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# The Changing Library Environment

MURRAY S. MARTIN

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## ABSTRACT

IN SIMPLER TIMES, libraries operated in a relatively closed environment. Apart from book dealers and the local administration, few other participants impinged on library operations. Now libraries must operate within an environment with many players. These include systems vendors, bibliographic utilities, a wide range of suppliers, and a whole series of support agencies, some of which are part of the institutional background while others include consortia, vendors, maintenance suppliers, and grant agencies. Not least among these new influences are the various electronic services, which have raised high expectations on the part of library users. In order to maintain their programs, libraries must adapt to these changes even with shrinking budgets and more demands on funds.

## INTRODUCTION

When it was simply a matter of purchasing materials to meet the needs of users, libraries were faced with relatively simple choices, even if their budgets were inadequate to meet those needs. The goal was to purchase, process, and organize materials in a way that made them accessible to users. As a consequence, libraries developed a particular style of organization, which separated the various processing activities from those which had to do with user services, such as circulation and reference. This made for relatively simple budgeting and required few decisions about alternatives. There were always problems with expanding building needs, but, though

Murray S. Martin, Murray Martin Associates, 56 South Street, Windsor Locks, CT 06096-2518

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additions or replacements were often postponed, the need was clear and eventually the controlling authority would make provision for expansion or replacement.

Now, however, libraries are faced with a much more complex operating environment and many competing needs. The financial implications of this change are fully explored in the accompanying article in this issue of *Library Trends* by Hayes and Brown. This setting is further complicated because many other decisions affecting the library are also made externally. Examples are changes in cataloging codes, which cannot be ignored because the sharing of bibliographic information has become a central task since libraries can no longer hope to be self-contained. Moreover, external services have come to consume a much larger part of the library budget than formerly. Libraries have to be prepared to pay consortial dues, fees to information brokers, and the support costs of automation. Together such charges may now amount to more than 20 percent of a library's budget. The degree of flexibility has similarly been reduced. Most libraries have moved so far down the path of electronic dependence for technical operations (and for reference services) that there is no way of going back. Unless the payments can be made, the services will cease. Even the few major libraries that felt able to pursue an independent course in developing their own classification systems or automated library systems now find that they are being cut off from the mainstream of library and information development.

### RESPONSIVE REORGANIZATION

To meet these changes in their environment, libraries have had to rethink their budgets as well as their organizations. A prime example is the need to provide more far-reaching library instruction. The sources of information have extended far beyond books and periodicals to include databases, online access to catalogs and bibliographies, and online information reachable only by use of the Internet and other telecommunications networks. To enable library users to work with such tools, much more intensive training is needed. The provision of this training must come from time formerly spent on other activities. In addition, the development of automated library systems has now far outreached the capacity of the individual library. Only by working cooperatively with other libraries and system vendors can the individual library begin to cope with its new information environment. This usually means time for attendance at meetings and time spent on updating staff members, again budget items that were not allowed for in earlier budgets.

These changes have come into being precisely at a time when other economic forces have reduced the library's budget capacity to

respond. Even while institutional and governmental budget sources are drying up, libraries find themselves needing more money simply to keep up. One is reminded of Alice Through the Looking Glass. Simply to stay in place, one must run harder. The library costs of the Internet and similar services are by no means clear but cannot be avoided. Although such services are now nominally "free," there are real costs, and it appears that, in the future, there will be more charges for the use of electronic pathways, charges which will be passed on to the library. Although it was possible for libraries to seek special funding for the development of automated systems, their maintenance requires that the library continue to pay from its regular budget for services not contemplated when the budget was set up.

Much has been made of the savings that can be achieved through cooperation and resource sharing, but these have proved to be illusory. Publishers and vendors have become much more aware of the costs associated with resource sharing and, to maintain their own cash flows, have had to recover at least some of the costs resulting from the sharing of information. This has brought them to look more closely at the need for royalty payments, for service contracts rather than purchases, and the need to recover the expensive outlays associated with going electronic. A simple example is the way in which UnCover Inc., which is an outgrowth of a cooperative library experiment in automation, has had to develop a complex series of charges and fees. Although these charges may appear to be extreme—at least to those who have come from the earlier times of interlibrary loan—they reflect the interests of the many players in the information industry.

## AUTOMATION

When libraries moved into automation on a large scale, the first thought was that it could save money on internal operations (Gorman, 1979). Certainly the sharing of bibliographic information via OCLC and similar organizations reduced the costs of cataloging, at least until it became clear that there were other associated costs, such as the maintenance of the supplier organization. Now automation is seen as the principal way in which libraries can save on the costs of acquiring materials. Instead of purchasing in anticipation of demand—the traditional collection development goal—they now look at just-in-time purchasing and sometimes at not purchasing at all in the traditional sense but, rather, purchasing the desired item from a document delivery service and handing it on to the user, who may or may not be required to pay the associated costs. This problem was discussed at length at the ACRL-NEC Fall Meeting in October 1993, where Jay Lucker of M.I.T. said that his institution had decided

that all such costs would be met by the library, since they were incurred because the library had decided to cancel some subscriptions or not to subscribe in the first place. Not all libraries can afford this approach and are having to decide what charges will be passed on and what will be absorbed.

This change in library practice will have profound effects not only on libraries but also on their network of suppliers. There are increasing numbers of document delivery agencies, sometimes as offshoots of more traditional activities, such as publishing. There are also increasing numbers of online full-text databases, although librarians should be wary of whether they are indeed full text (Tenopir, 1993), and these can be expected to grow rapidly on such networks as the Internet. Gathering information, either by the library or the user, has become more complicated. Some users have opted for electronic access in preference to paper access (witness the success of Infotrac, not only with students but with faculty) regardless of the fact that this restricts them to preselected information. There are also growing numbers of information brokers who operate outside the traditional library structure, even though they often make use of libraries, and this may be setting a trend whereby there develops a personal bond between user and broker, bypassing the library. Many libraries which set up fee-based services are having to rethink their viability in the face of such competition (Martin, 1993). In a kind of counterpoint, many libraries are moving toward charges for certain kinds of library services considered to be nontraditional—e.g., database searches or document delivery. Many public libraries have always charged fees for personal reserves or for interlibrary loan requests, and, of course, for videotapes and other nonbook media. There have been some instances when governments have stepped in to prohibit such practices as contrary to the laws setting up free public libraries (Martin, 1993). Academic libraries have seldom charged fees except for overdue and photocopy, but more are considering the possibility as budgets slip. Libraries are thus being forced to think in business terms about their social role, a kind of oxymoron which does not make budgeting any easier. Fees and fines are seen as income by the parent organization, and when their own budget sources start drying up, they encourage the library to expand its income sources. Of course, libraries were always not-for-profit businesses, but this was disguised by the ways their budgets were derived from taxes, student fees, or endowment income. Budget-driven organizations tend to disassociate income and expenditure. Not having to show a profit, they tend simply to spend the available income giving little attention to the outcomes of that expenditure. With a host of competitors accessible to their users, they now have to look

more clearly for such links. No longer the comfortable possessors of the information supply business, they are having to determine their niche in a complicated industry.

### THE LIBRARY ROLE

Libraries are, therefore, faced with deciding what they should do, and often what they cannot do. There are, moreover, no clear rules to help in making this decision. Their traditional role as suppliers of printed information is no longer adequate for the new ways information is distributed. The latest information is often in electronic format and may never appear in printed form. Most library users, but particularly faculty users, are familiar with the many newsletters and communications about their subject areas and will ask for materials which do not appear in any regular bibliographic sources and which may not have any actual existence outside the electronic medium. Some of these sources are available free, but others can only be obtained by paying subscriptions or dues, and some are protected by codes and other keys not accessible to the librarian. As distinct from determining a publisher and a price and then ordering the required publication, it is necessary to decide whether and how to determine what is wanted and available through what means, and then to find whether it can be obtained, either by downloading, by printing, or by sending a request to the provider. Only then can the transaction be fitted into a routine. Moreover, in some cases, it turns out that the material required is accessible only to an individual who can show need. Finally, it may be that it will be necessary to pay a service subscription and a copyright fee. These complexities do not fit neatly into a library structured along activity lines.

The older budget model which separated technical and service operations is in conflict with this kind of information retrieval (Chen, 1980; Martin, 1991; Turock & Pedolsky, 1992; Young, 1976). No appropriate budget models have yet been developed and libraries will have to provide their own sub-budgets if they wish to show clearly how they are using their funds. This may not seem essential, but it is part of the justification now required for any budget request. The problem is that the various parts of these kinds of information retrieval operations cross existing budget lines with the result that it is difficult to arrive at actual costs and to show how these costs relate to goals and objectives. Nor is it simply a question of setting up a new program or activity, since, for the most part, the staff time involved comes from participants in other programs, while the materials and support costs will be equally widely distributed. Some of these costs, in particular those relating to the Internet and similar telecommunications services, probably do not show up in the library

budget at all, yet they are real costs similar to the costs for postage or telefacsimile transmission related to regular acquisitions. There may also be copyright or royalty charges, which might formerly have been part of the cost of interlibrary loan or acquisition, and which were, for the most part, simply absorbed. Now that it is a matter of user-specific activities, libraries might be well advised to keep track of such costs and charge them back.

Here the issue arises of whether the library, in undertaking such activities, is operating a business. Cost recovery cannot stop simply at out of pocket cost but must include regular operations and overhead as most libraries operating fee-for-service operations have discovered. If the library intends to expand its information services in this manner, it is necessary to decide how they will be paid for and by whom. This arises from the personal and specific nature of the information provided. As distinct from the book or periodical, which might be used over time by many users at minimal cost, the information provided by electronic retrieval is for one specific user and will not be retained by the library. In the past, this difference has been used to justify charging interlibrary loan borrowers for the cost of photocopies. Now the same justification applies to a much wider range of activities. Whether or not this course is followed will depend partly on the library's philosophy of service but will depend much more on the level of financial support it is receiving.

#### DEALERS AND VENDORS

All libraries now work with an increasing number of outside agents. These include bibliographic utilities, cooperatives, book and serial vendors, system vendors, and specialized information suppliers. Quite apart from having to decide which one to use for which purpose, libraries must also take into account associated costs. Moreover, the lines among the different kinds of agencies are becoming blurred. As Warzala points out in his article in this issue, the approval plan, for example, is merging with information services. Other vendors, such as CARL or Faxon, are now moving into the document supply area. Some services are mediated through online networks, while others continue to depend on dedicated telephone lines. As was reported in *Library Hotline* ("Wright State to Save \$200,000 by 'Outsourcing'...", 1993) one major library, Wright State University, has decided to contract out its cataloging to OCLC at an estimated annual savings of \$200,000. Such a blurring of the lines between supplier activities is likely to become more common.

This changing scene is a challenge to library ingenuity. Whereas earlier it was relatively simple to assign tasks to specific library units, it has now become much more difficult. This change is being mirrored

in name changes, such as Access Services for Circulation, but the styles of operation have not always changed to meet the new conditions. Interlibrary loan is often thought of as an extension of reference or placed with lending services, whereas it may now be better thought of as part of acquisitions. Acquisitions and cataloging are now inextricably dependent on online services but may have little or no connection with the systems department. The advent of automated library systems has also made it difficult at times to distinguish between these departments, since the initial entry in the system database has to be up to standard, which makes the acquisitions staff part-time catalogers.

Even the growth of the services provided by utilities has now involved almost all library departments. For example, OCLC terminals can now be found, not only in cataloging, but in acquisitions, reference, serials, circulation, and interlibrary loan departments. Whereas formerly the support costs could simply be assigned to technical services, those costs must now be split and assigned by use to several departments. To complicate matters further, there are differential rates for different kinds of uses. The same is true for the library's own automated system, which has grown far beyond simply providing an online catalog to include acquisitions, reference services, and perhaps local indexing. The increase of this type of overhead cost is one of the most noticeable in library budgets.

### VENDOR RELATIONSHIPS

Negotiations with book and serial vendors must take into account not only the level of service provided, but also its cost (Basch & McQueen, 1990). It is not enough simply to look for the largest discount. The level of fulfillment, the kinds of back-up services, and the standard of notification services must also be considered. To these has to be added the fact that, for many online services, there is no purchase involved but rather a lease agreement which may have to be reviewed by legal staff as a contract. Even when a database is actually purchased, there may be additional provision for updating on a contract basis. It is often the case that the library gains no title to the actual database but only a right of use which may, in turn, be restricted to certain users or to a total number of uses before additional charges are levied—or charges may be based on use from the start. This kind of approach is very different from that which saw books and periodicals purchased and transferred to the ownership of the library. Although large libraries may be able to negotiate special rates, most will be forced to pay for each database or service individually. One feature that this style introduces to budgeting is the need for legal examination of contracts for service. Whereas

libraries formerly had such needs but rarely—for example, when negotiating for the purchase of an automated system—can they now expect to call on legal expertise more frequently. As a result, institutions may now seek to recover the costs from the library budget.

Even the apparently simple contract for the purchase of an automated system may now include not only maintenance costs, to be renegotiated annually, but costs for the use of bibliographic data or databases available through the vendor. In addition, libraries need to set aside funds for regular updating or for the replacement of outmoded equipment. Since the operation of an automated system frequently involves other elements of the institution, there may be several partners in the negotiations, each of whom may have a different perspective. How each party interprets specific provisions may affect both the cost and the operational capacity. When the necessary telecommunications involve both WANs and LANs, it may be extremely difficult to separate the costs that apply to each specific use. It has also been a problem for libraries which need to maintain direct lines to suppliers, particularly for system troubleshooting and for access to OCLC or similar utilities. Since most institutions now charge back overhead costs associated with communications, such costs have increased the “other” segment of library budgets substantially.

### LIBRARY MATERIALS

The expansion of library needs to include nonprint material has greatly altered both the library budget and the vendors with whom the library has to deal. The book and serial vendors have been joined by database, electronic, and document delivery vendors. In determining what kinds of materials are to be made available, libraries now have to expand the range of their vendor relations and decide what kinds of purchases have to be made from which set of dealers. Whereas formerly it was possible to decide on the purchase of a subscription to a serial and place it with the appropriate dealer, now the decision has to be made whether to purchase a subscription or simply a specific article. Each decision alters both the library-vendor relationship and the budget allocation involved. A subscription would normally be assigned directly to the library materials budget. An article purchase might be assigned to interlibrary loan, access services, or be charged back to the borrower. If the library is attempting to keep track of allocation by subject or discipline, the amount should also be assigned to the appropriate subject even though it does not represent a purchase. If this is not done, it will not be possible to keep track of user needs in the same way as could be done through acquisition and circulation records. No libraries, however, seem to

have undertaken this kind of tracking. That implies that some of the collection management strategies that have been developed have not been modified to meet new needs. Records are kept to follow copyright requirements but not in terms of the distribution of user requests. There has been some talk of extending the acquisition budget to cover other kinds of transactions, but the full implications of the move toward becoming an "information gateway" have not yet been understood. Libraries may now be moving away from traditional kinds of statistics based on collection size and moving more toward user-related statistics which have less relationship to the collection itself. Even so, for the foreseeable future there will continue to be a need for print materials, if only in fields that do not surrender as easily to electronic media—e.g., literature, philosophy, and the humanities in general. There may be a growing dichotomy among the science-technology-medical fields and all others, with the first becoming more and more dependent on electronic media and the others continuing to rely on traditional publishing. This may not affect greatly the monetary distribution of the budget, since access will continue to be costly in those fields, but it will certainly affect the ways in which libraries organize for the provision of information. Moreover, all access depends on ownership by someone, and it may become increasingly difficult to ensure that the needed, but seldom owned, materials are accessible within the accustomed range of library partners. Instead, libraries will become more dependent on new information providers, such as document delivery services, whose charges will become an important part of the library resources budget. As access to the Internet and similar networks changes from a free to a fee basis, these costs will also have to figure in the resources budget. One possibility is that individual researchers and other users with supporting budgets will begin to work directly with information providers, using, for example, charge cards so that it will be difficult, if not impossible, to determine the actual costs the institutional community incurs in its pursuit of information. The other possibility is that the library will have to act as a clearinghouse for such transactions, even though the actual charges may be distributed over a wide range of budgets.

Similarly, the distribution throughout the library of responsibility for the use of databases makes it difficult to determine the true cost of their use—i.e., including staff time and support expenses. Although it has never been thought of as part of the materials budget, the time spent in shelving and reshelving materials is a true cost associated with the purchase and use of library materials, and the use of electronic sources does not differ except in appearance. Here libraries may need to become much more cost conscious and

calculate all the costs of alternative modes of information delivery before making decisions as to local preferences. The nature of electronic information reduces dependence on physical location in a way that such alternatives as microforms never did, but, in the same way as microforms, electronic publications impose new associated costs which have to be accommodated in the budget.

The traditional budget allocation process, which has not changed essentially over more than thirty years, is now faced with a challenge that may prove unamenable to simple incorporation. Yet it would be as foolish to leave out the electronic media as it is to consider serial expenditures as a given and concentrate only on "books" (Packer, 1988). The traditional use study, which lumped together all users rather than taking into consideration the individual user, will have to be replaced by user studies which concentrate on the user rather than on what is actually used. Only by doing so can libraries begin to see what kinds of resources are truly needed and how they should be distributed. The result could be a totally restructured budget which no longer considers only categories of purchases but also looks at processes and transactions as budget units. Such a move would be in line with the move toward a business approach but runs counter to the kinds of accounts mostly used in the not-for-profit sector.

### PERSONNEL CONSIDERATIONS

The same forces changing the library materials budget are also at work in the personnel budget. In the same way that differential inflation has reduced the library's materials purchasing capacity, the general weakness of government budgets has reduced the library's personnel purchasing power. Although it is not generally thought of in such a way, the hiring of personnel is the purchase of time and expertise, and it is appropriate to ensure that both are used as beneficially as possible. One of the weaknesses of many libraries has been their overreliance on professional staff for many activities which could well be carried out by staff with less training. Now it appears that libraries may have overreacted (Martin, 1991). The transfer to nonprofessional personnel of many activities formerly considered professional in nature—copy cataloging, acquisitions, interlibrary loan, circulation—has been proceeding rapidly (Goudy, 1992). To some extent it has been based on the increasing availability of electronic work tools, but it also reflects the need to stretch the staff budget by using lower grades of personnel. To this can be added the absolute reductions in total staff members. The result has been that, at least in ARL libraries and probably in others, the personnel share of the budget has been reduced from about 60 percent to little more than 50 percent. To the degree that this has been a conscious

move, it has been accomplished by rethinking the role of the librarian within the library. Most reductions have been made in the technical services areas (Gorman, 1990), but there have been some moves to rethink the ways in which reference services should be provided. This shift has been accompanied by more emphasis on better use of staff (i.e., getting more work from the existing staff) and on better management techniques. Here libraries may have been too ready to adopt business methods which are more appropriate to activities which do not directly involve the public. Most library activities continue to be unique and unamenable to the assembly line approach. The increasing reliance on statistics and comparative cost studies tends to ignore this factor. Although community use as a whole may be predictable, the library activities of the individual community users of the library will continue to be one-on-one, whether the borrowing of a book or the asking of a reference question. This kind of activity does not lend itself to streaming or to the dropping of unprofitable products.

## CONCLUSION

Libraries have had to respond to a rapidly changing environment. Their ability to respond has been limited to some degree by their role as dependent units whose budgets are externally set. New technologies and new needs have had to be met at the expense of traditional needs. This has been particularly true in the case of library materials, where there has been not only internal competition between serials and other formats, but also external competition from automation and other electronic needs. Libraries have sought to resolve some of these difficulties by spending more effort to develop true resource sharing and turning to new kinds of information delivery services. But both these moves have been impeded by the failure to develop more effective budget allocation procedures on the part of the library itself and its parent institution. These changes have also been hastened by the economic decline in all government-related sectors of the economy. That decline has left libraries with little time to develop and implement new strategies, but there has been emerging gradually a new kind of budget model based less on the warehouse characteristics of the past and more on the consumer responsive nature of other service industries.

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