a means of avoiding the problems inherent in budgeting for online services, and hence also the need to charge for searching. However, some libraries are already considering charging for their use. This is a retrograde step. The University of Wollongong library has purchased a number of CD-ROM databases which have been enthusiastically received by both students and academic staff. At present, we do not charge for this service. Initial indications are that the introduction of CD-ROM databases has meant a slump in demand for online searches. Clearly, CD-ROM and online services could be complementary, and it is likely that once CD-ROM databases are no longer considered a novelty, online services will regain, and possibly increase, their standing with the academic library community. This paper concludes that CD-ROMs have the potential to greatly enhance students' access to information, firstly, through providing free access to electronic database sources, secondly, by making students more aware of the potential of online services for up to the minute information, and thirdly, for improving document delivery.

CD-ROM AND ACCESS TO INFORMATION IN ACADEMIC LIBRARIES

Carole A. Alcock

Introduction: Issues impinging on access

CD-ROM databases have been enthusiastically received by both staff and student users in academic libraries. Librarians have viewed them as a means of providing the equivalent of an online search facility to all their clientele, independent of their ability to pay. Certainly, they have provided this. But to what extent have they improved access to information for academic users? In addressing this issue, this paper will discuss some of the differences between providing CD-ROM and online services, looking initially at budgetary issues and revisiting the fee-vs-free debate which predates the advent of CD-ROMs, then noting the complimentary nature of the products provided. The problems with the technology will also be considered: the students' familiarity with computer technology, level of training, knowledge of the particular database, and familiarity with the vagaries of searching a variety of database sources where standards are still to be established, will all undoubtedly affect the success of end-user searching. Thirdly, the implications for the academic library collection will be explored. The dangers of canceling hardcopy subscriptions to indexing and abstracting services while horrendous licensing agreement for some CD-ROMs are still in place, are only too obvious. Increased pressure on the existing collections and a demand for more titles to be made available, have already become evident. Full-text databases are appearing which, while offering a means of extending access to journal literature, are generally too expensive for most established libraries to consider at present. While CD-ROM has the potential to enhance access to information, academic libraries need to consider carefully whether they provide the most effective use of library funds, or whether, in a future more competitive market, online services present a superior option.

CD-ROM vs Online Searching: Fee vs Free?

In an Australian survey conducted in 1989, the verdict on CD-ROMs was summed up in a quote from one of the respondents: "For databases used infrequently, online searching will continue to be more cost effective, especially, with systems such as Dialog and Orbit, where there is no subscription charge."[1] Prices for CD-ROMs are falling. In the U.S., the medium price in 1987 was US$1300 but had decreased to $1000 by the end of 1989.[2] But many of the most popular discs are still very expensive.The variety of CD-ROMs available make this product particularly appealing to reference librarians. Of the more than 600 CD-ROM titles now commercially available, a large percentage are reference works.[3] However, given the high price of most discs, it is doubtful that even the most heavily used database will prove cost effective, at least initially. In a 1987 article, Dennis Warren pointed out that cost justification for the purchase of CD-ROM databases is unlikely to be convincing on its own. (The argument which he suggests is most convincing is that of improvements to service.) He gives the example of ERIC, their most used online database. Annual expenditure for ERIC searches did not amount to the cost of the CD-ROM product, excluding set-up costs.[4] Nevertheless, market studies in both the U.S. and Europe predict a strong future for these products. Nelson concurs, saying that "there is an optical disc in everyone's future" with "bigger and better products designed specifically for the library market".[5] Comparing the CD-ROM and online media, Nelson states that "CD-ROMs edge out online as per search charges decline with each use of the optical database but increase with each search of the online."[6] In most

libraries in Australia this would not be an argument for providing CD-ROMs, since online services have rarely been freely available. Hence from a strictly budgetary point of view, a comparison cannot be made.

Librarians faced with the quandary of continuing to fund CD-ROM services are again debating whether to charge fees.[7] While most libraries are staunchly opposed to charging for CD-ROM services given that they were originally proposed as a means of avoiding fees for online searches, in some cases it has been seen as the only way to maintain a popular service. The University of California at Berkeley is one example. In order to maintain their Infotrac service, they charged a levy of eight cents per minute for searching and twelve cents per minute for printing. It was doubtful that this would result in full cost recovery.[8]

One of the reasons CD-ROM appeared so attractive to librarians was that it offered a fixed annual fee, and could be budgeted for more easily than could online systems. Some database providers (e.g.:BRS After Dark and our own Australis) are now moving to offer an annual fixed fee. If all database vendors move in this direction, and as CD-ROM subscriptions increasingly make inroads into their market they may well do so, it could prove cheaper for libraries to provide free online searches for its patrons.[9] Some have argued strongly for this, pointing to the advantages of both currency and range of databases provided through online services.[10] In a discussion of the new CD-Plus MEDLINE, a product which shares the power and capabilities of online, Martin Kesselman makes a further point regarding the fees issue. Some libraries using this product are charging for searches just as they would for the online equivalent. He asks how they can justify charging for online searching if they do not charge for these services. Kesselman notes the philosophical dilemma here, drawing attention to the fact that libraries have traditionally not charged for items purchased for the collection. He suggests that as online services begin to look at fixed cost delivery in the more competitive "second generation" CD-ROM marketplace, the argument for charging may become a moot point.[11] If we are truly concerned with improving our students' access to information, charging should not be an option.

Barbara Smith, a library analyst, believes that CD-ROM will not supplant online searching. "Online will maintain its advantage of currency and in some instances will be more cost effective, where the database is used infrequently and the CD-ROM version is expensive."[12] Many libraries will purchase CD-ROM products regardless of the fact that they would save money by searching online databases. In a 1988 article in the Library Journal, Tina Roose pointed out that it would take a large number of searches before the cost of an annual subscription is justified. She believes that "for many applications CD-ROM doesn't make sense. It's more expensive to begin than online. You get less for your money. It's slower."[13] Nevertheless, she does consider CD-ROM to be a wonderful archival storage medium, and suggests that some multi-volume reference sets may eventually even be cheaper in this format than in their print equivalent.

Each library will undoubtedly choose whether to adopt CD-ROM technologies according to its own needs and priorities. It is interesting (encouraging for some of us) however, that the fee-for-use issue may be re-emerging in Academic Libraries. The debate almost seems to have come full circle. CD-ROM databases expand academic users access to sources. A limited access to free online services would extend it further.

End User Searching: Ability to Use the Technology: Training implications

As one author has commented, "CD-ROM opens up the world of computerised literature searching to a new audience - the student library user."[14] Indeed, CD-ROMs were initially viewed as an effective training tool for introducing endusers to online searching. Their use in academic libraries according to Martin Kesselman was "just a stop-gap measure to bringing online searching into the hands of endusers", although he later revised this view. They also, he noted, have great public relations impact.[15] These are not the benefits most librarians would emphasize today. although they are clearly a plus. Training students to use the discs themselves is, however, of considerable concern and presents special problems. Perhaps chief among these is that of differing retrieval software.

A study of CD-ROM products conducted in late 1989 found that as many as 195 different retrieval software packages were in use. In 1987 the number was 50. Of those 195, 80 percent were used on only one or two products. However, 21 software programs are used on about 50 percent of CD-ROM products. This presents a problem for librarians attempting to design training programmes which will effectively cover all the variations. Hardware, too, can vary , and this adds to the difficulty.[16] For the nineteen discs currently in use at the University of Wollongong (including those used only in Technical Services) the library has eleven different software packages. Another three discs are being reviewed, none of which have search software in common with those we already hold. One of these has different hardware specifications to our present systems. Any future purchase clearly has implications for our training programs.

That training sessions are necessary is obvious. In an article on planning for CD-ROM use, Steven Zink draws attention to this need pointing out that requests for assistance can cause problems especially during busy times at the reference desk. Even when the disks are reasonably simple to use, students unfamiliar with the technology will undoubtedly require some initial instruction or advice (if only to avoid minor disasters like students putting CD-ROM discs into floppy disc drives!). A system of training sessions will need to be set up, either by appointment on an individual basis, or in small groups. As Zink notes, such instruction could alleviate the problem of searchers using the products to search for material beyond their scope.[17]

Whether training sessions will achieve their aims is viewed with pessimism by some. Some librarians have expressed doubt that CD-ROMs will ever be a labour saving devices. Users will always demand assistance, most not taking advantage of training classes. "As always, librarians are called upon by students and scholars for help in negotiating this plethora of information sources, and CD-ROMs require a renewed commitment on the part of reference librarians to their role as instructor and consultant."[18] Nevertheless, it is important that training sessions are made available. When deciding what training is appropriate however, it is essential that the needs of the students are established.

With this as one of its objectives, a survey conducted at Oakland University, Michigan investigated how students were responding to CD-ROM. The aims of the survey were to evaluate the CD-ROMs currently being used; to assist with decisions regarding future purchases; and to modify the kinds of assistance available at that time.[19] They found that students have a quite different approach to that of librarians when using these databases: The student's

approach is less planned, often not using thesauri or other available search aides. For many students, a "few good articles" were sufficient to satisfy their needs. However, for those doing more substantial research, such as for a thesis or dissertation, a more thorough, "librarian-type" search is required.[20] While such surveys are of considerable assistance in targeting groups requiring more specialized instruction, their results also have implications for the collection, whether this be in terms of which journals are provided or which CD-ROM subscriptions are retained.

Implications for the Collection

Many factors have to be considered when selecting appropriate CD-ROMs for addition to the collection. User needs, whether they compliment or supplement existing material, availability of hardware, and, of course, cost effectiveness are just a few. Once a decision is made, possibly backed by appropriate reviews, or word of mouth communications from other users, a further problem arises: several versions of the same database may be available, adding to our list of issues to be considered before purchases can be approved: retrieval software and functions, update frequency, associated products and services, vendor reliability and subscription price comparisons.[21] Given the training problems inherent in maintaining the multiplicity of software and hardware configurations already alluded to above, the first of these should undoubtedly be given prominence in any future CD-ROM purchases.

One of the problems with CD-ROMs, especially given the high demand which has been encountered once people are aware of their existence, is that only one person can use a disk on a stand alone system at any given time. The establishment of Local Area Networks (LANs) on University campuses has the potential to extend access to CD-ROM databases both within the library and to faculty. Networking is already available with some systems, notably MultiPlatter from SilverPlatter Information, Inc. Carol Tenopir has drawn attention to a number of options including Meridian Data's CD NET, which allows networking between two and 75 workstations and will work with nearly 100 CD-ROM databases, including some of the most popular.[22] In spite of the costliness of CD-ROM subscriptions, networking rights are not usually included. A site licence is required and an extra charge levied. This seems a little unfair given the already large subscription fee. When networking is only to provide greater ease of access within the institution holding the subscription, it is to be hoped vendors will reconsider such levies as the industry becomes more competitive. Apart from cost, that they only allow one user per disc is by far the greatest drawback in introducing CD-ROMs. Although LANs offer some hope in this regard, at present, more readers can simultaneously use the print version.[23] Queuing for CD-ROMs could well become a problem and time limits may need to be set. Columbia has been reluctant to introduce limits to searching time or a booking schedule. At the University of Wollongong, it is possible to book specific discs and time slots, and a record of use is kept through sign-in and out requirements.

Once CD-ROM subscriptions to indexing and abstracting services are taken up, the decision to cancel hardcopy versions is an obvious option where funds are limited. Silverman questions the way in which libraries are funding CD-ROM purchases. While many libraries use special funds or grants for the initial subscriptions, funding renewals may have to be achieved through cuts to other areas, allowing CD-ROM subscriptions to merge into the serials budget. The expense is justified, says Silverman, "through an argument based on good programs."[24] Staff, however, are often reluctant to cut hardcopy subscriptions. Among the arguments against canceling print subscriptions are: Print subscriptions allow you to retain all items purchased: This is not necessarily the case with CD-ROMs, their licensing agreements often requiring

the return of discs when subscriptions cease. Licensing is an issue which, Nancy Nelson assures us, will not go away. Why should we pay large sums of money, thousands of dollars annually in most cases, for data that we merely lease for the term of the subscription?[25] Not to mention the legal ceding of responsibility requirements that have appeared in some agreements! Print subscriptions allow multi-user access. Online access to current information is also important before cancellation of print subscriptions is agreed upon. One possibility in funding CD-ROM subscriptions is to appeal to academic departments to fund databases in their fields.[26]

As students' awareness of and ability to use CD-ROMs increases, the demands that they make on the library collection will undoubtedly become greater. Joseph Michalak reports that libraries have already become aware of increased pressure on serials collections, inter-library loan services and microfiche collections, all related to CD-ROM availability.[27] While CD-ROMs have extended students' knowledge of what is available, actual access to that information may be restricted by the limits of the collection and eligibility for inter-library loans. Demands to expand collections can certainly be anticipated.

Document Delivery

As Michalak has observed, the introduction of technical innovations like CD-ROM has raised patron expectations. In consequence, libraries must now find solutions to the problem of document delivery which will satisfy an increasing demand.[28] It would be surprising if some effect was not noticed in the provision of inter-library loans. However, where the impact of CD-ROM on inter-library loans in Australian libraries is concerned, Jenny Stocks concluded from her study that it is "too difficult to predict distinct trends at this stage."[29] Full-text CD-ROMs are being proposed as another solution, albeit an expensive one.

The UMI full-text CD-ROM product, Business Periodicals Ondisc was launched in January 1989.[30] The system used by UMI has been described as acting like "electronic microfilm" because of the facsimile images it produces.[31] This system was demonstrated in Sydney and Melbourne earlier this year. It provides the full-text of over 300 of the most popular journals indexed on ABI Inform and operates in conjunction with this CD-ROM database. The system demonstrated consisted of around 160 discs, with holdings dating back to 1987. It will increase to more than 200 discs by the end of the year, although improvements in storage capacity are anticipated, and discs and software would then be completely replaced. At present, manual insertion of the appropriate disc is required after a search on ABI Inform indicates where the item is to be found. A juke box prototype is currently being trialed, and networking appears to be a real possibility, although at an extra charge on top of an already expensive system: A$25,000 per annum ($30,000 with ABI Inform) plus hardware costs of A$30,000. On top of this, there is a charge of 12 cents levy per page printed. The system is attached to a Laser printer (included in the hardware), and produces exact copies of the journal articles, much like a very good photocopy. The system is impressive, but even if a charge were levied above the mandatory charge, it is doubtful that most academic libraries could afford this purchase without an injection of funds from an outside source: perhaps the department most likely to benefit from its introduction. UMI is not proposing to convert all the companies full-text holdings onto CD-ROM. The decision is an economic on: the cost of converting one year alone of the companies periodical titles is estimated to be in excess of US$9 million. According to UMI's marketing manager, Carol Bamford, the product

would have to be priced above the reach of most libraries for the company just to break even.[32]

Another full-text storage system utilizing CD-ROM is the ADONIS project, which is testing a method whereby publishers can gain copyright revenue whenever copies of journal articles are made. The publishers felt that libraries were canceling subscriptions because they could easily obtain photocopies on inter-library loan. The discs store over 200 biomedical journals and cover the period 1987 to 1988. A number of centres have been established world wide including the National Library in Australia. The discs are used to fulfil requests for articles that appear in the included journals.[33]

CD-ROMs were viewed with some excitement when they first appeared on the market. They offered the promise of an improved storage medium and access facility for bulky indexing publications. They also promised a means of storing back issues of full-text serials preferable to the microfilm back files or broken runs of hardcopy serials in existing collections. However, CD-ROMs have been slower to move into the range of document delivery services than originally anticipated. Some of the reasons for this are high costs and lack of standards. However, Susan Martin, until recently the Director of the U.S. National Commission on Libraries and Information Science, suggests that users are not yet ready to move exclusively to electronic data.[34]

Conclusion: The Potential of CD-ROM in Academic Libraries

CD-ROMs have been greeted with considerable enthusiasm by academic users. Comments made by a number of authors reflect that this impression is not restricted to Australian libraries. Silverman remarks that "once CD-ROM products are introduced in the library, patrons cannot bear the thought of living without them."[35] Juhl and Lowry comment that "while CD-ROMs have caused some sweeping changes in services and resources at Columbia, we are in the middle of an ongoing evolution, not a revolution. And the only revolt I foresee is that of the readers if we should try to take the CD-ROMs away."[36] Certainly, CD-ROMs have been greeted with enthusiasm by academic library users providing wonderful PR, something academic libraries can find difficult to achieve. However they do present difficulties, among them the funding and training issues alluded to above. As well, they have implications regarding just what our collections will be like in years to come. Should we opt for the electronic versions of serial publications instead of the hardcopy? This is a question many academic librarians will be confronting in the near future, and not only for indexing and abstracting services. Clearly, CD-ROMs have the potential to greatly enhance students' access to information, first, through providing free access to electronic database sources, second, by making them more aware of the potential of online services for up to the minute information, and third, for improving document delivery. Their potential is inhibited by current licensing agreements which deny ownership to the purchasing library and require return of discs once subscriptions lapse. This is an issue which must be resolved.

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