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December 1997

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Desmarais, Norman and Luther, Judy, "The Evolution from Physical to Virtual Library " (1997). *Library Faculty and Staff papers*. 24.

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The Evolution from Physical to Virtual Library

by Norman Desmarais and Judy Luther

Through the years, a library was defined as a collection of written materials containing information. Duties associated with the physical library include: identifying and acquiring the appropriate materials, organizing them in a logical way for retrieval, and managing as well as preserving circulating collections. These are considered technical services functions focused on the collection while public services functions focus on identifying and meeting the needs of the users. In the traditional view of libraries, the focus is on the collections and ownership of materials. But what happens when a library can no longer afford to collect or own materials? It must shift its focus more toward services and providing means to access information owned by others.

With the advent of electronic networking, users can connect to remote databases which effectively function much like the traditional library, offering information for retrieval and sometimes delivering it directly to end users. This raises the question: "What's happening to the collections that are identified as part of the library and how does that affect the role of librarians?"

Although we could point to the current wave of technology as the source of these changes, the reality is that functions related to collections have been handled increasingly as contracted services for economic reasons for the last 25 years. Outsourcing is not a new phenomenon. It has been part of library operations under different forms and names affecting all aspects related to the collection.

ACQUISITIONS

To meet high demand, many libraries leased multiple copies of popular books to circulate to their patrons rather than buy them. This was appropriate particularly for ephemeral items such as best selling fiction. With limited personnel and budget constraints, librarians had to find a way to supplement dwindling staff. Faced with gaps in subject expertise and staff who had less time to keep up with literature and reviews in their fields, librarians began to rely on approval plans. They set parameters for their book vendors to follow in selecting the materials to ship to them. Others preferred not to get the books shipped automatically and received paper slips or notices to bring titles to their attention so they could make the selections themselves.

Increasingly, librarians are outsourcing their collections. They lease information resources, subscribe to remote databases and information sources, and use the Internet to obtain and provide assistance. Through locally formed networks and statewide consortia, libraries are replacing their printed indexes with jointly purchased online tapes in order to share costs and increase access for their users. No longer is owning the item in-house necessarily the best way to provide access to information. The role of the librarian is gradually evolving into that of an information locator.

CATALOGING

Many libraries have opted to transfer the processing of materials to vendors who can ship the books with pockets, cards, and labels, barcodes and theft detection strips so they are ready to go on the shelves as they are unpacked.

Staff reductions and tight budgets have prompted librarians to consider obtaining cataloging from outside sources. Libraries formed bibliographic utilities like OCLC, RLIN, and WLN to increase their efficiency and effectiveness by sharing cataloging. Libraries with approval plans can even get their bibliographic utilities to supply their vendors with bibliographic records for shipping with the materials. Holdings symbols get updated automatically and the libraries benefit from the minimal handling of materials.

These bibliographic utilities have also become indispensable for interlibrary loan. They serve as national union catalogs and permit quick and easy identification of which libraries own particular items. Electronic communication between the libraries facilitates sharing of collections.

The desire to provide access to entire library collections through an online catalog has prompted many librarians to contract for their retrospective conversion efforts, which are more cost effectively handled by staff devoted solely to this project. Some have also turned to outside contractors for the cataloging of special materials and for authority control.

THE BORROWED COLLECTION (OR ACCESS VS. OWNERSHIP)

With exponential increases in the amount of information available and limitations in the materials budgets, no library -- regardless of size -- can own everything. It is necessary to rely on other sources to obtain material. Librarians began utilizing interlibrary loan long ago to obtain access to specialized or less frequently used material.

New technologies let users identify pertinent citations

faster and easier than ever before, placing even greater demands on a library's collections. Librarians have responded by relying on document delivery services to obtain some of this material. Document delivery often may cost less than purchasing an item or obtaining it via interlibrary loan. This is particularly true for science journals. At the 1995 Charleston Conference, Chuck Hamaker presented the results of his study done at Louisiana State University. He found that in only two cases did the annual document delivery charges cost them more than the corresponding subscription fees.

THE SELF SERVICE LIBRARY?

Many electronic indexes can connect easily to document delivery services, letting users order the desired items directly. It seems that librarians are shifting more of the traditional library functions to outside vendors and to the patrons, as if they are moving to self-service libraries.

The banking industry pioneered efforts at self-service with its ATM machines that let clients perform their own transactions that are repetitive, time-consuming, and costly for bank management. Many libraries have adopted a similar model letting patrons charge materials out to themselves, place requests for interlibrary loans, or place orders for desired articles. Some institutions may have even begun experimenting with debit cards that allot patrons a predetermined dollar amount to spend on outside services.

In the Information Age, we would expect librarians to become more important in managing and locating the information that people need. However, in the self-service library, librarians become less visible -- and consequently seem less important. Library patrons can locate information more easily in an electronic environment; but studies have shown that while they are usually content with retrieving almost anything, they often do not search the most appropriate material or even search it effectively.

Having the ability to obtain information directly from a supplier, computer users can by-pass the library entirely. The virtual library then becomes a gateway for information rather than a repository for that information. The information provider or publisher may then assume the library's role of repository. But can we expect the information provider or publisher to perform this role indefinitely? Tax laws (Thor Power Tool decision) require publishers to pay tax on their inventory. This results in shorter print runs and in materials going out of print within a relatively short period. In the shift to electronic publishing, tax legislation may be modified to include electronic storage.

This would result in the same situation as currently prevails for books. Publishers will keep available only those items which generate revenue.

IMPACT OF THE INTERNET

We are seeing many publishers establishing their presence on the Internet. While the Internet used to be an exclusively academic enterprise providing "free" resources to scholars and researchers, it is shifting to a commercial enterprise. More and more companies and businesses are realizing that they have to get on the Internet to maintain business because their competition is already there.

Outside of the college and university environment, service providers offer Internet access much the way they do for CompuServe, America Online, Delphi, or Prodigy which also provide Internet access. They have a fee schedule for their services and monthly access charges for those who don't have access through an educational institution.

As government funding that has supported the Internet disappears, commercial organizations will take over the "administration" of the Internet from the non-profit institutions. Publishers and information providers who currently offer some of their assets on the Internet will probably charge increasingly higher fees. Right now, they are studying usage patterns and experimenting with pricing models. This will probably result in a variety of pricing models that may go into effect soon.

A growing number of magazine titles is being transferred to the Internet. While some titles are available only in electronic format, the majority continue to publish in both paper and electronic formats. Eventually, many will follow the lead of *Omni* and cease publication in paper and appear only in electronic form.

The increased use of document delivery is making publishers realize that they can use copyright royalties as a significant source of revenue to bolster sagging subscription income. As libraries cancel subscriptions, publishers need to find a broader subscription base by going directly to the end-user. However, many library subscriptions result from end-user requests which shift the costs to the libraries.

Libraries that adopt the pay-per-use model of document delivery provide the information their patrons need but have nothing for the next patron who may want the same item. They have to buy it again. If publishers depend entirely on a pay-per-use

model, they will need to recoup their costs on a smaller number of articles which will probably drive up document delivery costs. The laws of supply and demand will regulate the price of individual articles; and copyright owners can be expected to charge whatever the market will bear. It's conceivable that a single article may eventually cost more than the current price of an entire issue of a journal.

THE PRESERVATION QUESTION

Libraries have performed the function of archiving published material. They have insured that a permanent record of a publication exists. If one library doesn't have an item, it can usually obtain it from another library. In an electronic environment, are we shifting that archiving responsibility to the publisher or information provider? Judging by the rapidity that materials currently go out of stock or out of print and become unavailable, is it reasonable to assume that publishers and information providers will maintain and preserve this data for future use?

Some libraries may contract with publishers to store copies on their computers. However, many may determine that storage costs, whether for print or electronic formats, are not cost effective and remove those materials from the collection. While electronic storage makes it easier to distribute information, copyright owners may restrict this practice through licensing arrangements, fee structures, watermarks, or encryption techniques that prevent or prohibit wide dissemination.

The economics that drive the shift to electronic format will also sort out the access question. In a free enterprise market, the price determines the volume sold to the target market. When publications become too expensive for their market, alternative sources will develop. This might result in the library becoming a repository for books or an information source for the information underprivileged -- those who don't have the necessary hardware to access information electronically.