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ABSTRACT

Developed as a preliminary, literature-based study for a larger work in progress, this report summarizes the financial condition of academic libraries during the critical period from 1970 through the mid-1980's. The paper examines and addresses the issues which arose as libraries emerged from the 1960's, a time of unprecedented growth in library diversity, funding, and collections, which paralleled the growth of the academic institutions the libraries were intended and designed to serve. The issues that libraries encountered in this environment include: (1) increased scholarly productivity evidenced by the proliferation of journal publications, journal articles, monographs, and other reporting media; (2) growth in demand by scholars and researchers for increased stocks of relevant intellectual resources; (3) increasing rates of cost increases (a double hazard) for these relevant materials; (4) new and expensive information technologies that increased awareness of, and intellectual access to, the increasing number of needed research materials; (5) the growth in service demand to accomplish the physical access to these needed, relevant materials; (6) the emergence of the fee-for-service mechanism to reduce demand, support the costs of extended service, and expand the funding base for library operations; and (7) reduced funding or limited funding increases insufficient to keep pace with financial needs and demands that had been previously supported and maintained. An analysis and review of these issues and problems is provided, interpretations are cited, theoretical and practical responses noted, and representative statistics are compiled. (85 references) (Author/MAB)

ACADEMIC LIBRARY FINANCE, 1970 - 1985:

A REVIEW OF THE LITERATURE

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Libraries in this environment encountered several problems that were to become the norm: 1) increased scholarly productivity evidenced by the proliferation of journal publications, journal articles, monographs and other reporting media; 2) growth in demand by scholars and researchers for increased stocks of relevant intellectual resources; 3) increasing rates of cost increases (a double hazard) for these relevant materials; 4) new and expensive information technologies that increased awareness of, and intellectual access to, the increasing number of needed research materials; 5) the growth in service demand to accomplish the physical access to these same needed, relevant materials; 6) the emergence of the fee-for-service mechanism to reduce demand, support the costs of extended service and expand the funding base for library operations; and, 7) reduced funding or limited funding increases insufficient to keep pace with financial needs and demands that had been previously supported and maintained.

These issues are examined and addressed in a selective literature review that ranges from the theoretical to the statistical. An analysis and review of these several problems is provided, interpretations are cited, theoretical and practical responses noted, and representative statistics are compiled.

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INTRODUCTION

This study concerns the recent history of the academic library in relation to the institution it is designed to serve as well as the powerful forces of change that currently exist and which portend a future of radical change in the nature of the library's function and role. What makes this study a matter of current interest is that it centers on the role and function of the library in the academic community and its changing relationships with the university community and the non-

university users who have need of its resources. This review of the current literature in this area will seek to establish a basic understanding of the academic library and its changing role. From this review this study will glean a characterization of the options, barriers and opportunities that the university library must confront to continue to be an active participant in the teaching, service and research life of the total institution and of the scholarly community which has been its traditional place in society.

Some explanation of the scope and background of this situation is in order. Under the traditional scheme of things the function of the academic library is essentially two-fold. First the academic library is designed to support the teaching curriculum of the institution of which it is a part. In so doing, it is expected to provide the acquisition, processing and dissemination mechanisms for the materials of study that are needed by the students and faculty in the course of their academic preparation for their professions and further education through the graduate schools. Secondly, the academic library is expected to provide for the advancement of research by supporting the advanced information needs of the research faculty as they conduct their work. Simply put the library is intended to support the diverse research needs of its entire user community. To accomplish these missions academic libraries have grown into complex organizations with many staff positions fulfilling a variety of precise roles. There is no doubt that they are

expensive operations. Herein lies the central issue of this present study. Libraries in general, and academic libraries in particular have become so costly that their institutions have long since been forced to impose financial constraints that have reduced the resource and service offerings of the library. This circumstance cannot be viewed as temporary; there is evident no redress from the impact of rising costs, diminished funding, increasing knowledge production and increasing demands for greater stocks of knowledge resources, namely books and periodicals. Solutions must be found to these manifold concerns. A study of the issues centering on library finance seems indicated.

METHODOLOGY

To examine the issue at hand more thoroughly, an extensive literature search was conducted. Several hundred articles were discovered in the surveyed period 1970-85. The search was conducted in the ERIC database and through Literary Literature, the principle indexing service appropriate to library and information science. This initial group of articles was substantially reduced to eliminate the repetitive, argumentative or irrelevant materials. This review and the bibliography which is attached to this document are intended to be viewed as a selective listing, and in no way represent an exhaustive enumeration and consideration of all possible materials.

Considerable measures of value were applied to all the articles and books listed.

LIBRARIES IN THE INFORMATION ECONOMY

Historically labor intensive operations, libraries have been long-term participants in the "information age" preceding the current vogue by several hundred years in the modern sense. Artandi (1979) succinctly characterizes the new information society:

> Characteristic of today's socially, economically, and technologically complex society is an ever-growing information output coupled with a constantly increasing reliance on information. Information is more and more considered a resource and recognized as a key to other resources. There is also a recognition of the political and economic value of information and of the direct link between information and political power. (p. 18)

Against this age-old tradition, the contemporary library finds itself confronting a series of countervailing dynamics. First, the growth in the volume of published material suitable for library research collections has been growing at a tremendous pace. Not only is the number of articles in a given field of study increasing, but the number of journals in existence in that

field is also growing in response to the demands of the publishing and communicating researchers in the field. The number of scholar-researchers in all fields has increased accordingly and they in turn become and continue to be active participants in the research and communication function of their specialties. Price (1963) was among the earliest and probably the most eloquent chroniclers of the growth of literature in the sciences and in general. His description of the "exponential" growth in the volume of published material is valid in nearly all fields and accurately suggest the nature of the current problems and suggests increasing problems in the future.

As the frontiers of research are expanded and the complexity of study increases, the demands of researchers for more rapid and efficient access to the materials of their work also increases. The use of computer databases for the purpose of consulting abstracting and indexing services as an alternative to printed resources has afforded significant benefits to specialty researchers and are especially valuable for researchers in fields for which no printed index exists or which is not available in their local library. The benefits of such advances and options are recognized by faculty, students and librarians alike (Raben, 1983). The importance of these changes is suggested and emphasized in the discussion of what has been described as the era of problem-oriented research (Boss, 1979). That is to say, research endeavors are no longer limited to the study of specific, discrete topics of interest within a specific

discipline, nor are they limited to considering the interrelationships of study among several related disciplines. Rather, researchers are concerned with pulling together the related data that satisfies the information need dictated by the problem in its largest context. Researchers are no longer allowed the luxury of pure, isolated research directed at acquiring knowledge for its own sake. Researchers are drawn increasingly into the study of entire complex issues. Research work of this magnitude and complexity necessitates the use of the most efficient means of sorting through the whole of a fields literature to find those useful and relevant materials that are germane to the current research work.

Lancaster, Drasgow and Marks (1979) have clearly stated the relationship between the library, the information economy and the needs and demands of researchers at the present time. Not only do they address current issues, but also concern themselves with the developments in electronic publishing and other forms of information transfer technology which will soon be upon the scene. Lancaster and Smith (1978) have raised an additional problem of information demand/use. Though the problems of the advanced researcher are often offered as the most pressing information need, librarians must also concern themselves with the problem of information to the practitioner in business, industry, education, and, ultimately, to the general public.

Even as there are increasingly large amounts of research productivity to draw upon in the conduct of current research,

both in terms of publishing outlets, i. e, journals, and in the number of articles appearing in those journals, the ability of the library to maintain currency with those materials is lagging behind the availability at an alarming rate. Here enters the second dynamic of contemporary library experience. The rise in the cost of library materials on a per unit basis (e.g. book, subscription, index) has consistently led the inflation rate per annum for more than two decades (King, 1979). The support that libraries receive to increase their budgets to accommodate the increased costs has fallen far behind the need. Waters and Kralisz (1981) summarized well the plight of the public library in relation to dwindling resources and declining tax bases and their comments are entirely applicable to academic environments as well. Even inflation-adjusted budgets, which are designed to compensate for the changes in the economy as a whole, are inadequate to maintain even the slightest hedge against these powerful economic forces. Further, such steady state budgetary responses offer no support to the fields with growing productivity, the new fields which are continuously emerging, and eventually to even maintain the previous levels of support to existing resources; hence, the decade-long process of journal cancellations.

Apart from the materials concerns, the contemporary library must concern itself with the increased cost of processing materials for use by the patrons. Being labor intensive, the library is strongly influenced by the cost of hiring the staff of

skilled individuals who can process the materials. Labor costs have followed the inflationary cycle in libraries just as they have in all other industries. Additionally, the growth in the size of library collections and the complexity of the means by which those collections are maintained and processed has necessitated the increase in the number of staff needed. This double impact of more staff and more expensive staff has reduced further the ability of the library to adjust its resource allocation. Even if the inclination were present to reduce staff and use the money for resources, there often exist regulations that prohibit that sort of transfer of funds. Further, any alteration in this way would at best have only slight advantages of short duration. A qualified staff is essential to effective library service. Neville (1982) has addressed this problem of organization and staffing from the perspective of reorganizing the library to confirm to the needs of the user; in so doing it is suggested that there is need for the library to change some fundamental self-perceptions. These changes are in keeping with the dynamic forces of the information economy under discussion here. Drake (1979) is somewhat more direct:

> Libraries will have to change with the environment. High labor-intensity and massive collection building are no longer affordable even by the richest library. Innovative strategies to reduce the rate of increase in unit costs and to make off-site resources available are essential.

> Resource sharing and automation are two strategies likely to be integrated into the library of the future. Both strategies require capital which may not be available in the traditional library budget. (p. 96)

Despite all these problems there exist refreshing advances in technology that offer the promise of relief from some of the severity of the impact of these powerful forces. The increased use of computer technology for library applications has functioned for nearly two decades to reduce the rate of climb for the costs of processing materials. The economical advantages of library automation have yet to be fully realized though they are significant. Kinney (1981) provides a brief overview of the use of automation in support of resource sharing via telecommunication links and suggest that innovations such as these may soon cease to be exceptional and become rather commonplace information transfer resources and pathways.

Libraries began adopting automation nearly as soon as it became available and its use has greatly accelerated in the las decade. Apart from the adaptation of routine housekeeping details of inventory control, such as circulation of books through automated circulation systems, libraries began using automation products for the cataloging of books through shared resources such as the OCLC system and similar services. In support of library research services, libraries began using computer supported databases for online access to abstracting and

indexing services in the mid-sixties. Commercially available vendors of database products made their products available to the general library user through the mediation of qualified staff who had received training in the use of these systems. Librarians added this training to their previous training and experience in information gathering activities to create what are now commonly referred to as information retrieval services. These activities were among the first to show the public that library automation was of direct benefit to their specific tasks.

IMPLICATIONS OF LIBRARY AUTOMATION AND FINANCE

The advent of searching machine-readable databases provided two very different phenomena. On the one hand the ease with which these databases could be searched greatly facilitated the process by which researchers, working through a trained librarian/search analyst, could exercise control over the growing body of published literature. Simultaneously, the library had its first truly identifiable information demands of its clientele. In contrast with the traditional scheme whereby the library would purchase materials based on the perceived need of the researcher in anticipation of the researchers need, the library in the early stages of the electronic age could wait for the need to be expressed by the researcher and then make contact with the database of need through the vendor/supplier of that database. Providing for the research need then became a discrete

act of information delivery; the obvious implications of this practice suggest that there are some obvious and profoundly realistic alternatives to collection building and service development.

Several outcomes of this transition, which is by no means complete, soon surfaced. First, the need for a specially trained and experienced staff to act as intermediaries was perceived and the profession has in large part responded. This change in the role of library staff has necessitated the partial redistribution of staff from their former roles toward more specialty in terms of not only their skills, but also in terms of their background and specific library function. The demands on library staff in the information age far outreach simple problems of system training and better scheduling for service. With the growing abundance of technically demanding information whether as generated or as needed, librarians are increasingly called upon to provide more policy input especially with reference to the following: 1). placing values on information, 2). maintaining accurate inventories and access mechanisms to local and distant collections in a clearinghouse-type role, and 3). in determining policies on use, access and availability (Diebold, 1983). In the circumstance of continued staffing at steady levels, even if no staff reductions took place, there exists the situation wherein staff are called upon to produce more, in response to more demand, and at a skill level which is greatly increased.

A second outcome of the addition of online services has been that the library can for the first time readily identify the direct cost of conducting research on behalf of the user. The costs of using the computer are easily identified when the work is done. Saffady (1979) developed a thorough example and method of determining the costs of online searching by fully costing the activity in the academic library environment. Not only is this apparent in the case of the online computer search, but it is equally apparent in the conduct of inter-library loan transactions, photocopying of resource materials, and even book cataloging and similar activities.

DEVELOPMENT OF FEE-BASED SERVICES

The foregoing discussion of the various forces and factors effecting the library are all coincident within the last decade. Given the state of financial support and the sudden arrival of economical means of computer driven support for research work, it is not surprising to note that as libraries began to provide for online searching, there came, too, the necessity to pass along to the service consumer the cost of providing the service. Friedes (1983) notes the historical development of these services and the subsequent demands on staff and resources. The introduction of these information retrieval services, whether for fees or subsidized, resulted in staff changes and reorganizations for reasons of "efficiency and economy". The introduction of online

searching in the academic library environment provided a means by which the costs of research work could be at least partially understood, but also a simplistic mechanism by which the implementation of user fees could be made. For all too many libraries, the choices were quite basic. Without the charging of user fees the service could not be provided. That the services were needed, and that users were willing to pay for the cost of the work is at least indirectly apparent in the fact that such services have not only continued to exist but show considerable growth rates each year (Cuadra, 1983).

By extension, the need to broaden the implementation of user fees for a variety of services has been increasingly apparent as libraries continue to increase not only the scope but the amount of the fees. More things cost more for the general user. Heretofore, the types of services for which fees have been used was largely concerned with the non-traditional or extended and specialized services, such as computer searching and interlibrary loan. As the financial and economic forces continue to consume more of the library dollar, it is not surprising to see, nor difficult to envision, a growing tendency to apply user fees wherever appropriate. "The extent to which libraries utilize service fees in the future will depend on institutional policy decisions" (Friedes, 1979, p. 96).

These historical perspectives are intended to cast the setting in which the contemporary library has struggled to exist and fulfill its mission. The implementation of user fees, which

until recently were a limited phenomenon in library service, is borne of the demand for the information sources, the need for passing along of these expenses, and the willingness of the patron to pay for the advantage of the service coupled with the ability in the computer age to identify and recover the costs of services received by the individual. Furthermore, the aforementioned example of user fees in connection with the delivery of library-based information resources serves as a specific and forceful case in point of the contemporary state of practice in the academic library. This illustration serves throughout the following discussion of library funding as the model of current activity as it has been dictated by the fiscal and technological pressures at work.

FINANCE AND THE ACADEMIC LIBRARY

The patterns of library finance in the last four decades has been recounted in numerous instances, though the precision of these stories and the breadth of their coverage of the entirety of the academic library domain has been rather sketchy. Indeed the last thirty-odd years experience in measuring library activity have probably told us much about our needs as statisticians as about the real value of quantifiable measures. The history of library statistical activity is well traced by Schick (1982); such publications as the Bowker Annual of Library and Book Trade Information (1955 - 1985) as well as

portions of the Digest of Educational Statistics serve to gather and analyze relevant data on the use, distribution, costs, funding and demographics of may significant aspects of the range of activities and forces at work in the society as they relate to academic libraries. These broad ranging population surveys have been periodically supplemented by focused research and statistical studies. Among the works of more particular value are included Hokkanen's one hundred year overview of the output of the American book trade (1981), the "National Inventory of Library Needs, 1975" (Trezza, 1977), and "Academic Research Libraries: Recent Studies" (Stubbs, 1985). Ladd and Schick (1974) compiled an exhaustive enumeration of the sources of statistical data appropriate to the subject of his discussion and have provided a useful overview of the historical development of statistical activity and the emerging system for the collection and analysis of this data in a systematic and precise manner. Provided as an attachment to this report is a compilation of selected library statistics which have been drawn from the aforementioned sources and others. It is immediately apparent to the researchers in this field that the compilication and analysis of data in this area is time consuming and generally difficult to coordinate in a meaningful manner. The various measures of library activities are manifold, their reporting sources are numerous (over 3,000 academic, and 27,000 other libraries in the U.S. alone) and the unique characteristics of each library militate against systematic analysis of the libraries themselves.

With this limited contribution of the statistical sources we can look to some of the summative comments of other researchers.

Schmidt (1975) provides a simple introduction to the historical financial patterns of academic libraries and reports that from 1951 to 1974 the funding of libraries increased nearly 770 percent while the size of collections in those same libraries increased only 158 percent. The surveyed period has been described by some as the "golden age" of libraries in this country and may be seen as a aberration in the more modest history of library development.

The last fifteen years, though, have seen the onset of stable and sometimes declining funding for academic libraries; stable in the sense that some response was made toward inflationary pressures, declining in the sense that there were no responses to inflationary pressures, and reduced in the sense that actual reductions in base budgets were made. Nevertheless, by 1975 academic libraries had grown enough to qualify for the dubious status of a "billion dollar industry". (Cohen and Leeson, 1979) Lest this figure be misread it is important to point out that the proportion of the higher education general education budget that goes to the libraries is still significantly less than the five percent standard approved by the Committee on Standards of the Association of College and Research Libraries in 1959. The Cohen and Lessen study further found that the average percentage share of the general education budget ranged from a high of 8.3% to a low of 1.1% with the average

being 3.5 percent. Perhaps the most useful aspect of the report is the enumeration of all of the options for resource allocations that the library must address. Though the principle divisions of the budget have remained historically divided among materials (books and periodicals), salaries and "other", it is within these categories that the major decisions are made. The significance of this perhaps is illustrated by the fact that the entirety of library automation expense is funded from the "other" category, save in those instances when block grants or capital funds disbursements are so directed. Cohen and Leeson offer some significant points to consider in the continued review of library funding: Library budgets are a function of the size of the institution to which they are attached rather than any fixed budget percentage, and the library is almost exclusively dependent on the university for its source of funding.

In two articles on the topic of academic library funding, Talbot (1984 and 1982) has presented the clearest picture of the plight of the college and university libraries under the current scheme. Academic library funding is essentially frozen or is in some cases actually declining. In real dollar terms the expenditures for resources on a per student basis, and for salaries and operating expenses have continually declined from 1967 to the present. Further, library allocations for materials, salaries and other expenses have remained largely unchanged from the 60-30-10 "rule" which has been so long in force as to constitute a historical norm of behavior, with 60% of the budget

going to salaries and wages, 30% to materials and 10% to cover all other operating expenses. This pattern persists despite the shift toward more automation and the inflationary pressures of book and periodical prices. White (1979) notes that with the prices of books increasing at a rate of 18% per year the cost of materials acquisition would double every four years. A quick scanning of the relevant statistics indicates that this has not ever happened. With this rate of increase, the library is destined to make some fundamental changes in its internal operations and the allocation of its resources. Talbot (1982) suggest that the nature of library service will have to undergo a significant change away from the notion of collection building, that the notion of possession of materials will give way to the notion of access to the information, regardless of its location or format. This idea has been previously stated by Schmidt (1975) and the importance of resource sharing for the academic library is echoed in the public library sector in similar fashion by Water and Kralisz (1982). These recommendations are made not only by librarians, but by campus administrators as well, who understand that the historical behavior in campus budgeting of ever-increasing annual budgets is no longer feasible. Further, libraries must exercise greater imagination and determination in the on-going competition for the institutional budget (Leonard, 1983).

At least two approaches to library budgeting are being offered in response to these financial difficulties. Marchant

(1975) has offered a well reasoned theoretical article which proposes the development of an economic theory of libraries. The article presents concepts of economic theory, economic system and economic model as applicable to the unique circumstances of the library. Despite static patterns in the basic economic and organizational characteristics of the library, Marchant considers modelling to be important in the process of predicting future costs. This approach coupled with potentially radical changes in the organizational structure of the library may prove feasible solutions. Another attempt at economic theorizing in the library field is offered by Zais (1977). This approach emphasizes the need to couple complete cost data with service demand information for the proper matching of service with funding. Thence can be developed a pricing model which would provide for the allocation of funding from the users consumption patterns. Buckland's (1979) research into the variations of library use and information-seeking behavior advances some theoretical implications for the reallocation of resources in view of the anticipated use that a certain type of library or library service is likely to receive. The further implication of Buckland's work is that through such theoretical efforts as these, the reallocation from material possession to information access can be directed. The influence of this knowledge with the implementation of newer information technologies can lead to the reallocation of resources, the reorganization of libraries and the restructuring of the academic learning experience.

Broadbent's (1981) contribution is similar in seeking the theoretical optimization model for the pricing of information services. This approach drawn, from operations research methodology, should lead the library administration to the policy decisions that would justify the expenditures with the need. The limitations of optimization modelling are significant in libraries where much of the information needed to drive the model is not available in a quantifiable form. The view then shifts, for Broadbent, to consideration of organizational objectives and market structures as the means by which library service pricing can be developed. Thus providing a piecemeal solution to the funding of the library. Battin (1984) also takes a theoretical approach to new funding ideas but from the viewpoint of reorganizing the larger institutional structure. This approach requires the development of centralized financial and technological planning to address the emerging information technologies and incorporate them into the academic, research, service and communication activities of the university.

The more practical side of funding is budgeting and the literature does not fail to indicate the range of possible actions available to the library practitioner. Martin (1977) illustrates the application of a modified program budget through several budget models to demonstrate, in a simplified form, the utility of the budget as a planning instrument which is susceptible to change to reflect necessary alterations in the functioning of the library. Other useful examples of budgetary

activity directed at the reallocation of library resources in view of cost studies and fiscal planning are provided by the Association of Research Libraries, Office of Management Studies, Systems and Procedures Exchange Center. This useful series of publications presents actual scenarios, procedures and case studies which illustrate solutions to the problems. Shirk (1984) in surveying 102 libraries found that whereas operating funds are the principle source of finance for capital expenditures, as many as twenty different financing methods are employed by the respondents. Another significant element discovered in this survey is that institutional and governmental policies and regulations constitutes "the most important limitation" on the range and application of financing alternatives. Finally, Indiana University employed a major effort to rationalize their budgetary needs with their funding and proceeded to an appropriate reallocation of funds within the library's resources budget (Bentley and Farrell, 1984). This practice and rationale is carefully explained and the results seem fruitful, though the standard library caveat is implicit. The circumstances, opportunities and solutions applicable in one library may not be transferrable to another, even similar institution.

USER FEES IN PUBLICLY FUNDED LIBRARIES

The Model of Demand Based Information Services

The foregoing serves to illustrate the variety of professional responses to this serious problem and the wealth of creativity and the diversity of pathways employed in the service of the profession suggest a healthy and vital reaction to the issues at hand. As mentioned earlier libraries have for several years offered online literature searches to patron for which the libraries often recover the costs incurred through the conduct of the inquiry. This is a method of funding that has been employed now for several years, largely because the libraries introduced the services at a time in their fiscal lives when there was no alternative save not offering the service at all. This activity can serve as a model of a demand-driven, information-intensive service funded outside the library's traditional structure. A review of this development can serve to illustrate the potential for this type of activity on a broader scale in the academic library.

The current literature reveals a variety of material on the topic of user fees for library service in publicly funded libraries. Much of this writing is polemical in nature. In sum, it reveals the mind-set of the mainstream of American library service whose motto is seemingly that library services should be free and open to all. Waldhart and Bellardo, (1979) provide one

of the best summaries of the various opposing arguments in the user free debate. The most terse and lucid statement of the financial forces at work in contemporary library service is provided by Stevens (1982) who carefully avoids being drawn into the quagmire of tradition confronting reality. He also argues for the development of clear policy to serve as the foundation the development of practices and budget perspectives that will clarify these issues, and in a sense, brings a level of cogency to the current malaise. Dougherty (1978 - 83) in a series of editorials, has provided increasingly intense recitations of the evils of user fees and their potentially devastating impact on the distribution of information in society. De Gennaro (1983) offers a socio-philosophical argument from the mainstream of serious thought on libraries in the information age and offers that the foundations of the information age reside in the historical American principle and practice of "free", i.e. publicly funded, libraries open to all and invokes the Jeffersonian admonition that an informed citizenry is essential to a free society. To this, Drake (1983) would respond "there is no free lunch, free love, or free library;" free libraries are such only in the sense that someone else is paying for it, namely, the taxpayers the taxpayers who support publicly funded institutions, and the costs of generalized information delivery are transparent to the naive user, nearly all faculty, and all-too-many librarians.

Drake (1981) has assembled the single largest collection of material on user fees. Her work adequately characterizes not only the publicly funded library situation, but succeeds in presenting the varied viewpoints whether philosophical or practical. Pfister's (1981) contribution as an economist is far from a dismal perspective and provides one of the most rational insights on the impact which the library can expect when becoming more of a service business; these matters are perhaps more real and vital, in all fairness, than the issues of "free use" of "free libraries" which characterizes much of the professional literature.

Rouse (1981) reports the status of fee based online literature searching in the Big Ten universities and finds that 9 of 10 absorb part or all of the indirect costs, 3 charge all or part of the indirect costs to the user and 8 charge only the direct costs. This review of selected activity briefly and forcefully indicates the wide variety of pricing options that are available, acceptable and workable. The issue for these libraries hinges on several matters: different computer systems used, different accommodations made on the basis of the user's status, e.g. student, faculty, or non-university affiliate. Brill's (1981) "business perspective" is a valuable model for practical charging alternatives which could be effectively translated from its corporate origins to the publicly or institutionally funded library.

Some of the best report available to date on user fees, specially as a means of funding online database searching, is as to the theory and philosophy at work in the profession in the area of user fees. What is clear is that fully 72% of the 985 publicly funded libraries responding to the survey report that at least part, if not all, of the direct cost of the search is charged to the user. A more explicit finding of this research is that while only 65% of the public libraries charge for these services, fully 98% of the academic libraries find the fees necessary. Another conclusion seems to be that while users are expected to pay for what they specifically consume, at least in part, it remains the library's public mission to provide for the start-up expenses, and for a considerable portion of the overhead, maintenance and almost always the full cost of the staff (88%). Reporting a similar survey of libraries in Britain, Cannel and Mowat (1982) indicate that there, too, the tendency is to provide services with at least partial cost recovery (three to one).

Waldhart and Bellardo (1979) have studied reports and articles on pricing policies and conclude that as a whole the profession practices considerable implicit caution in the applying of fees. The inference drawn is the

> The use of a pricing mechanism in the public sector, instead of free distribution with financing exclusively by taxation, is considered most justifiable when: (1) benefits are

> primarily direct to the user, so that the fees will not cause significant loss of external benefits to society at large; (2) demand has some elasticity, so that user fees aid resource allocation and control excessive use; (3) charges do not result in unacceptable inequities to those user groups which lack the ability to pay for the services; (4) costs of collecting fees are relatively low in relationship to the funds generated by the fee. (p. 53)

Other literature reported indicates that there are three basic approaches to pricing information products and services. The need to determine these pricing strategies is detailed by Fergusson (1977) and several approaches are offered by Zais (1977) the most acceptable being driven by the actual cost of providing the service in question. Casper (1977) addresses not only the matter of pricing library services, but provides an excellent summary of the problem area which returns to the philosophical opposition to user fees in general writing;

> It is also important to stress that user fees do not necessarily mean that the objective of the library is profit maximization, as it is generally for private firms... Librarians need not abandon their social goals in adopting user fees for some categories of library services. (p. 309)

Several conclusions are forthcoming from the foregoing brief survey of the literature. First, there are a variety of internal and external factors that currently influence the publicly funded academic library in the direction of broadening its revenue base by the charging of fees to users, especially in the case of the provision of non-traditional services, such as online database searching. Second, there is considerable debate even within the library profession as to the appropriateness of such charges. Third, there exist services for which users are willing to pay some, if not all, of the incurred cost. Fourth, there are costs for the provision of services which are identifiable and attributable to the individual's use. Fifth, there is currently no universally accepted model for the allocation of costs and the setting of user fees in the publicly funded academic library; fees and charges are set on something of an ad hoc basis. Sixth, the suggestion and implementation of user fees does not necessarily portend the end of libraries as they have been known. Many, if not most, of the traditionally "free" services will continue, and serve their traditional consumer bases.

Some conclusions can be drawn, though, at this point. Fee based services are at least selectively viable operations in the academic setting. Such services are quite variable in their mission and functions: 1) a good library collection, coupled with a highly trained, technologically grounded staff, 2) strong support from the host library, 3) strong support from the university administration, and 4) considerable autonomy of

operation within the library and university structures. In these regards the entreprenurial organizationally based librarian and information specialist requires a non-traditional organizational environment.

FUNDING RESOURCES AND TECHNOLOGY IN TOMORROW'S LIBRARY

Throughout the foregoing discussions and descriptions of the plight of the academic library there persists several issues. That costs for library materials, personnel and operating expenses will continue to rise abated only by the library's or institution's inability, failure, unwillingness or refusal to pay more. This also raises the question, Is there any other way to accommodate the information needs of the users of the library, and more fundamentally, what are those needs and are they to be met in the traditional library schema? Some might argue that the academic library is in its present predicament because those in control of the planning and activity of the library have implicitly, if not explicitly, decided that the future can only be like the past only more of it. Against this rather nihilistic and fatalistic view there stands another element that has been repeatedly suggested in the works of many of the contributors cited in this review, namely, the reallocation of resources. This reallocation of resources cannot be fully understood in terms only of how much the library decides to allocate out of a given budget for books as opposed to periodicals, or whether a

vacant staff position will go unfilled until the maintenance contract for the new computer is paid for the current fiscal year. More fundamentally the issue is how the library chooses to spend its money in the fulfillment of its goal and objectives.

Historically, the library has been a document intensive enterprise, hence the observation and belief that the size of the collection is a crucial element in the evaluation of the library. The entire focus of the library's budget has been directed at the acquisition, processing, identification, storage and retrieval of the item for the anticipated use of the student or faculty member. If there were to be a shift from this point of view, a true reallocation of resources, the system could conceivably by altered to become a demand driven, information intensive service center, potentially dismembered as a structural place. To be sure, there are some technological difficulties with such a proposal, but it may not be as radical as at first perceived. Lancaster (1982) introduces such a notion. The computer and communications technologies are rapidly becoming available and increasing amounts of information are being stored in machine-readable format. The spread of personal computers is now at highly significant proportions in the society at large and are largely in the hands of the information consumers already. Most of the costs and the resultant funding shortfalls can be attributed to the traditional emphasis on documents stored in archival manner in large, heavily staffed, expensive structures.

CONCLUSION AND PROSPECT

Students in our universities have changed in the recent years and continually they will need delivery mechanisms for instruction that argue against large, centralized physical plants. Institutions have already recognized and responded to this trend with flexible delivery systems for instruction beginning with evening courses, off-campus classrooms, non-traditional coursework, television and satellite course offerings and the recent advent of the "electronic university" using television, teleconferencing, and computer technology for the decentralized availability of instruction. Such offerings have not destroyed the concept of the university and, in all reality, have probably, from the perspective of education served many who otherwise would not have had the opportunity for education short of serious impact on their everyday lives. What is being proposed by Lancaster is similar to the foregoing educational delivery system, only its function is in relation to the delivery of information, formerly and traditionally held as physical things in the confines of a centralized library structure of recognizable location and dimension.

The conclusion of this study is found in this suggestion. Through the careful analysis and study of the opportunities, technologies, and demands of the current situation the direction of the reallocation of resources will be made apparent. Only in this fundamental realignment of our policy-based decisions about

resources can the reallocation of our material resources be made manifest. Libraries that provide essentially unlimited intellectual information resources via their funding allocations of equipment and payment based on use of intellectual property will come to fruition. Our current efforts at automation and database searching can be seen as merely crude precursors to the future applications and services.

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APPENDIX

STATISTICAL INDICATORS OF ACADEMIC LIBRARIES

The following tables are composite assemblages drawn from the sources listed below. The variations and absences of certain data for individual years and the occurrence of some seeming discrepancies in the figures can be attributed to the different criteria applied and different reporting mechanisms employed by the various agencies involved. These tables are included to illuminate the circumstances of academic libraries, but are not meant to reflect precise information in comparison of number with another. The validity of the data in the original sources is note being questioned, only their comparison by the combination in this form. For any shortcomings or misrepresentations in the data or conclusions inferred, the author takes sole and full responsibility.

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LIBRARY STATISTICS TABLE 1 COLLECTIONS AND USERS

YEAR	LIBRARIES	STUDENTS ENROLLED	BOOK HOLDINGS (1,000's)	BOOKS ADDED (1,000's)	JOURNALS RECEIVED (1,000's)
FY 1967	2300	7000000	295000	22000	3400
FY 1968	2430	7300000	305000	25000	2500
FY 1969	2500	7800000	329000	26000	2600
FY 1970	2570	8000000	354000	26000	3000
FY 1971	2600	8200000	380000	25000	3600
FY 1972	2625	8400000	405000	25000	3900
FY 1973	2900	9700000	407000	25000	3900
FY 1974	3950	10300000	426000	25000	4000
FY 1975	3000	11200000	436000	25000	4100
FY 1976	3000	11500000	468000	23000	4500
FY 1977	3000	11700000	490000	23000	4600
FY 1978		11285787	519849		
FY 1979	3122	11260092	519849	21606	4749
FY 1980		11569899			
FY 1981		12096895			
FY 1982	3104	12371672	567826	19507	4890
FY 1983		12425780			
FY 1984		12420000			
FY 1985	3322	12247000	631727	20658	6317

Source: NCES

LIBRARY STATISTICS TABLE 2 ANNUAL BUDGETS

YEAR	LIB BUDGET TOTAL EXPEND. THOUSANDS	PERCENT CHANGE YEARLY
FY 1967	416000	
FY 1968	510000	22.60
FY 1969	584600	14.60
FY 1970	650000	11.19
FY 1971	737000	13.38
FY 1972	796000	8.01
FY 1973	867000	8.92
FY 1974	960000	10.73
FY 1975	1092000	13.75
FY 1976	1180000	8.06
FY 1977	1250000	5.93
FY 1978	1349000	7.92
FY 1979	1427000	5.78
FY 1980	1624000	13.81
FY 1981		
FY 1982	1943770	
FY 1983		
FY 1984		
FY 1985	2404524	

Source: NCES

LIBRARY STATISTICS TABLE 3 STAFF

YEAR	STAFF SIZE FTE	STAFF SALARIES THOUSANDS	SALARIES AS % OF BUDGET
FY 1967	33000	193000	46.40
FY 1968	43500	235000	46.10
FY 1969	45000	273000	46.70
FY 1970	47000	307000	47.20
FY 1971	49000	361000	49.00
FY 1972	50000	390000	49.00
FY 1973	54000	443000	51.10
FY 1974	55000	508000	52.90
FY 1975	56800	593000	54.30
FY 1976	56700	650000	55.00
FY 1977	57000	700000	56.00
FY 1978			
FY 1979	58412	710086	50
FY 1980			
FY 1981			
FY 1982	58476	914379	47
FY 1983			
FY 1984			
FY 1985	58476	1156138	48.1

Source: NCES

LIBRARY STATISTICS TABLE 4 EXPENSES

YEAR	MATERIALS EXPENSE THOUSANDS	MATERIALS AS % OF BUDGET	OTHER EXPENSES THOUSANDS	OTHER AS % OF TOTAL
FY 1967	156000	38	24000	6
FY 1968	188000	37	33000	7
FY 1969	212900	36	36900	7
FY 1970	230000	38	45000	6
FY 1971	247000	34	53000	7
FY 1972	260000	33	60000	8
FY 1973	282000	33	67000	8
FY 1974	300000	31	70000	7
FY 1975	312000	29	103000	9
FY 1976	337000	29	105000	9
FY 1977	350000	28.00	107000	9
FY 1978				
FY 1979	403651	28	122722	9
FY 1980				
FY 1981				
FY 1982	561199	26	169478	9
FY 1983				
FY 1984				
FY 1985	750282	31.2	233957	9.7

Source:NCES

LIBRARY STATISTICS TABLE 5
LIBRARY SHARE OF HIGHER EDUCATION COSTS

GENERAL HIGH. ED. BUDGET MILLIONS	LIBRARY EXPEND. MILLIONS	PERCENT SHARE	YEAR
9951	346	3.48	FY 1967
13290	493	3.71	FY 1968
13835	572	4.13	FY 1969
15789	653	4.14	FY 1970
	737		FY 1971
	796		FY 1972
	867		FY 1973
	960		FY 1974
27548	1002	3.9	FY 1975
30599	1224	3.8	FY 1976
33152	1250	3.8	FY 1977
36257	1349	3.7	FY 1978
39833	1427	3.6	FY 1979
44543	1624	3.6	FY 1980
50073	1759	3.5	FY 1981
54848	1922	3.5	FY 1982
58929	2039	3.4	FY 1983
63741	2231	3.5	FY 1984
70061	2361	3.4	FY 1985