
Education for Library and Information Management Careers in Business and Financial Services

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ABSTRACT

DURING THE 1980s, information technology proliferated in corporations. While the technology permitted information professionals to add much more value, it also greatly increased information expense. Rising expense made financial management the fundamental library management competency, while intensifying top management pressure on the library more generally. Unfortunately, librarians continue to lack serious interest in the financial management implications of information technology. The education tends to reinforce this because it is defined by a series of obsolete dualisms—theoretical versus practical, core versus types of libraries, active versus passive learning. Acceptance of theory—plus a rigorous active approach to the core—will help release the education's potential for both corporate libraries and the businesses they serve.

INTRODUCTION

Corporate library management is in crisis. Top jobs turn over frequently. Sometimes new library managers are general administrators with financial backgrounds and are not librarians. Relatively few librarians aspire to top jobs. Other warning signs are easy to miss. For example, the profession accepts the small size of most corporate libraries as a function of subject specialization. At the same time, many librarians envy other managers whose functional areas grow as they progress beyond their original position parameters.

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LIBRARY TRENDS, Vol. 42, No. 2, Fall 1993, pp. 232-48

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Corporate library management is in crisis because too many library directors lack substance. How has this happened? This article will begin by answering this question. To do so, it develops a historical perspective on the current management environment in corporate libraries. This will receive considerable emphasis because relatively few professionals are aware of the profound nature of the changes that have occurred in late twentieth-century business libraries. Next, the article will discuss library science education and assess its strengths and weaknesses from the perspective of contemporary corporate library management. Since people become managers by doing management jobs, staff development issues will be pervasive.

THE RISE OF FINANCIAL MANAGEMENT

Between 1980 and 1990, corporate libraries changed dramatically. This change is the key to understanding the library management crisis and warrants a comparison of corporate libraries then and now. In 1980, corporate library management focused on human resources and library operations. Library managers hired quality staff and organized their work. Most library staff were reference librarians who found information for clients on demand. Expert reference work was the library's primary client service and this service was the hallmark of special libraries. Resource development activities were relatively less important because clients lacked time to use collections and adequate collection space was often scarce. Many first rate service-oriented corporate libraries had no catalog because the associated effort was deemed inappropriate to collection size. Libraries generally lacked advanced technology. However, telephones, wire machines, typewriters, copiers, and microfilm readers had been introduced over the years. But the large mainframe and minicomputer applications typical of the period were absent from all but the largest libraries serving major scientific research organizations with an exceptional level of systems orientation. Online databases were still relatively new. Few in number, they were perceived as supplemental sources to be searched at simple terminals by only the most highly experienced staff. Terminals were frequently located in dedicated rooms and sometimes behind locked doors. Overall, corporate library costs were low. When viewed as a percentage of corporate revenue, they were actually insignificant. This meant that financial management was not an important component of library management. The biggest expense in almost every library was for reference staff. Resource expense was usually quite small. Quite naturally, top librarians came from the reference ranks. And, while they prepared annual budgets, managers knew that if reference service was good and users were happy the budget would be approved.

By 1990, financial management had become a basic library management competency. Most employees were still highly proficient

reference librarians who found information on demand for clients. However, it was common for them to disperse hundreds of thousands of dollars annually in the normal course of making professional judgments. Resource management activities were highly automated and the more talented technical services people could independently develop and deliver information products directly to clients. Top corporate libraries had as many microcomputers as people. Overall, corporate library costs had increased substantially. Sometimes they were 1 percent to 2 percent of the sponsoring business units' revenue. This figure was astonishing given that MIS expense was usually 6 percent to 7 percent of revenue in information intensive industries (Erbschloe, 1992, p. 3). The library budget looked quite different, too. The salary line, to be sure, was bigger. Not only had the head count increased, but base salaries had grown at a rate greater than that of inflation—perhaps for the first time in the history of the profession. On the other hand, resource expense was now two to three times greater than salary expense. Resource managers with good analytical and systems skills now had strong backgrounds for top jobs. And although good reference service and satisfied customers were still the heart of the library, they would not make budget approval a foregone conclusion.

The more costly 1990 corporate library and the closely related importance of managing it financially were caused by the proliferation of information technology in corporations. Sometime after 1982, electronic databases, microcomputers, LANs, and third party applications unleashed unprecedented growth in corporate library expense. The new technology also tended to establish direct links among information use, resource expense, and associated staff time and skill level. This had a dramatic impact on corporate libraries and library management.

First, library staff work became measurable in an entirely new way because knowledgeable people could produce better results in less time at less cost than those with poor skills. Second, it became possible to quantify and evaluate source usage on a large scale easily and in a meaningful way. Previously, counting inspections of library resources to develop cost per use data were so burdensome that they were simply never deemed worth the effort. From a management perspective, that which is measurable is, by extension, controllable.

Increased library cost, plus improved ability to quantify time and expense, meant that library directors could reasonably be expected to analyze their operations fiscally and report their findings to management periodically; this process would become the substance of library management. Initially, most library directors did not recognize this fundamental development or appreciate its implications

for library management. Granted, managers focused on costs at the project level—cost per online search, for instance. However, few of them extrapolated library fiscal analyses demonstrating business impact from these incidentals. After all, the new technology permitted talented library staff to add much more value to research and, by extension, their companies. Some traditional functions, like literature searching, were so transformed as to be completely unrecognizable in terms of both speed and comprehensiveness. In some cases, there was demonstrable productivity improvement not only in the library but also in user areas as well. The application of Compustat to ratio analysis of companies, for example, permitted a skilled information intermediary to do in a morning what had previously taken teams of business analysts many days.

However, this type of productivity improvement—whether observable in the library staff or user ranks—almost never meant head count reduction because talented people used the new technically driven capabilities to expand their job functions by doing things which had never been done before, and management, most often, did not question this. Here, marketing also played an important role. Virtually all of the new technology was promoted—by both vendors and corporate information managers—on the basis that it would make companies more competitive and hence more successful. So long as business was good, management accepted this with relatively little proof and in many cases actively encouraged both the diffusion of information technology and the growth of many kinds of value added information services, including libraries. They also accepted sharply increased costs as the price of obtaining the “competitive edge.”

When business staggered in the late 1980s, this rationale was severely challenged. After all, some companies with very advanced technological infrastructures actually closed. Some companies with relatively weak technical platforms built upon older types of strengths—strong, high level client relationship management, for example—flourished. Clearly, there was no necessary link between technology spending and profitability. Top management did not abandon technology. Rather, they demanded that all information managers—including librarians—conceptualize and implement “next steps.” This involved scrutiny of all information-related costs and substantial fiscal analysis. Financial management was now a management expectation of library directors.

THE MATURATION OF THE INFORMATION INDUSTRY

The rise of financial management in corporate libraries coincided with the rise and maturation of the new electronic information

industry, a phenomenon which ultimately increased the importance of library fiscal management still further. To understand how this occurred, it is necessary to trace key industry developments which happened with amazing speed over a period of only ten years between 1978 and 1987. The electronic information industry is, of course, large, and different observers size and segment it quite differently. For the purposes of this discussion, the most useful segmentation is represented by Figure 1 (Arnold, personal communication, March 1990).

<p>Total = \$9.7B Market Value</p>
<p>Real Time Financial Data—\$4.9B Big Players—Reuters; Dow Jones; Quotron Participation is concentrated. Players own content and distribution capability.</p>
<p>Historic Financial and Market Data—\$3.5B Big Players—D&B; S&P; Donnelley Participation is less concentrated. Some players do not own content.</p>
<p>Text and Reference Products—\$1.3B Big Players—MDC; Dialog Participation is very diffuse. Content is owned by thousands of small players.</p>

Figure 1. Segmentation of the electronic information industry

A striking feature of the figure is the correspondence among the diffuse ownership of content, its specificity, and its intended market. Put another way, the information industry is a source business. Relatively few sources have really large markets with high ability to pay.

This electronic information industry structure is fundamentally very old, being derived from that of traditional reference publishing with which it shares profound social assumptions upon which an elaborate legal framework has been built. During the 1970s and early 1980s, the electronic information industry essentially put reference publishing in a solutions business by making reference data manipulable. New companies—value added resellers—grew rapidly, introducing literally thousands of products and defining market niches based upon software functionality, content, coverage, and complex pricing. However, this rapid growth was driven by the relatively few big-ticket products with large deep-pocket markets. This growth obscured the older market characteristics of sources to a significant degree.

By about 1986 (and again it is difficult to say precisely when), the electronic information industry had no more significant content to introduce, and content specificity became a structural business problem. Initially, of course, industry participants reacted by attempting to move beyond their historic niches. For example, vendors with precision software and abstract and index data loaded full text. Full-text vendors talked about improved indexing and added abstract and index files. At the same time, technical change permitted even small owners of specific content to distribute their own electronic value-added products via CD-ROM. One result was that the same data were suddenly available in numerous presentations which produced quite different results and which the vendors believed would penetrate new market segments.

Another development, which was not immediately apparent to them in those days, was the potential for price competition. With the recession, businesses began to deploy products tactically based upon price and functionality. Price competition became so intense that anyone of reasonable business maturity would fear for the viability of at least some vendors.

The maturation of the electronic information industry was now complete. Some signs of this—price competition and the small number of really new products—are obvious to anyone who attends trade shows or purchases products. However, others are not so aware of this maturation process. For example, some significant value-added resellers have been for sale for several years. And, after a ten-year focus on solutions, traditional scientific and technical textbook publishing may well be the most profitable and least risky part of the information business. For the industry, the lesson is the limits of the profit potential of technological innovation. Without significant new content, the old growth will be elusive.

For corporate libraries, the issue is a set of expectations based upon that rapid growth. Corporate library directors now spend significant time analyzing research activity, content, and arcane competing pricing schemes to achieve stable costs. They regularly change both their operations and suppliers in the process. They cost justify new services carefully. As for the companies as a whole, some major users of information products canceled 1992 advanced hardware purchases despite improved 1991 business results. Additional hardware systems are hard to come by without demonstrable cost savings.

LIBRARY MANAGEMENT BECOMES INFORMATION MANAGEMENT

Increased library costs, the rise of financial management in libraries, and fierce industry competition gave human resources and

operations management—the old staples of library management—new significance because these functions, if managed properly, could reduce resource expense sufficiently to have favorable impact on business results. However, actually achieving this kind of impact required that library management integrate fiscal, staffing, operations, and systems management functions to an unprecedented degree. This required exceptional analytical and communications ability.

Suppose, for example, that a company needed to reduce its very substantial subscriptions expense in the current fiscal year to maintain profitability in the face of declining revenue. Suppose, too, that a protean top management recognized the need to sustain expense for materials critical to the day's work. To serve the company well, the library would require staff with the analytical skills to assess the structure of firm-wide subscriptions data at the employee and business unit levels. A closely related success factor would be the ability to evaluate a suitable database management system and use it to develop and implement an application that would support analysis of real dollar cost reduction opportunities. Given the complexity of vendors, publications, and business terms implied by this problem, these analyses would be challenging ones. Furthermore, the findings would likely have significant publisher contract ramifications. To act on these, the library would need sophisticated publishing industry knowledge; strong high-level industry relationships; and solid negotiating skills. From an internal operations perspective, the new system could reasonably be expected to change workflow not only in the library but also in the accounting area and front line business units as well. This would imply the use of highly developed communication skills to secure other managers' confidence and cooperation. All of this would have to be done very quickly at the lowest possible cost while maintaining existing services. Throughout, the library would have to demonstrate the intellectual agility to develop new solutions to the familiar problem of serials management and the willingness to restructure itself and its staff to meet new business conditions, no matter how difficult that might be.

At this point, it is important to understand that corporate libraries were not the sole, or even the principal, areas to confront challenges of this type. There is much evidence to support this. Whole data centers were outsourced or sold. Others were downsized or decentralized. Systems support staff were cut back. Marketing, strategic planning, corporate communications, public affairs, legal, and other functional areas which used value-added information products not typically found in libraries sharply curtailed their information spending and still suffered subsequent staff reduction and even elimination. Thousands of professionals—many of whom

had built their careers, at least in part, around specialized information systems—lost their jobs.

EDUCATION AND PROFESSIONAL PRACTICE

It is a fair statement that overall corporate library management did not respond well to the challenges of the early 1990s. The clearest indication of this was, and continues to be, the profession's sense that top management's cost concerns are somehow unreasonable and directed at the library. Closely related is a preoccupation with information retrieval issues and relative lack of serious interest in the fiscal implications of information transfer and use. Fear of end-users, reservations about new distributed databases, and the anxieties about acceptance (which lie beneath the surface of the emphasis on image that has pervaded the Special Libraries Association for years now) are additional symptoms of deeper staff and management development problems. This situation is caused by a lack of substance in three broad areas—professional knowledge, analytical ability, and leadership. This has significant implications for not only education and subsequent professional development but also for corporate library management and the libraries themselves.

Professional knowledge required to manage a large corporate library has four basic components: (1) information retrieval and reference work, (2) library automation and technical services, (3) information science, and (4) information management. Information retrieval and reference work necessarily includes detailed knowledge of at least one body of sources but also involves a much broader understanding of how published information is created, priced, and incorporated into business research. Library automation and technical services imply not only the ability to create bibliographic data but to evaluate alternative development systems tools and construct successful project work plans. Information science suggests awareness of, and the ability to evaluate advances in, the application of technology to manipulating text. Information management implies knowledge of how to integrate human resources, operations, systems, and financial management processes to produce a quality cost-effective service. Overall, this is a potent body of knowledge. However, it is seriously undermined by the lack of attention to cost accounting and statistics. The relatively weak quantitative skills of most library students intensifies this problem. Another serious problem is the attempt to produce task-oriented people ready to do the first job in a specific setting. The fluidity of the settings themselves renders this tactic futile. Fluid situations clearly require individuals with the ability to use a core of professional knowledge—plus a strong sense of research approaches and methods—to solve basic problems and expand their knowledge base while doing so.

Analytical ability in corporate libraries is precisely the application of fundamental learning to solve what is essentially a single macro-level problem—managing client expectations with reference to the strengths and weaknesses of sources and delivery systems as well as their associated costs. This intellectual activity is the basic requirement of every library job. Naturally, the library staff's response to this problem can be more or less intricate depending upon the client's incidental requirement. Paraprofessional staff are required to solve defined problems by exercising judgment within sets of procedural guidelines. New professional staff are expected to resolve more complex problems by exercising judgment within a core of professional knowledge, supplemented by fewer simpler procedures and training. Staff with more experience are expected to develop complex work plans, estimate costs, and alert users to faulty approaches thus saving them time and money. These basic project management skills are the foundation of unit management. Consequently, at the supervisory level, good analytics permit professionals to integrate these project management skills with professional knowledge in order to judge which procedures, people, staff training, and project management systems create consistent quality services that can be delivered at an acceptable price.

Top jobs require financial judgments based upon integrated analyses of all library functions, which necessarily incorporate top management concerns, company objectives, and industry issues. The impact of potential misjudgments can be measured at every level. Given the increased costs of corporate libraries, the costs associated with misjudgments are substantial. Misjudgments at the top can result in one-time nonrecoverable errors costing literally hundreds of thousands of dollars. However, entry-level and paraprofessional staff misjudgments can have not only substantial cumulative impact but also surprisingly high costs on an individual basis. Annual cumulative error in the \$150,000 to \$300,000 range is not inconceivable given high work volumes. Individual and incidental misjudgments costing as much as \$15,000 can occur, too. In addition to cost, misjudgments can have extremely serious ethical implications and legal consequences, particularly in regulated industries. The same technology which increases resource expense and the ability to add value, also greatly accelerates the pace at which we work. This means that individuals are making judgments related to simultaneous requests in a real time, round-the-clock work environment. Added to this is pressure associated with client chargeback. In many settings, library time and expense is charged directly to clients. Clients, quite naturally

and correctly, expect not only accurate results but fair charges. Under these circumstances, library staff judgments are exposed in a way similar to those of professionals with direct client contact.

Relatively few library people are prepared to function this way. Many who try fail. Perhaps this situation is not surprising. Overall, the profession questions its impact—comparing its knowledge base and client influence unfavorably with accountancy, law, or medicine. Throughout this discussion runs a tacit desire for greater impact. Significant professional impact can only come from professional judgments which are recognized as significant. Unfortunately, library directors do relatively little to articulate the level of analytical ability and business outlook their staff require to make the kinds of judgments implicit in corporate library jobs. This is a very curious failing in a profession populated by individuals of above average native intelligence with a knowledge base that equips them to penetrate almost any problem.

We have seen that, from the perspective of analytical ability and judgment, the challenges confronting corporate library staff are different in magnitude from those faced by directors but that substantively are the same. In this context, those library directors who do choose to exercise leadership do so by strengthening staff awareness that they are on a career continuum which leads to a top job. They start by recruiting “A” players who want to excel. Subsequently, they support staff throughout this continuum with trenchant appraisals that isolate meaningful developmental needs; education and training; career counseling; plus raises and bonuses that recognize those who develop rapidly better than those who do excellent work but are content with the status quo. They also survey jobs periodically, seeking opportunities to introduce diverse job tasks and identify cross-training opportunities, thus giving staff a broader perspective on library operations. This staff development activity is the fundamental human resource process of the library.

Most library directors simply do not do this. The result is that it takes far too long to develop a small number of outstanding library managers. This is a very serious problem for the growth of the profession. Companies are always seeking managers with the analytical skills and knowledge base our education implies. To be sure, the assignment they contemplate may involve running what appears to be a small electronically oriented information utility of some kind which may not be called a “library.” Nevertheless, the fact that these units are usually positioned within revenue generating areas of companies with complex secondary research requirements means high potential to add value, large expenditures, and exceptional compensation. Anyone who has received a call from an executive

seeking to create a function like this—and these calls are frequent—knows that the viable candidates are too few. Most library professionals lack the required combination of source knowledge, system skill, analytical ability, communications skill, business interest, and drive. The pool of strong candidates is even smaller if the assignment is to take over an established library. This usually occurs in a troubled company that requires its library to be reworked to suit new business circumstances. And, of course, there are many troubled companies today. Assignments like this require not only exceptional analytics but also a willingness to make difficult decisions and take risks.

The usual explanations for this failure of leadership are many and raise sensitive social issues with deep roots in the history of the library profession which greatly influence the present. However, there is also an important explanation in the context of business itself. Put bluntly, the career continuum described earlier used to be optional in most large companies—it is not any more. As late as 1980, most large U.S. companies still offered lifetime employment, which top management viewed as a social responsibility. For the forty years after World War II, corporate employees enjoyed annual raises just above the inflation rate, strong benefits packages, and good job security. The “fast track” usually meant “paying your dues” while earning a series of modest internal promotions over a period of many years. Large twenty-five and thirty-five year service clubs abounded because almost no one left a company for a competing organization. Leaving an industry was practically unheard of. There were, of course, exceptions. Accounting, consultancy, and law were “up or out” businesses. Here the assumption was that employees would either become partners of the firm over a six- to ten-year period or seek opportunity elsewhere. In fact, those who were counseled to leave (or opted to leave) usually found secure and lucrative positions in the larger more static full employment companies with whose executives they had developed client relationships. And the “up or out” industries were comprised of relatively small firms with relatively few highly select people.

Open the human resources handbook in most companies today, and it will still suggest that staff retention is important. But even a cursory reading of layoff stories in the newspaper suggests that the full employment economy is in fact gone for many people for the foreseeable future. Companies still want to retain those staff who can develop new solutions to old problems; however, those who cannot (or will not) do this are, in fact, dispensable—at all levels. “Up or out”—once so unusual—has become a sort of de facto general practice, which intensifies during business slumps. A corollary is that

companies demand much more of the rank and file, pushing-decision making authority down into the organization while trimming middle management layers (Byrne, et al., 1988, pp. 80 ff). Given the fact that most corporate library directors have long tenure with one company and grew up in the old full employment days, it is not surprising that they do not understand or accept this "up or out" continuum of growth and movement for themselves or seek to develop library staff who are equipped to function within it.

The needs described here—financial skills, strong analytical ability, and leadership—will not go away because increased published data costs are a fact of life. Companies need published data to accomplish many kinds of client assignments and will pay well for it. However, they will also demand that data expense and cost of service be reasonable and defensible. They need and will reward people of sound judgment who produce accurate cost-effective client work. But they can no longer afford large numbers of people who depend on others to micro manage them. They will seek to retain staff—but only so long as they continue to grow and contribute more. The most successful and secure people will be those who excel by seeking opportunities to solve problems and learning from this experience. For better or worse, the corporate library is inextricably linked to this dynamic.

CHANGING THE EDUCATION

The halls of academe and corridors of public power are littered with the discarded recommendations of business people. There are two reasons for this. First, business people usually have no direct sustained exposure to the operations and pressures of the nonprofit arena. This leads them to recommend management methods which are successful in industry but may not work in the public and academic realms. It also causes them to expect results in unreasonable timeframes. On the other hand, nonprofit institutions sometimes encourage this. This occurs because boards and top administrative ranks often include people with business experience who believe that business management approaches will solve institutional problems. The institution's professional staffs, on the other hand, often have little business exposure and tend not to share this view. One result is business-oriented management studies, which are sponsored by the upper echelons and involve extensive participation by the institutions' professionals and outside business people. The tendency in these situations is for the executives to advance "solutions" which the institution's professional staff then demonstrate to have consequences inappropriate to their mission. That may, in fact, be true. Naturally, control is also at stake here. However, this process

masks that fact because it appears objective and permits all parties to fulfill their objectives. After all, the institution's administration is able to say that it has exercised its duty to probe the organization, looking for opportunities to make it operate more effectively and efficiently. The professional staff, on the other hand, are able to say that they were receptive to change but could find no way to improve the institution without violating its unique values. Everyone is able to claim that a consensus, based on those values, has been reaffirmed. And the institution goes on as before. Constructive evolutionary change is deferred. However, the problems which beset the organization may remain and even grow more vexing. After a sufficient period, they can sometimes cause management to take negative actions which are swift and appear unreasonable.

This article has many implications for education. None of these implications are comforting, given the history of the profession and its schools. All will be unpopular. However, they do not constitute a blueprint of any kind. Rather, they are illustrations of the kinds of changes which would strengthen the field over time. The best way to understand these changes is to examine some ancient dualisms—theoretical versus practical, core versus types of libraries, and active versus passive learning. These dualisms define an old debate about what library education should be. Events have made the debate obsolete.

The education must be theoretical. The profession should simply accept this. Universities are quite properly the temples of the intellect. Their unique role is to enrich bodies of theory by creating new increments of knowledge. As a result, university faculty are basically evaluated on the ideas they produce. Faculty who are not productive intellectually will always have a more difficult time obtaining institutional support than those who do substantive research. For the most part, what is substantive is defined by consensus among professional scholarly communities. This means that successful schools and their research will always be somewhat loosely linked to the world of work. This should be accepted as a good thing for corporate libraries, which badly need technical and managerial innovations but are not primarily in the business of creating the new intellectual constructs which precede innovation. It is foolish to expect universities to function like corporate training programs for the same reason that it would be unreasonable to expect corporate training units to function like universities. The schools will serve the profession best by being theoretical. In fact, they cannot serve it in any other way and survive. Many faculty, particularly those in outstanding universities, will fail if we pressure them to do otherwise and they relent.

The faculty and the field can, however, interact fruitfully with reference to the core professional knowledge of librarianship. This is because the core is rich with research hypotheses. In fact, the core,

driven by technology, has expanded in recent years. This article, for example, incorporates observations and reflections on a number of corporate libraries in diverse settings over fifteen years. In this sense, it is essentially a set of generalizations which could be made into hypotheses and subjected to the rigorous testing that characterizes good university research. Studies of the relationship of technology to costs—the cost impact of misjudgments, the related matter of liability, and the broader issue of professional impact; the maturation of the electronic information industry and its relationship to publishing, all of which are presented here—could conceivably yield new insights important to information management. Another hypothesis might be that academic, public, and school library management changes in ways similar to corporate library management once expense becomes some meaningful percentage of the host institution's budget. The core's amplexity is fortunate for the schools because, practically speaking, they are not large enough to do the excellent job of expanding the core that the universities demand and that the profession really requires, while sustaining the effort of training students for their first jobs in every conceivable setting in which they may work. Given the fact that so many of our best people choose library school after exposure to a particular type of library, the core's objective should be to integrate that experience into the broader issues that govern professional practice in various applications. The core should, in fact, be the education.

To make the core function as it should within the existing time and resource constraints (and it is not realistic to expect these to vanish), the schools will have to better integrate core components by emphasizing more rigorous and active learning. This does not imply either abandoning lectures or adopting vocationalism. However, it absolutely means that all activities should be explicitly related to fundamental core concepts. For example, basic cataloging, central to the profession, could be introduced using flexible microcomputer third-party text database management systems. This would permit faculty to simultaneously teach bibliographic control, reinforce the notion that the catalog is but one of many textual databases people may have the opportunity to create, and introduce the fundamental characteristics of at least one typical systems solution. It would also provide a foundation for broader subsequent discussion of data administration, software evaluation, project management, and systems thinking.

Similarly, reference work—also fundamental—should be made media interdependent and tied to research as a problem-solving activity. This suggests a case study approach. What follows is a business example. Students might be presented with a business

problem—should a bank establish operations in a given country? They would also be given major related topics—the political, social, and business climate in the host nation; other financial institutions already operating there; potential customer demographics; and so on. The students would be asked to specify which key sources they would select to help the user attack the problem and comment on the strengths and weaknesses of each using an established set of evaluative criteria—coverage, consistency, data integrity, timeliness, and cost, for example. Other cases could be developed for the humanities and social sciences; applied sciences; and perhaps law, medicine, and children's literature. It would be good to expose students to all the cases. The oral recitation of sources in lectures which characterizes many reference courses should be discarded. Instead, students might be given lists of these, instructed to study specific key characteristics, and tested on those. Those familiar with rigorous graduate programs in the humanities will recognize this approach to introducing the significance of large bodies of material in a short timeframe. This approach would expose students to the nature of rationalist inquiry—which explains so much of user behavior in libraries—and its impact on service, as well as the strengths and weaknesses of the various presentations of sources and related costs. It would also provide a foundation for the subsequent discussion of the structure of the industry segments which generate the secondary sources libraries use and determines their cost, the deeply imbedded social issues and legal framework which infuse that structure, and the library's unique place within it.

Management courses should build upon these components, which are critical to fiscal management, and integrate them with standard topics. Library automation could be discussed in terms of its impact on human resources, operations, and costs. The vendor pricing and contracting issues implicit in reference work could be incorporated in the broader context of financial control and budgeting. Government and business management environments should be compared dispassionately by faculty familiar with both.

In general, papers should be written only to develop analytical ability. This means that they should explore alternative potential solutions to meaningful problems and draw conclusions. The exploration of the professional literature, always integral to this process, needs to become the application of the literature to problem solving. This implies the intellectual activities of reading, generalizing, developing hypotheses, discarding those which are obviously false, and testing those which seem potentially valid. The ability to evaluate an article or book—placing it in the context of related works and assessing professional consensus about it using

footnotes, bibliographies, and reviews—is vital and should be made much more rigorous. However, mere description of what the literature says should be less important. Internships, particularly, should be better structured to develop the analytical ability both by integrating the knowledge components and developing crisp conclusive reports of the type that could reasonably support management decision making regarding significant problems. The keeping of internship diaries and other descriptive nonanalytic exercises should be abandoned.

Acceptance of theory, focus on the core, and an active integrated pedagogical approach should strengthen an awareness of the problems and opportunities different types of libraries have in common. The sense that different types of libraries confront fundamentally different management issues needs to be systematically reassessed from a top-down perspective. This is important not only because it is a valid research effort, but because it will improve the ability to attract excellent people. Dynamic committed individuals tend to require choices and mobility because they are motivated to develop an array of strong skills which will enable them to make new contributions in different settings at various stages of their careers. At present, we tend to restrict career choices via functional division of the field whose usefulness, from a broad management perspective, has not been rigorously tested for many years, if ever (M. E. D. Koenig, personal communication, October 1985). Anyone bright and ambitious enough to do a top corporate library job will sense this. They may look to other information-related areas, or they may take the first job only to leave the profession before they have matured, never having found the types of challenges and opportunities they really need. When these things occur, all libraries suffer.

Those of us with sustained exposure to even a few library schools, the students, and the field itself will recognize the many obstacles to this type of approach. For the schools, it implies not only reallocation of resources but also, in many cases, faculty with a different outlook, research interests, and skills. The nature of faculty governance makes this type of change slow at best and, in some cases, impossible. Deans will observe that this approach is difficult to administer. Many people, including some students, will complain that this approach is too sophisticated for individuals who have been exposed to libraries mostly as users and paraprofessionals. And many library managers will say they “do not have time” to develop the types of people this approach would tend to produce. More schools must take ownership of the intellectual issues imbedded in the core and confront the profession with them whether the field likes it or not. The students need a rigorous education if they are to reinvent

libraries and themselves over long and fruitful careers. Those who do not want to be challenged intellectually should seek opportunity elsewhere. Library managers need to make time for staff development. Practically speaking, they will have no choice. Not to do these things will mean an increasing lack of substantive library managers and an institutional inability to innovate which will limit the number of libraries, their fiscal support, and broader impact. Public administrators may wait for the profession to act but corporate executives will not.

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