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Frank H. Spaulding

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Introduction

In order to think about the future, a person needs two things: an imagination and a sense of time. This is true for any future, whether it is what you will do next weekend or what the world will be like in 3,000 years.

Imagination—or creativity, or visualization, if you prefer—is something that has been studied extensively. Sense of time, however, is an area where we are only beginning to gain understanding.

In 1986, the results of some studies were published in the New York Times. These studies demonstrated the links between different personality types and different attitudes toward time. (7) The studies showed that people who lack a sense of identity tend to emphasize the past. Those who have come to a sense of identity too easily, without sufficient struggle or crisis, tend to stress the future and ignore the past. The most mature individuals are those who have a balanced sense of time. They are, as one of the researchers said, “open to past experience and can use it to project what their lives will be like in the future.”

I would like to think that the library profession is mature and has earned a “sense of identity.” Although the title of this paper is “Special Librarian to Knowledge Counselor in the Year 2006,” I am not going to make pronouncements about the future. Instead, I am going to take a broader view, and, while I will get around to identifying things to come, I am going
to start by addressing some events from the past.

**Times Past and Future Impacts**

Let's consider four separate areas of the past: events and changes that occurred 550 years ago, 160 years ago, 80 years ago, and 40 years ago. At each point, an event occurred that helped to influence or create the world we, as information professionals, live in and work in today. Each of these events, if viewed from the proper perspective, affords us a window into the future.

Keep these dates in mind: 1437, the 1830s, 1907, and 1947. It is my hope that we can be like those mature individuals in the time study: open to past experiences and able to use them to project what our professional lives will be like in the future.

One other note while we're on the subject of dates. You may be wondering why I am talking about the role of the information specialist in the year 2006. In other words, what is so significant about 2006? Why not just the year 2000, or a rounded 20 years from today, 2008?

I have taken the date 2006 from a book by the Canadian futurist Robert Arnold Russel. Mr. Russel was the featured speaker at the 1985 Special Libraries Association's Conference. It was there that I got my first real exposure to his unique envisioning of what lies ahead. While our projected futures are far from identical, he and I share a similarity of method: realizing the revolutions that create the future by examining the revolutions of the past.

In his new book, *Winning the Future*, (2) Russel describes the time period we are living in now as being a phase of the Information Revolution, a revolution that began in 1950 and will continue until the arrival of the Information Age. His date that marks the beginning of the Information Age is 2006. Since much of my own thinking has been influenced by Mr. Russel's writings, I have used this date for the title of this paper, as a way of acknowledging my debt.

1437

We will discuss 2006 later. For now, let's look ahead . . . to the past. Our first stop is 1437. This was the year Gutenberg demonstrated success with his movable type printing press. Needless to say, this was an important year for librarians everywhere!

While there were books before Gutenberg (Gutenberg did not exactly invent printing—the first printed books were made by the Chinese in the ninth century), Gutenberg succeeded with a system using movable metal type. The history of the book is essentially the history of printing. In many ways, the history of Western Civilization started with the book. Printing gave permanence to otherwise fugitive ideas, and literacy—once the private preserve of church and aristocracy—spread to the masses and changed the nature of society.

Book production developed rapidly. By the 16th century, it was already quite sophisticated. In the 19th century, machines were used to replace the old manual processes. Subsequently, quality declined so much that it took a small revolution, led by William Morris, to restore the concept of beauty and craftsmanship to the debased and degraded trade of bookmaking. In recent years, the paperback has brought about another, different sort of revolution, and, since World War II, other media have begun to challenge the primacy of the book.

For the better part of the past 500 years, the book has been a source of knowledge, education, and entertainment. Its longevity is due at least in part to the simple fact that reading is pleasurable, in and of itself.

It was Jorge Luis Borges, a brilliant writer and also the director of the National Library of Argentina, who said:

Among the many inventions of man, the book, without a doubt, is the most astounding; all the others are extensions of our bodies. The telephone, for example, is the extension of our voice; the telescope and the microscope are extensions of our sight; the sword and the plow are ex-
tensions of our arms. Only the book is an extension of our imagination and memory. (3)

The year 1987 was decreed as the Year of the Book. As we celebrated this event, we recognized that although the book would never become extinct or an antiquarian obsolescence, it would be augmented by other media.

When the poet James Dickey was discussing electronic technologies for preserving literature, he said: “The concentration ought to be on words. Words galvanize and energize the imagination. They have a miraculous power to call up images to the mind.” (4)

But not even the most imaginative of Gutenberg’s contemporaries could have foreseen the extent to which the movable type printing press would revolutionize the world. Still, while they may not have been able to predict or anticipate the future, it is possible that some of his peers were able to keep their minds open and their expectations flexible, and thus meet the future in an active, growing mode.

In every age, there are people who are able to somehow extrapolate the promise of something today into the reality of something tomorrow—just as in every age there are always those who resist change, who remain tied to the past and end up being imprisoned by it.

Imagine, just for a moment, that you are transported back in time to Mainz in 1437. Think how helpful you could be—not only to Gutenberg and the nascent art of printing, but to the whole world! Printers may not comprehend a lot of what you try to tell them, but they will certainly find your encouragement inspiring. They’ll begin to look at themselves and their work in a new way, and they’ll begin to work to reel in the future as fast as they can.

Isn’t that the sort of attitude we librarians need to have today? Don’t we need to be out on the cutting edge and, by our example, lessening the apprehension that our users and clients have about the world to come?

This, then, is what I hope we gain from looking back to 1437. I hope it keeps us mindful of the origins of what we do and aware of the rich history and traditions we have inherited. But I also hope we are cautioned against becoming too tied to those traditions; in other words, we need to keep our eyes open and our minds flexible in the face of change.

1947

Now, let us imagine today in the year 2006. Suddenly a time warp occurs and you find yourself thrust back to 1988. Not such a big deal, you say to yourself; after all, going back in time to 1437 was a span of 550 years, from 2006 to 1988 is only 18 years. I believe these two leaps are more alike than they may appear to be at first. The latter part of the 15th century was a time of upheaval and technological revolution—so too is the latter half of the 20th century. We are in the midst of a revolution that may prove to be just as dramatic a shift in the course of civilization as Gutenberg’s “revolution.”

This brings us to another one of the time periods I mentioned earlier. The year is 1947, and the location is Bell Laboratories in New Jersey. There and then a very significant event occurred. An event that would change the world in ways we still have not grasped. In 1947, John Bardeen, Walter Brattain, and William Shockley completed the work that won them the Nobel Prize; they invented the transistor, making possible, among other things, the modern computer.

Obviously, there were computers in evidence long before 1947. The actual invention of the computer, in 1834, is credited to an English mathematician named Charles Babbage. But the invention of the transistor enabled computers to become exponentially smaller, faster, more powerful, more energy-efficient, and less expensive.

The computer has already had an impact on our lives—not just as information professionals, but as human beings. Computers are now commonplace. I am certain that no other single development
has had such an impact on human endeavors in such a brief period of time.

While we have been quick to adopt certain aspects of this new technology, there remains, for many of us, a fundamental fear or uncertainty: will the computer put us out of work? The apprehension is not hard to understand. The computer is not like most other inventions. It falls into the category of revolutionary advances, along with printing and the few other discoveries that deform conventions and shatter precedents. As has been pointed out elsewhere, the computer is not simply "another tool," but a "preemptive technology," one that inevitably supersedes its predecessors. But the acceptance and presence of computers (and computer-based technologies) in our work changes more than just the work itself. It also changes the ways we interact with our clients and users.

In terms of the specific changes that we are likely to see, I expect voice recognition to be fully integrated into our work within the next 10 years—much sooner than most people anticipate. And, by the late 1990s, artificial intelligence will find its way into our daily professional lives. Artificial intelligence will arrive in the form of systems capable of making free, but meaningful, associations, of treating multiple concepts in parallel sequence, all processed with exceptional speed. The only "binding constraint" will be the limit of being operated by mere humans.

There is a reasonable possibility that such "expert systems," self-instructional and loaded onto powerful personal computers, could make "do-it-yourself" database searching a much more practical alternative for those who depend on our search services today. However, I do not think it will really happen that way. As the library consultant Allen Veaner has pointed out, an independent user today faces two problems in doing his or her own database searching: 1) the "formidable technical difficulties" of conducting searches, and 2) the "severe financial penalties for inexperience and incompetence." (5) Even if both of those drawbacks are ameliorated, that still does not address what I see as the basic issue: end users don't really want to do their own searching, especially non-textual, complex searching. What they want are not more documents or data, but the analysis of what is available, an analysis that enables them to decide if what they are getting contains anything germane to the solution of their present problem.

The notion of the end user as maintaining direct contact with sources is a chimera. It is the information professional who will assume the crucial role of information intermediary and analyst between the end user and his or her sources. It is a role whose pivotal importance can only increase, with new and farther-reaching ramifications, as the mass of information continues to swell, while at the same time fracturing into ever-smaller particles. As the noted futurist Alvin Toffler has observed:

The information we now get gives us only fragmentary pictures of the world. Synthesis of these fragments is the major intellectual and managerial task of our time. My dream newspaper of the future would not carry 'all the news that's fit to print' but 'only the news I need to know.' It would have 10 stories on page one and one story showing how the 10 connect. (6)

On the horizon are databases that would contain just such information—analyzed, interrelated information of the sort especially necessary for business and economics. If such tools seem formidable and forbidding to us, imagine how confusing and confounding they will appear to our clients and users. Our profession will have the challenge and opportunity to tame the new technologies and put them to work for the greatest benefit.

This, then, is what I hope we gain from looking back to 1947—a reminder that we are living and working in a time of tremendous technological upheaval, where changes occur with astonishing rapidity and, as special librarians, where the changes are not confined to storage and retrieval methodologies, but extend to and alter the ways we serve our users. But this outlook is not entirely satisfac-
tory, or sufficient. It gives rise to a conception of our role that is far too narrow.

I suspect we can all conjure up the same image—one that has become commonplace in advertising and elsewhere—of a solitary figure seated at a computer terminal, typing on the keyboard, with the underlying idea being that the computer is the individual’s conduit into the world of information. One needs only a PC and a modem, plus perhaps a little training, to move full speed into the Information Age. A user types a request into the terminal and it appears on a screen in your office. You conduct an online search and the requested information is transmitted back to the user.

The point here is that the way the technology has been presented tends to reinforce an atomistic outlook. I interact with my terminal, you interact with yours, and our terminals interact with each other. What gets lost is the sense of the “big picture.”

Erik Sandberg-Diment pointed this out in one of his columns for the New York Times, where he observed:

A lamentable byproduct of today’s information glut is a narrowing of vision. At first glance, such a consequence seems quite the opposite of what one would expect. More information should presumably present more opportunities for broader vision and understanding. Yet the sheer volume of the data amassed makes almost inevitable the reduction of our focus to what is in the end a very narrow endeavor . . . This narrowing of vision may be a necessary condition of survival and progress in the face of the mass of information with which we are besieged . . . but if we are to retain any kind of perspective on the role of humankind in the future, we must sometimes stand back and view the landscape, not merely a tree. (7)

1830s

In 1986, Dick Rutan and Jeana Yeager took off in a strange-looking plane named “Voyager,” and set a new record for long-distance flight. It was while Voyager was in the air that I came to a realization: I found I was surprised at how long the trip was taking.

All they were doing was flying around the world, once. Why should it have to take days and days—nine days, in all? Isn’t it the sort of thing that should only take hours? Doesn’t the Concorde fly from Paris to New York in just under four hours? Admittedly, the little Voyager, flying at a top speed of 120 miles per hour, is not in quite the same category as the thousand-mile-an-hour Concorde . . . much less an orbiting space shuttle. But really, Voyager only flew 25,000 miles. Doesn’t it seem like it should have been accomplished this in a more timely fashion?

Our planet has shrunk. What was once inconceivably large—so large that for thousands of years its exact shape was unknown—is now a little sphere whose circumnavigation can cause impatience rather than awe.

Let’s go back to the 1830s. It was just around this time that the world, which had already been shrinking for quite a while, suddenly began to shrink much more, much faster. A real quantum change in the size of the earth was taking place, a change that has carried through to today. The change occurred earlier in some places, a little later in others, but it was centered around the 1830s. And what’s more, for the first time, some observers comprehended the change and saw its potential ramifications while it was happening.

It was in the 1830s that the railroad became successful in America, and it was the advent and success of the train, in spanning the breadth of a continent, that signalled this new stage in the shrinking of the globe—from the railroad to the airplane . . . to the jet . . . to the rocket . . . from the telegraph to the wireless . . . to the telephone . . . to the facsimile and satellite. The distances are all shorter, the transmission times less. This is a tiny planet we live on, and we share it with five billion other people.

The shrinking world necessitates a
broadened outlook. I hope we will see an ever-increasing level of international cooperation and sharing of information resources, a blossoming of global networks. In the manufacturing industries, as well as others, the strategic planners have already begun (or in some instances finished) shifting their companies to a global orientation. Services must not lag behind.

And, because so many of those five billion people are so severely disadvantaged, when compared to the standard of living some enjoy today, the shrinking world also necessitates a heightened sense of social responsibility.

One of the most equitable remedies, for an inequitable economic imbalance, is the use of information as a tool. But we have to start at the level of basic competencies—for instance, in the area of worldwide literacy. I am sure it will be our old friend the book that is the primary medium for extending literacy, not the computer nor video transmission.

But technology will have its role to play. In addition to the advances I have already mentioned—voice recognition, artificial intelligence, data banks of analyzed information—there is renewed movement toward the creation of sophisticated computerized translation systems. The complexities involved are staggering. There are between three and four thousand different “speech communities” in the world today; there are about 180 different languages spoken by at least one million people; there are 12 languages spoken by at least 50 million people. Still, I look forward to the success of computerized translation systems, because the enhanced levels of global outreach and communication it would help to bring about are desperately needed.

This, then, is what I hope we gain from looking back to the 1830s—the sense that we are all part of a larger picture. What we do is not, and must not be, confined to parochial attitudes and narrow relationships. We must be global in our outlook and socially responsible in our actions.

1907

In my introduction I mentioned four time periods and asked you to keep them in mind. I talked about 1437 and the advent of Gutenberg’s movable type printing press. I talked about the discovery of the transistor and the computer age it helped make possible. I also talked about the railroad and the final stages of the shrinking of the world.

From 1437, I suggested that we remain mindful of our origins, but also flexible in the face of change. From 1947, I suggested that we are living in the midst of tremendous technological upheaval, and that the changes engendered are deeper and more ramified than we tend to assume. From the 1830s, I suggested that we keep our heads up, for the changes we are seeing require us to adopt a global perspective and to become more socially responsible.

Now I come to 1907—a time when John Cotton Dana, the first president of Special Libraries Association, gave us the absolute best prescription for librarians getting ready to deal with the future:

I have not attempted to say definitely how the librarian of the future will adapt his practice to the new conditions. I have tried only to make it quite clear that the wise librarian will keep his mental manners plastic and his professional methods flexible... After an enthusiasm born of love of the calling, the one most essential attribute of the librarian, if he would be forever helpful and never an obstacle, is a profound belief that the end is not yet, that new conditions arise daily and that they can be wisely met only after a confession of ignorance, a surrender of all doctrine, and careful and unprejudiced observations. (8)

The intervening 80 years have not altered the truth of that statement one bit. Confessing ignorance is the easy part. Surrendering doctrine is much harder. And making careful and unprejudiced observations is just as hard. But here are some observations about the future.

One thing is reasonably certain. By the year 2006, we will be out of the jobs you
and I recognize today. It won't be new technologies that determine our futures. It will be society, and the changing needs of a changing society, that will create and support the librarians and information specialists of the future. For while the jobs we do may change, radically and constantly, they will change only in form, not in function. Our reason for being, our spark, will always remain: We do what we do, whatever that may be, in order to optimize the access to and use of information.

And we say it over and over again: "Information is not an end unto itself." As Allen Veaner has so nicely put it, "Information and knowledge are spiritual relationships among humans, mental constructs that exist in the mind—not as marks on paper or bits on disks." (9)

The special librarian of today can be the Knowledge Counselor of tomorrow. Compared to most of what we do today, the work of the Knowledge Counselor will be much more intellectual, requiring much more skill at selecting, analyzing, and synthesizing information. It will be broader, and it will be more rewarding to society.

As Knowledge Counselors, we have two roles to play in the future: first, there is our role in the changing world, and, second, our role in changing the world. By the year 2006, a Knowledge Counselor will see both as being of equal importance.

The changing world of today becomes even more challenging tomorrow. We face an uncertain future. The quiet economic revolution is becoming louder. If the gloomiest predictions are going to come true, then our society faces a future of significantly downgraded expectations. Some observers believe the standard of living we enjoy today is already resting on fragile pilings; if it collapses, our children may look at the way we lived and played with considerable envy and resentment.

A question recently asked of the business management consultant Peter Drucker was: "What will the future be in the knowledge-based society for the man or woman who toils in an automobile plant today?" His answer was: "He or she won't be there. What is no longer possible is that a worker will make an upper-middle class living except through knowledge." (10)

Unfortunately, we are likely to see a wider gulf between those who can afford information and those who can not. If information and information access are exploited the same way other resources have been exploited, what little cooperation now exists will be replaced by protectionism and monopoly. The concept of marginal utility will restrict resources; the motive for profit will seize the opportunity to escalate fees. The next few years may bring about the creation of a new class of the underprivileged: the "information poor." We must be the advocates for these people, to see that they are not left by the wayside, and continue as before to stress that there must be equal access to a maximal amount of information.

We will train end users to do as much of their research as they want to do. For us to do otherwise would be hypocritical if we are serious about stressing access to information. This is only one instance of where our roles will become more consultative and less functionary, because rather than doing the research for an end user, we will be helping to meet the user's needs through a variety of means—consulting, analyzing, and working more in a kind of partnership than any other sort of relationship. We will do much more training, and the training will be focused on accessing information on a global basis.

The Knowledge Counselor will be someone with well-grounded and constantly improving skills, who understands the needs and strategic goals of his or her organization in a far more involved and fundamental way than we do today. The Knowledge Counselor will constantly be on the lookout for ways to work smarter, as opposed to working harder.
In order to prepare for the future, we will have to change the way the members of our profession are trained. The traditional library schools have tended to be too narrow, both in their conception of the broad knowledge discipline and in their application of information technology. The tendency has been to adopt and use technology only to access information. Now we must begin to take a more inclusive view, to look to technology for analysis, synthesis, and transmittal, as well as a host of other functions.

The schools have to change the way they think about what they teach; the discipline has to provide knowledge competencies in the fields of business and information systems, as well as information management. The schools must broaden to become international in scope, emphasizing the “global implications of knowledge.”

Moreover, the information industry associations have been guilty of parochialism over the last 40 years. We now have various “camps” of information professionals, and this will have to change. We will have to have an emphasis on coalitions and partnerships. One of the major partnerships that we should strive for is one between business and the nonprofit sector, for at least two reasons: 1) the economic efficiencies that could be realized, and 2) the synergistic results that would be otherwise unattainable.

Now, in this future of altered outlooks and increased pressures, how have we changed? The special librarians of today . . . the Knowledge Counselors of tomorrow.

The Knowledge Counselor evolves from being a specialist to being a generalist with stress on three parts or aspects: awareness of information, awareness of technology and business constructs, and awareness of needs. And this is where it all comes together, because the keys to these three aspects are all found in the past:

- from looking at Gutenberg’s time we are reminded of our traditions and the need to stay flexible and open—awareness of information;
- from looking at the invention of the transistor and remembering the extensiveness of the revolution Gutenberg brought about, we are reminded of our own position in the midst of a revolution—awareness of technology;
- from focusing on the shrinking globe, we are reminded that our outlook must be broad, that we must address concerns of a global, economic, and socially relevant nature—awareness of needs.

With this three-part awareness, we will be in a position to succeed in the changing world and perhaps even to succeed in changing the world. An awareness of information gives us a breadth of vision; an awareness of technology gives us the power to make our visions manifest; and an awareness of needs gives us the insight to use our skills and talents to the greatest effect.

In the final analysis, the real question is: What can we do to be of more value to mankind? And what can we do for the betterment of the human race? We should not make the mistake of confusing value and improvement. The work we do now is valuable. The point is, how can we not only become more involved—hence, more valuable—but also perform in such a way that we help to elevate the state of mankind?

References

8. Genesen, Judy, and David E. King, eds. “John Cotton Dana: Anticipations or

Frank H. Spaulding is a library consultant and a past president of Special Libraries Association.
Managing in an Information-Rich Environment:
Applying Information Transfer Theory to Information Systems Management
Herbert K. Achleitner
Robert Grover

This project investigated information transfer patterns in a department of a major corporation. Four data-gathering methodologies were employed: structured observations, unstructured observations, interviews, and content analysis. Results substantiated the theory that information transfer among managers and information workers was influenced by an individual's role, organizational structure, access to internal/external information, corporate product, and corporate culture. It was found that oral communication predominated (usually within a network of trusted sources which circumvented the organizational hierarchy), and that managers had an educational role and needed greater access to external/internal information. Enterprises need to evaluate management structure and assign managers to information brokerage positions in order to accommodate more efficient information flow. Enterprises should create the position of Chief Information Officer (CIO) to plan, coordinate, and evaluate information systems.

Introduction

MANAGEMENT consultants, such as Naisbitt (1) and Drucker (2), have emphasized the need to consider information as a strategic resource that contributes to the profitability of any marketable commodity. A critical question for the survival of enterprises is whether the traditional management structure enhances or maximizes information flow for decision making. Therefore, the structure of an organization should be designed to fa-
cilitate the information transfer process as well as the production process.

An information management system must synthesize, package, and disseminate information to various levels of corporate management, i.e., strategic, tactical, and operational. The information management system must provide for internally produced and externally derived information in the appropriate "mix."

The thesis of this article is that the rapid evolution in enterprises imposed by the Information Age is shifting information transfer patterns within an enterprise. Therefore, significant rethinking of the corporate organization's information systems may be required for efficient decision making.

The Problem

Management and information systems literature has recognized the need to re-conceptualize the design of information systems. For example, Brinberg (3) proposed a new people-centered paradigm for information systems, recognizing that hardware-oriented systems lack sensitivity to human information processing styles. Rockart (4) criticized management information systems which have failed to incorporate internal and external information needed by top-level management. Drucker (5) recently recognized the democratic flow of information, noting the authoritarian corporate structure and the ubiquitous flow of information. Drucker's key point is that an information-intensive environment should be structured so that management can take advantage of the clustering of information. Elliott Jaques (6) concluded that levels of control are not meaningful for structuring an organization in an Information Age, but rather the time span is the key indicator for formatting needed information. The capacity of the manager for processing information is directly related to effective planning described by Jaques' (7) levels of management in terms of time span of control; levels of work are differentiated by the amount of time required in accomplishing a task—three months, 1 year, 2 years, 5 years, or 10 years. It is apparent that there is a relationship between time span and amount of ambiguity with which a manager must work. For best results, there should be a match between a manager's ability to cope with ambiguity (thinking style) and level of management. An understanding of managers' ability to process information appears to be reinforced by the work of Weick.

Essential to understanding the design of corporate information systems is the decision-making process. Weick has described this process as "adverbial and operates in the service of action." (8) Contrary to many studies of managerial behavior, which conclude that managers act thoughtfully but spend no time thinking, Weick found that managers think while they are acting and do not necessarily engage in thinking isolated from those actions associated with management work. He also stated that managers' thought processes are eclectic, in contrast to scientific, rational, and linear modes. Studies by Hale (9) and Grover and Glazier (10) have indicated that managers in the public sector spend a majority of their time in oral communication activities; Mintzberg's (11) study of private sector managers found a similar pattern of communication. These studies suggest that managers are engaged in thinking, including decision making, while talking with colleagues. These authors have formulated concepts linking managers' cognitive and information-processing styles with the requirements of management planning. The challenge for information systems design is to understand human information processing.

Research Design

Currently, information management systems often are driven by hardware and software, rather than decision-making needs of management. Instead, an applied theory for designing an information management system to increase the enterprise's productivity and responsive-
ness to rapidly changing economic conditions is needed. This case study proposed and tested a theory of information transfer within a private sector enterprise.

Greer’s theory of information transfer states that individuals, as members of role groups within society, have discernible and unique patterns for the creation, production, dissemination, organization, diffusion, and use of information, which is further influenced by external societal variables, such as environment, culture, economics, and policy. (12,13)

Greer defined information transfer as “that part of the communication process wherein the message is recorded and received by one or more individuals.” (14) This definition embodies elements of sociology of knowledge, which recognize that societal groups construct a shared image of the world, including values as expressed in a particular culture, as well as common beliefs, possessions, history, etc. (15,16) This shared construction of reality plays a fundamental role in the social processes of information creation, dissemination, production, diffusion, and use. (17,18)

On the basis of this conceptualization of the information transfer process, the following research questions for this case study were formulated.

1. In what way does level of management influence (a) the mix of internal and external information, (b) format of information, and (c) quantity of information needed?
2. What is the format of information exchanged by various levels of management?
3. Is there a relationship between quantity of information needed and level of management, i.e., which level of management requires the most internal or external information?
4. To what extent does corporate culture influence the creation, production, organization, dissemination, diffusion, and utilization of information?

Given the complexity of managerial thinking and information use described, several methods of data gathering were used to assure triangulation as recommended for social science research by Hammersley. (19) The methods employed were open-ended interviews, structured observations, content analysis of recorded information produced and used by managers, and unstructured observations of work areas. While interviews were the major source of information, observations verified and augmented interview results.

A specific division within a major defense/commercial contractor was the subject for our study. Within that division, the study focused on the finance department, a natural center for the company’s information flow, encompassing such functions as proposal development, cost estimation, accounting, and pricing.

The interviews were structured using a schedule of questions which sought to identify awareness of information needs, strategies for search, behaviors in search, evaluation, processing styles, and utilization of information.

Twenty-two individuals were interviewed: 10 managers at three levels in the department’s hierarchy, two secretaries, eight information workers, (20) one externally assigned monitor, and one librarian. The 10 managers included one strategic level, four midlevel, and five operational level. Therefore, study of this single department enabled the researchers to test an information transfer theory in a unit critical to the corporation’s information transfer process. Because qualitative research allows for use of small theoretical sample, the 10 managers provided a sufficient sample for this case study. (21)

Five managers were observed one-half day each. Structured observations used a log that displayed categories for data collection: subject name, time, type of activity, sender, receiver, format of communication, issue, purpose of communication, and place of subject’s transaction.

Pertinent documents identified during
Interviews and observations were studied to amplify and corroborate findings of interviews and observations. Included were examples of information in online systems, in-basket correspondence, library holdings, corporate manuals, and items in managers’ office collections.

Unstructured observations were conducted at various times during the study. During the initial stages, a tour of the production and office areas provided a perspective of the work environment and the relationship of the finance department to other units of the division. In the process of collecting data, additional information systems, such as a correspondence control system and a specialized library, were identified and observed in operation.

**Results**

Results of the study are arranged according to the following scheme: general trends, formal and informal information transfer patterns, role of managers, management style, and general problems.

**General Trends**

Oral communication was the predominant format for information transfer among the corporate managers. All 10 of the managers interviewed identified people as the sources of information for their work. Likewise, structured observation results indicated that 91.9 percent of the managers’ work time was spent in oral communication (see table 1). People were major sources of data, procedural information, interpretive information, source (who to see) information, current information, and some external information.

A summary of oral information transfer patterns is found in table 2. Operational-level managers spent two-thirds of their oral communication time (66.8 percent) receiving messages and one-third of their time (33.2 percent) sending. A further analysis shows that operational-level managers received no messages from strategic-level managers, but they spent approximately the same amount of time receiving messages from tactical-level managers (26.8 percent) and from operational-level peers (27.6 percent); operational-level managers received little information from their staffs (12.4 percent). An examination of the sending patterns revealed that managers spent the greatest amount of time (20 percent) sending information to information workers; 12 percent of their time was spent sending information to operational-level management colleagues.

Structured observation indicated that operational-level managers were focal points in the information transfer process. They spent the majority of their time receiving information—primarily, from other managers and, to a lesser extent, from information workers. Operational-level managers sent information to information workers and other operational-level managers.

Interviews indicated that 11.8 percent of information received by information workers was unrecorded. Operational-level managers, however, estimated that 32.5 percent of the information they received was unrecorded. Information workers said that 59.2 percent of their information sent was unrecorded; operational-level managers reported that 52 percent of the information they sent was unrecorded.

Of the 18 staff members interviewed, 4 indicated a need for more external information. Observations revealed no evidence of information workers or managers using information generated externally to the corporate division. However, the tasks of information workers determined the amount of external information used, e.g., a worker assigned to negotiation with sub-contractors reported 50 percent of the information sent was externally derived, while most workers reported they neither received nor sent information derived from external sources (see table 3).

Table 4 reports the frequency of issues addressed by managers and information workers. Task-related information dominated daily activities, i.e., procedures, meeting objectives, and problem solving.
### Table 1. Managers' Work Time

<table>
<thead>
<tr>
<th>Activity</th>
<th>MANAGERS</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min.</td>
<td>%</td>
<td>Min.</td>
<td>%</td>
<td>Min.</td>
<td>%</td>
<td>Min.</td>
<td>%</td>
<td>Min.</td>
</tr>
<tr>
<td>Telephone</td>
<td>26</td>
<td>10.4</td>
<td>26</td>
<td>14.5</td>
<td>0</td>
<td>0</td>
<td>36</td>
<td>20.7</td>
<td>88</td>
</tr>
<tr>
<td>Scheduled meetings</td>
<td>166</td>
<td>66.4</td>
<td>56</td>
<td>31.3</td>
<td>101</td>
<td>100</td>
<td>113</td>
<td>64.9</td>
<td>243</td>
</tr>
<tr>
<td>Unscheduled meetings</td>
<td>41</td>
<td>16.4</td>
<td>81</td>
<td>54.3</td>
<td>0</td>
<td>0</td>
<td>18</td>
<td>10.4</td>
<td>46</td>
</tr>
<tr>
<td>Tours/inspection</td>
<td>5</td>
<td>2.0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>4.0</td>
<td>21</td>
</tr>
<tr>
<td>Desk work</td>
<td>12</td>
<td>4.8</td>
<td>16</td>
<td>8.9</td>
<td>0</td>
<td>0</td>
<td>18</td>
<td>10.4</td>
<td>46</td>
</tr>
<tr>
<td>TOTAL</td>
<td>250</td>
<td>100.0</td>
<td>179</td>
<td>100.0</td>
<td>101</td>
<td>100.0</td>
<td>122</td>
<td>100.0</td>
<td>174</td>
</tr>
</tbody>
</table>

* Manager D was observed on two occasions as a reliability check. (Oral = 91.9%)

### Table 2. Information Transfer Patterns of Operational-level Managers

<table>
<thead>
<tr>
<th>Level of Management</th>
<th>Strategic</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Min.</td>
<td>% time</td>
<td>Frequency</td>
<td>Min.</td>
<td>% time</td>
<td>Frequency</td>
<td>Min.</td>
<td>% time</td>
<td>Frequency</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>9</td>
<td>1.2</td>
<td>36</td>
<td>12.0</td>
<td>24</td>
<td>146</td>
</tr>
<tr>
<td>Receiver from</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>44</td>
<td>196</td>
<td>26.8</td>
<td>43</td>
<td>27.6</td>
<td>12</td>
<td>91</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>52</td>
<td>205</td>
<td>28.0</td>
<td>79</td>
<td>39.6</td>
<td>36</td>
<td>237</td>
</tr>
</tbody>
</table>
Table 3. Internal and External Information Received

<table>
<thead>
<tr>
<th>By Operational Managers</th>
<th>Internal (%)</th>
<th>External (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td># 1</td>
<td>99</td>
<td>1</td>
</tr>
<tr>
<td># 2</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td># 3</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td># 4</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td># 5</td>
<td>95</td>
<td>5</td>
</tr>
<tr>
<td># 6</td>
<td>85</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>529</td>
<td>70</td>
</tr>
<tr>
<td>Mean</td>
<td>88.16</td>
<td>11.66</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>By Information Workers</th>
<th>Internal (%)</th>
<th>External (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td># 1</td>
<td>99</td>
<td>1</td>
</tr>
<tr>
<td># 2</td>
<td>75</td>
<td>25</td>
</tr>
<tr>
<td># 3</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>254</td>
<td>46</td>
</tr>
<tr>
<td>Mean</td>
<td>84.6</td>
<td>15.3</td>
</tr>
</tbody>
</table>

The managers addressed 177 issues during 826 minutes of observations, spending an average of 4.7 minutes on each issue. In other words, managers addressed 13 issues per hour.

**Formal Information Transfer Patterns**

A person's position in the organization influenced his information needs and characteristics of information produced. Interviews and structured observations indicated that information workers' job assignments influenced quantity, format, turnaround time, and quality of information. More importantly, individual managers imposed specific packaging requirements. Although procedure manuals had been developed to systematize content and the process of assembling information, individual managers, because of time constraints and management style, required quick turnaround time and encouraged bypassing established information-gathering procedures. In addition, managers issued oral directives, which required the receiver's interpretation. Consequently, a filtering process occurred and leakage resulted.

Communication patterns generally followed the organization's hierarchy. Most communication was lateral and downward; upward communication was solicited from above and sometimes bypassed one or more levels of management. Skipping levels of the hierarchy apparently caused communication problems and leakage of information; also it appeared that the multi-layered structure of the organization inhibited information flow.

**Informal Information Transfer Patterns**

Because 91.9 percent of the communication among managers and information workers was oral, an informal pat-
tern of communication existed. Information workers requested information from trusted human sources 1) at the same or lower levels in the organization's hierarchy, and 2) from sources in other organizational units within the enterprise. This informal network based on trust limited the amount of information used in decision making.

Role of Managers

The project results indicated that managers were generalists who fulfilled a role as educators of persons they supervised because they possessed a general knowledge of information production in the enterprise. They had exposure to a mix of external information juxtaposed with internal information, e.g., enterprise goals and objectives, government regulation, and societal issues affecting decisions made. With information workers, their educational role included teaching how to analyze and synthesize data and information. Managers taught their staff the process and criteria for packaging information; manuals only taught the process. That is to say, managers taught how to analyze and synthesize, as well as how to gather information.

Management Style

Individual managers had their unique requirements for information dependent upon their management styles, e.g., quantity, speed of retrieval, currency, accuracy, and amount of analysis and synthesis.

Our research revealed two distinct management styles: a directive style and a more collegial style that encouraged communication and analysis. Interviews indicated that these styles emerged as a result of the historical development of this corporate site, which was originally established to only manufacture a product without responsibility for corporate research, planning, product development, and marketing. A directive management style and organization structure focused on production, de-emphasizing a holistic view for strategic planning. Although the finance department studied did not adopt a management style that encouraged holistic thinking and problem solving, managers who had transferred from corporate headquarters, which encouraged the holistic approach, practiced a collegial management style as part of that corporate culture.

As a result, two distinct management styles, reflecting two corporate cultures, were identified. These divergent management styles had a considerable effect on information transfer characteristics, affecting such processes as packaging, dissemination, and utilization of information. Managers tended to recruit and hire subordinates who could function within the managers' management style. Consequently, the networks of "trusted" sources were not open to members of a conflicting corporate culture.

General Problems

In addition to the findings described above, the following problems in information flow were identified:

1. Managers and information workers expressed frustration with their ability to retrieve information from people, computerized databases, and recorded information sources. Retrieval of information from human sources was limited by the informal and often inadequate networks; expansion of informal networks was haphazard and generally unsupervised by management. Since computerized databases had been developed to meet a specific clientele, retrieval for purposes other than the original intent was difficult.

2. No system existed for the effective tracking of management directives. Managers usually had developed their own informal systems for monitoring responses to tasks assigned, but because of the informality, managers were not alerted to due dates, and deadlines were missed.

3. Because of externally imposed requirements, current information...
was demanded. The existing manual and automated systems for disseminating current information did not always provide managers and information workers with timely information.

4. The complexity of the corporation resulted in problems associated with identifying and labeling similar but different data or information.

5. The company lacked a coordinated evaluation procedure of information systems, which compounded these information flow problems. There was neither a systematic means for monitoring the effectiveness of the department's information systems nor for improving them.

Conclusion

Based on an application of information transfer theory, this preliminary research suggests that the traditional hierarchical structure may not fit an information-rich corporate environment, where it often creates a dysfunction in information flow. One step to remedy this is to expand the traditional manager's role of monitoring staff to that of mentor, information broker, evaluator, and diagnostician of information transfer. Needed is the ability to identify, package, and disseminate information that is appropriate, accurate, and timely.

In addition to modifying the manager's role, research evidence suggests the following:

1. The organizational structure of the enterprise should be analyzed and modified to accommodate the informal information transfer patterns that exist.

2. The information dissemination system should be opened to permit transmission of corporate vision and goals to all levels of managers and information workers.

3. The organization's hierarchical structure could be flattened by eliminating some levels of supervisory management, using Jaques' concept of time span for planning, instead of span of control, as a model.

4. Often a Chief Information Officer (CIO) is needed. The CIO's responsibilities are to diagnose information needs; design, evaluate, and supervise information systems; and coordinate access to internal and external information.

The processes of diagnosing information transfer patterns, as well as designing and evaluating information services, must be recognized as an important task in organizations. Managers' concerns for locating external and internal information and the proper use of information indicates a shift in roles to that of information brokering. The complexity of modern organizations, which resemble "loosely coupled assemblages," requires a structure and attitude that accommodates information flow.

References

5. Drucker, op. cit.
14. Ibid.
20. Information workers were those "white collar" workers without management responsibility whose product was information.

Herbert K. Achleitner is an assistant professor at the School of Library and Information Management at Emporia State University in Emporia, Kansas.

Robert Grover is director and professor at the School of Library and Information Science at the University of South Florida in Tampa.
Productivity Measurements in Special Libraries:
Prospects and Problems for Use in Performance Evaluation

Robert V. Williams

This article examines the appropriateness and use of productivity measurements as a performance assessment tool in special libraries. The concept is defined, problems in use are discussed, and guidelines given for implementation. The use of productivity measurements in two federal special libraries is presented and data are given on the results of their work. The paper concludes with a comparison of productivity measurements with other evaluation tools used in special libraries and an assessment is made of its value as a measure of excellence.

Introduction

To say that productivity has been in the news lately would be an understatement. Indeed, some individuals have gone so far as to say that declines in productivity were at least partially responsible for the severe recession and high rates of inflation of the late 1970s and early 1980s. (1) Until recently, however, librarians (and particularly special librarians in small libraries) did not hear much about how productivity applied to their work. Productivity was something for blue collar workers to worry about and was seldom an issue for white collar information workers. Those days are gone.

Increasingly, white collar workers are being asked—or pressured—for indications of how well they match up with other workers in terms of productivity and, more importantly, to show how they have increased their productivity in recent years. These trends are taking place in private industry, nonprofit organizations, and, especially, within the federal government. Librarians are one of the groups being focused on for productivity analysis.

This paper examines the application of productivity measurements in special libraries for performance evaluation. The concept is defined and guidelines given for the development of a measurement program meaningful to management. Two examples from federal special libraries are given to show actual use of productivity measures. Productivity is then compared with other measures that have been used to evaluate library effectiveness and performance. The paper
concludes with an assessment of productivity measures as valid indicators of library excellence.

Before getting into definitions of productivity a few words need to be said about the use of the term in the context of libraries specifically and the "information society" in general. There are two predominant uses of the term in the literature. First, and most generally, are the discussions of how productivity is related to information use. There is a large body of literature that maintains that productivity in the information society will only be improved when we develop and utilize improved information systems. The adage is that "knowledge workers" must "work smarter, not harder." (2) The staff of the National Commission on Libraries and Information Science (NCLIS) has called for more research in this area. (3) A 1981 study of the productivity of "knowledge workers" showed that a central source of nonproductive use of time was searching for internal and external information. (4) This is a worthwhile and interesting topic to explore, particularly since the establishment of such relationships would be a powerful argument to those of us who are trying to get better funding of our libraries and information centers.

The second usage, and the focus in this paper, is on productivity measurements for improved performance by libraries and library staff. Specifically, we want to know what productivity is, how to measure it, how to compare ourselves with others in the organization and the profession generally, and how to use it to improve performance.

**Defining Productivity**

Productivity has a variety of definitions, depending on how general or specific the demands of the situation call for. At its most general level it is defined as:

\[
\text{productivity} = \frac{\text{outputs}}{\text{inputs}}
\]

or, also generally:

\[
\text{productivity} = \frac{\text{results achieved}}{\text{resources consumed}}
\]

or, a little more specifically:

\[
\text{productivity} = \frac{\text{goods and/or services}}{\text{labour} + \text{energy} + \text{capital} + \text{tools} + \text{materials}}
\]

Bringing it down to the level of the individual:

\[
\text{personal productivity} = \frac{\text{what you produce}}{\text{the \# of hours it takes you to produce it}}
\]

Some writers, will also define productivity so that it includes terms that are usually thought to be separate. Bain, goes so far as to define it as (5):

\[
\text{effectiveness} = \frac{\text{efficiency}}{\text{effectiveness}}
\]

The Bureau of Labor Statistics (BLS), however, considers effectiveness as having to do with accomplishment of specific goals and prefers to use a more limited definition: "Productivity is a concept that expresses the relationship between the quantity of goods and services produced—output—and the quantity of labor, capital, land, energy and other resources that produced it—input." (6) Using this definition, the BLS notes the two most common measurements of productivity: 1) relating the output of an enterprise, industry, or economic sector to a single input, such as labor or capital; and 2) relating output to a composite of inputs, combined so as to account for their relative importance. Which of these two definitions to use is determined by the purposes for which one engages in productivity analysis.

The most commonly used measure of productivity is the relationship between output and input of labor time, called *output per hour*. This measure, however, ignores use of other input resources, such as capital and equipment, and may not
be valid for meaningful comparisons across time or situations. Multifactor productivity measures are available that take these additional inputs into account. Unfortunately for the beginner, these measures are usually quite complex.

Definitions of productivity vary depending on the kinds of programs you want measured, the degree of inclusiveness that is desired for both input and output, the level at which you wish to measure, and, probably most importantly, the objectives you need to have measured by this procedure. Generally, one would like to have both broad based and narrowly focused measurements so that an assessment can be made of individual functions and the organization as a whole. (7)

### Measuring Productivity: Possibilities and Pitfalls

Productivity measurements, like any evaluation tool, can be done well or poorly and the results can be valid or invalid. Bain identifies nine separate factors that work against the development of a good measurement program. For libraries, the most important of these are:

1. measurements commonly used are too broad,
2. measurements are activity oriented rather than results oriented,
3. inputs are oversimplified,
4. work processes are complicated and difficult to separate and measure,
5. short-term results are emphasized at the expense of long-range goals, and
6. the measurement system overemphasizes some organizational performance goals at the expense of others. (8)

The criteria for meaningful measures suggested by Bain to overcome these problems are as follows:

1. the measures should be valid, reflecting true changes;
2. they should be complete, so that input and output are completely accounted for;
3. each measure should be inclusive of all relevant activities;
4. get your results to management in a timely manner; and
5. measures should include cost effectiveness information. (9)

Several writers have suggested that in order to attain such criteria in a productivity measurement program a detailed goal setting program needs to be established. Bain, addressing that need, takes the process very specifically from beginning to end:

1. set goals and write them down,
2. define the specific productivity opportunity,
3. decide on optimal productivity indicators,
4. consider in writing the obstacles to the plan,
5. make the plan,
6. calculate the productivity evaluation measures and indexes, and
7. interpret and evaluate in relation to goals. (10)

The productivity literature includes a variety of practical handbooks and manuals that can be used to develop a productivity measurement program. Lawlor provides a particularly good recent text that includes case studies and self-assessment questionnaires to aid the measurement process. (11) The American Productivity Center in Houston, Texas, will also provide useful guides and materials.

### Productivity Measurements in Special Libraries: Two Federal Libraries

In preparation for this study, I conducted an extensive literature search for items describing productivity measurement activities in special libraries. I made an appeal via the SpecialList, Special Libraries Association's monthly newsletter,
for information on the use of productivity in special libraries. I was unable to locate any articles describing on-going programs, and only three libraries responded to my query in the SpecialList. Of those libraries responding to my inquiry, none were using productivity as defined here.

In addition, I wrote to the BLS about the use of productivity in libraries. From the list of eight agencies they provided, I heard from three directly. Only two of those, the Library of Congress and the State Department Library, were using productivity measures of the type reported by the BLS in its “Federal Government Productivity Summary Data” reports, which permit comparisons across agency and time. (The Department of Energy’s Office of Scientific and Technical Information at Oak Ridge, Tennessee, is using some different, but very interesting, measures of productivity.) The BLS did provide a summary sheet of the types of measures that are being used in all eight participating federal libraries, but the remaining five have not been willing to make available the internal results of their work in this area.

Before presenting information on the kinds of measures being used and the results of productivity studies in the Library of Congress and the State Department Library, a reminder needs to be given of the purposes and limitations of the BLS federal government productivity measures—both in general and specifically for libraries. The primary index of productivity for federal libraries (and most of the federal government as well) is output per employee hour. This measure relates output to one input—labor time. This is an index measure, weighted to reflect differing labor requirements of portions of the output measure, and stated in terms of some desired base year data. Essentially, separate output and input indexes are calculated and then the final productivity index, output per employee hour. (The BLS measures use employee year data, based on FTEs, rather than hourly data. Generally, the two measures are identical or nearly identical.)

There are also some additional indexes that usefully accompany the basic productivity measure, output per employee hour:

1. Output index is a quantifiable unit of service combined with base year labor weights.
2. Compensation per employee year index shows the trend of the average compensation per employee year.
3. Unit labor cost index represents the cost of labor required to produce one unit of output.
4. Employee years index represents changes, or trends, in employee years (direct or indirect, or both) to produce the output.

When the appropriate cost-based indexes are shown as deflated indexes they are particularly useful in determining constant dollar costs changes in output and productivity. For example, a productivity deflated compensation index may be formed by:

\[
\frac{\text{output index}}{\text{deflated compensation index}}
\]

which is an indicator that shows the relationship between output and constant dollar costs.

A variety of additional indexes may be formed depending on the interests of the organization and the outputs to be measured. What must be kept in mind is that decisions need to be made about which outputs are to be measured, how they will be weighted, which input costs (particularly indirect costs) will be attributed to which outputs, and, finally, how outputs will be counted. The indexes (as well as the very informative basic data figures) can then be given for individual output functions, combinations of functions, and the entire library or organization. The result is a series of informative individual and summary measures that can be compared over time, across
functions as well as within and across organizations.

There are limitations. The BLS recognizes at least five major limitations to the data that are compiled for federal agencies:

1. existing techniques cannot fully take into account changes in the quality of goods and services;
2. consistency of coverage of estimates for output and input may be difficult to maintain, particularly over time;
3. organizational changes (integration, specialization, etc.) may not be reflected adequately in the measures, and productivity measures may be understated or overstated from year to year;
4. employees indirectly involved in an output function may not accurately estimate their contribution to an output function; and
5. the basic measure of productivity should be considered a general indicator of changes in output per employee hour and not a precise measure because of fluctuations from year to year in the index. (12)

Table 1, from data supplied by the BLS, shows examples of the types of library-related functions that are being measured for productivity in the eight federal agencies where libraries are participating in productivity studies. These have been broken down into several categories, according to complexity of the library service, in order to give some indication of the variety of types.

It should be obvious from this listing that a wide variety of activities, functions, and services are being measured for

Table 1. Examples of Productivity Measures in Use in Federal Libraries

<table>
<thead>
<tr>
<th>Simple Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>items loaned; loans made; circulation; items borrowed</td>
</tr>
<tr>
<td>number persons receiving periodicals</td>
</tr>
<tr>
<td>readers served</td>
</tr>
<tr>
<td>items photocopied</td>
</tr>
<tr>
<td>books and documents shelved</td>
</tr>
<tr>
<td>orders processed; materials ordered</td>
</tr>
<tr>
<td>cards sold; items sold</td>
</tr>
<tr>
<td>database searches conducted</td>
</tr>
<tr>
<td>questions answered</td>
</tr>
<tr>
<td>items screened (for SDI service)</td>
</tr>
<tr>
<td>short legal requests</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>More Complex Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>long legal requests</td>
</tr>
<tr>
<td>written replies prepared</td>
</tr>
<tr>
<td>legislative histories prepared</td>
</tr>
<tr>
<td>bibliographies prepared</td>
</tr>
<tr>
<td>copyright claims registered</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Very Complex Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>weighted composite of 4 activities: maintain subject headings list; indexing of articles; produce database citations; input/preparation of database</td>
</tr>
<tr>
<td>technical services composite indicator: select materials for purchase; catalog materials; prepare catalog</td>
</tr>
<tr>
<td>AV projects completed</td>
</tr>
<tr>
<td>weighted composite of services provided and people trained</td>
</tr>
<tr>
<td>inquiries answered (broken down by user groups: Congressional committees; members of Congress; constituents)</td>
</tr>
</tbody>
</table>

productivity analysis in these eight federal libraries. Some are routine, while others are very complex. This brief listing does not provide the really essential details on the nature of the objectives/goals being measured. This is the critical ingredient to any program of evaluation, whether for productivity or other purposes. It does indicate that it is possible—given adequate attention to goals, nature of the activities, differences in categories and sub-categories of functions, and the ability to allocate labor costs correctly—to perform productivity analyses for even complex library functions. If the library is willing to expend the effort to think critically through its functions, break them down into appropriate activities, keep track of employee time on these activities, and maintain adequate statistics on output, then it is possible to have good measures.

Given that it is possible to construct productivity measures, the question naturally arises as to the results. The State Department Library and the Library of Congress provided sufficient information for determining the results in their agencies of recent productivity studies. For the Library of Congress, table 2 shows basic data (quantities) for several activities for 1984; table 3 shows productivity (and related measures) for these same activities for 1982–1984; table 4 shows the productivity and related indexes for the entire library for 1982–84; and table 5 shows productivity, output, and employee years in graph form for the years 1977–84. This last table is particularly effective in showing that productivity and output at the Library of Congress are increasing very nicely despite a severe decline in number of employee years. One would be very proud to take this chart (and the accompanying tables) to management!

For the State Department Library, similar data are available. The library has productivity measures for reference requests, publications charged, publications circulated, and external orders processed. However, instead of showing data similar to that given for the Library of Congress, it is more useful to show changes in a series of output and related indexes over time. Table 6 shows changes in these indexes for selected years from 1977 to 1984.

To show changes over time, the BLS has prepared graphs for the productivity performance of the federal libraries participating in productivity studies in recent years. Table 7 shows library services productivity, output, and employee years for fiscal years 1977–84, and table 8 shows the average annual rate of change in productivity for several federal agency functions for fiscal years 1983–84. Library services are the third highest, with an average rate of 7.7 percent. Productivity rates for library services do, however, vary in the federal government, as can be seen from table 9. The highest average annual rate of change is 3.5 percent, the lowest is −7.1 percent, and the function average is 2.5 percent. (Names of participating federal libraries have been withheld by the BLS.)

Table 2. Basic Data for (Selected) Productivity Measures, Library of Congress, 1984

<table>
<thead>
<tr>
<th>Activity</th>
<th>Output</th>
<th>Employee Years</th>
<th>Compensation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Circulation</td>
<td>156,964</td>
<td>150.6</td>
<td>3,870,769</td>
</tr>
<tr>
<td>2. Reference</td>
<td>1,347,192</td>
<td>436.4</td>
<td>11,865,102</td>
</tr>
<tr>
<td>3. Copyright Reg.</td>
<td>502,628</td>
<td>683.0</td>
<td>15,943,486</td>
</tr>
<tr>
<td>4. Handicapped Readers Served</td>
<td>629,100</td>
<td>187.0</td>
<td>4,252,881</td>
</tr>
<tr>
<td>5. Cards sold</td>
<td>11,479,747</td>
<td>92.5</td>
<td>2,127,546</td>
</tr>
<tr>
<td>6. Congressional Res. Inquiries (Comm.)</td>
<td>92,836</td>
<td>555.0</td>
<td>18,261,919</td>
</tr>
<tr>
<td>7. CRS Inquiries (Mbrs)</td>
<td>282,327</td>
<td>521.3</td>
<td>17,152,857</td>
</tr>
<tr>
<td>8. CRS Inquiries (Cons)</td>
<td>67,084</td>
<td>73.7</td>
<td>2,424,624</td>
</tr>
</tbody>
</table>

Source: Library of Congress, Budget Office.

<table>
<thead>
<tr>
<th>Activity and Output Measures</th>
<th>1982</th>
<th>1983</th>
<th>1984</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Circulation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weighted output (A)</td>
<td>149.5</td>
<td>191.8</td>
<td>205.9</td>
</tr>
<tr>
<td>Employee years (B)</td>
<td>149.5</td>
<td>150.7</td>
<td>150.6</td>
</tr>
<tr>
<td>Employee year savings (A-B)</td>
<td>0.0</td>
<td>41.2</td>
<td>55.3</td>
</tr>
<tr>
<td>Output/employee year (A/B)</td>
<td>100.0</td>
<td>127.3</td>
<td>136.7</td>
</tr>
<tr>
<td>Unit labor cost</td>
<td>29.03</td>
<td>25.13</td>
<td>24.66</td>
</tr>
<tr>
<td>Deflated unit labor cost</td>
<td>29.03</td>
<td>23.80</td>
<td>22.24</td>
</tr>
<tr>
<td>2. Reference</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weighted output (A)</td>
<td>505.5</td>
<td>535.5</td>
<td>534.4</td>
</tr>
<tr>
<td>Employee years (B)</td>
<td>505.5</td>
<td>426.4</td>
<td>436.4</td>
</tr>
<tr>
<td>Employee year savings (A-B)</td>
<td>0.0</td>
<td>109.1</td>
<td>97.9</td>
</tr>
<tr>
<td>Output/employee year (A/B)</td>
<td>100.0</td>
<td>125.5</td>
<td>122.4</td>
</tr>
<tr>
<td>Unit labor cost</td>
<td>9.02</td>
<td>8.49</td>
<td>8.81</td>
</tr>
<tr>
<td>Deflated unit labor cost</td>
<td>9.02</td>
<td>8.04</td>
<td>7.94</td>
</tr>
<tr>
<td>3. Cards sold</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weighted output (A)</td>
<td>224.0</td>
<td>191.1</td>
<td>167.3</td>
</tr>
<tr>
<td>Employee years (B)</td>
<td>224.0</td>
<td>223.7</td>
<td>92.5</td>
</tr>
<tr>
<td>Employee year savings (A-B)</td>
<td>0.0</td>
<td>-32.6</td>
<td>74.7</td>
</tr>
<tr>
<td>Output/employee year (A/B)</td>
<td>100.0</td>
<td>85.4</td>
<td>180.7</td>
</tr>
<tr>
<td>Unit labor cost</td>
<td>.30</td>
<td>.39</td>
<td>.19</td>
</tr>
<tr>
<td>Deflated unit labor cost</td>
<td>.30</td>
<td>.37</td>
<td>.17</td>
</tr>
<tr>
<td>4. Cong. Res. Inquiries (Members)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weighted output (A)</td>
<td>662.7</td>
<td>630.8</td>
<td>662.1</td>
</tr>
<tr>
<td>Employee years (B)</td>
<td>662.7</td>
<td>502.1</td>
<td>521.3</td>
</tr>
<tr>
<td>Employee year savings (A-B)</td>
<td>0.0</td>
<td>128.8</td>
<td>140.8</td>
</tr>
<tr>
<td>Output/employee year (A/B)</td>
<td>100.0</td>
<td>125.6</td>
<td>127.0</td>
</tr>
<tr>
<td>Unit labor cost</td>
<td>68.77</td>
<td>58.68</td>
<td>60.75</td>
</tr>
<tr>
<td>Deflated unit labor cost</td>
<td>68.77</td>
<td>55.57</td>
<td>54.78</td>
</tr>
<tr>
<td>5. Cong. Res. Inquiries (Constituents)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weighted output (A)</td>
<td>54.7</td>
<td>54.3</td>
<td>58.0</td>
</tr>
<tr>
<td>Employee years (B)</td>
<td>54.7</td>
<td>67.5</td>
<td>73.7</td>
</tr>
<tr>
<td>Employee year savings (A-B)</td>
<td>0.0</td>
<td>-13.2</td>
<td>-15.7</td>
</tr>
<tr>
<td>Output/employee year (A/B)</td>
<td>100.0</td>
<td>80.4</td>
<td>78.7</td>
</tr>
<tr>
<td>Unit labor cost</td>
<td>25.36</td>
<td>33.80</td>
<td>36.14</td>
</tr>
<tr>
<td>Deflated unit labor cost</td>
<td>25.36</td>
<td>32.00</td>
<td>32.59</td>
</tr>
</tbody>
</table>

Source: Library of Congress, Budget Office.

**Productivity as an Evaluation Tool: Comparisons with Other Library Evaluation Measures**

Clearly, the results for these two specific federal libraries, as well as federal libraries in general, are impressive. The real question, however, is whether productivity is a good measure of library excellence. Before venturing a response to this question, two caveats need to be made. First, it is necessary to define excellence. This is not so easily done because of the variety of possible definitions. However, if one defines it broadly as the accomplishment of goals or objectives and if improvement in productivity is one of your goals, then it is a good measure of excellence. However, it must be clear to you and your management that this is one of the ways that the library and library staff will be evaluated. Use of this approach to judgments of excellence should be made purposively and not simply for the sake of having some quantitative data for show. Usually, one would make this determination on the basis of whether it fits in with organi-
Table 4. Productivity and Related Indexes for all of the Library of Congress (measured activities only) 1982–1984

<table>
<thead>
<tr>
<th>Data</th>
<th>1982</th>
<th>1983</th>
<th>1984</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighted output</td>
<td>3,075.00</td>
<td>3,179.62</td>
<td>3,276.74</td>
</tr>
<tr>
<td>Output index (A)</td>
<td>100.00</td>
<td>103.00</td>
<td>106.00</td>
</tr>
<tr>
<td>Employee years</td>
<td>3,075.00</td>
<td>3,063.05</td>
<td>2,867.99</td>
</tr>
<tr>
<td>Employee year index</td>
<td>100.00</td>
<td>99.61</td>
<td>93.27</td>
</tr>
<tr>
<td>Compensation</td>
<td>75,353,902</td>
<td>81,355,676</td>
<td>79,818,299</td>
</tr>
<tr>
<td>Compensation index (C)</td>
<td>100.00</td>
<td>107.97</td>
<td>105.93</td>
</tr>
<tr>
<td>Compensation deflator</td>
<td>1.00</td>
<td>1.06</td>
<td>1.11</td>
</tr>
<tr>
<td>Deflated comp. index</td>
<td>100.00</td>
<td>102.24</td>
<td>95.51</td>
</tr>
</tbody>
</table>

Calculations, Indexes

| Productivity, Empl. year (A/B) | 100.0   | 103.48  | 114.25  |
| Productivity, Defl. comp. (A/D) | 100.0   | 100.82  | 111.57  |
| Compensation/Emp. year (C/B)   | 100.0   | 108.39  | 113.57  |
| Unit labor cost (C/A)          | 100.0   | 104.74  | 99.40   |
| Defl. unit labor cost (D/A)    | 100.0   | 99.19   | 89.63   |
| Unit labor requirement (B/A)   | 100.0   | 96.64   | 87.53   |

Source: Library of Congress, Budget Office.

Table 5. Library of Congress: Productivity, Output and Employee-years, FY 1977–84 (FY 1977 = 100)

Table 6. Indexes of Output per Employee-year and Related Data: State Department Library (measured activities only)—Selected Years, FY 1977–1984

<table>
<thead>
<tr>
<th>Fiscal Year (1977 = 100)</th>
<th>Output per Employee Year</th>
<th>Output</th>
<th>Employee-Years</th>
<th>Unit Labor Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1977</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>1978</td>
<td>95.2</td>
<td>100.7</td>
<td>105.8</td>
<td>117.7</td>
</tr>
<tr>
<td>1982</td>
<td>122.7</td>
<td>113.5</td>
<td>92.5</td>
<td>131.1</td>
</tr>
<tr>
<td>1983</td>
<td>119.1</td>
<td>110.5</td>
<td>92.8</td>
<td>135.4</td>
</tr>
<tr>
<td>1984</td>
<td>118.3</td>
<td>112.7</td>
<td>95.3</td>
<td>137.3</td>
</tr>
</tbody>
</table>

Source: U.S. Department of State Library.

zational goals and organizational approaches to evaluation. Second, productivity measures may be biased toward large libraries where quantities of output for a particular function are greater and statistical data are more easily maintained. In special libraries, where one staff member may handle several functions almost simultaneously, questions of separation of functions for record keeping and the added expense of such procedures must be raised. There are at least five evaluation measures that have been applied to special libraries and are at least partially useful in comparisons with productivity. These are: user satisfaction, cost benefit, value of information, document delivery tests, and quality of information. Each of these will be briefly compared with productivity as a potential measure of library excellence.

User Satisfaction

This measure of excellence has been used to judge, for individual services as well as for the library overall, the rating

Table 7. Library Services: Productivity, Output and Employee-years, FY 1967–84 (FY 1977 = 100)

that users assign to the library when asked how satisfied they are with the library or a library service. Ratings are usually based on ordinal measurement scales specifying degree of satisfaction or dissatisfaction. It is probably the most frequently used performance measure in library evaluation studies. The measure has both advantages and disadvantages. The central advantage is probably the ease of collecting and analyzing the data. And, if users do share agreement about the meaning of satisfaction, then it may be a valid measure of satisfaction.

Generally, however, we know little (or do not attempt to find out) about the extent of shared agreement about the meaning of the term. Recent research by D'Elia and Walsh on public library user satisfaction has shown that there is little agreement about what it means and, further, that beyond some unknown minimal level of service, it is very difficult to validly assess user satisfaction as it relates to library performance. (13) Despite continuing doubts about the validity of the measure, it will probably remain a useful, though limited, indicator of library excellence.

When compared to productivity as a measure of excellence, user satisfaction can only be described as measuring something entirely different. User satisfaction asks for a quality judgement from your “customers,” while productivity assesses how labor efficient you are in producing services and products for them.

**Cost Benefit Analysis**

Cost benefit analyses have been very popular in a variety of fields of study, particularly in business and engineering. Librarians have attempted to use them...
Table 9. Library Services: Average Annual Rate of Change in Output per Employee-year, by Organization and Function Average, FY 1977-84

<table>
<thead>
<tr>
<th>Rate of Change</th>
<th>Legend</th>
</tr>
</thead>
<tbody>
<tr>
<td>-7.1</td>
<td>Organization</td>
</tr>
<tr>
<td>-3.1</td>
<td>Function</td>
</tr>
<tr>
<td>2.5</td>
<td>Function</td>
</tr>
<tr>
<td>2.8</td>
<td>Function</td>
</tr>
<tr>
<td>3.4</td>
<td>Function</td>
</tr>
<tr>
<td>3.5</td>
<td>Function</td>
</tr>
</tbody>
</table>

Note: Organizations not identified to avoid disclosure.

(under a variety of names), but with somewhat mixed results. The major problem has been valid determination of the benefit side of the equation. The cost side is not easily determined (usually because of the difficulty of attributing precise costs to a particular service), but is much simpler than the benefits question. Manning’s formula, described in a recent article by Zachert and Williams (14) is a good example of an attempt to estimate cost benefits for a special library. King Research, Inc. used a similar user-based judgement approach in a study of the
value of the U.S. Department of Energy’s Energy Data Base. (15) Both studies rely on the judgments of users regarding how much time the library saved them as the critical gauge of benefits. Whether this is a valid process for estimating benefits is yet to be determined by further research.

When compared with productivity, cost benefit analysis is a useful companion measure for judging library excellence. As productivity increases, costs (at least when compared in constant dollars for labor costs) for library functions decrease. If one were to use a multifactor measure of productivity (including input costs such as capital expenditures) then it would be an even more interesting companion to cost benefit measures.

Value

Value appraisals are closely allied conceptually to cost benefit analyses, and many authors would consider them to be the same thing. Here, however, the approach is to use value measures to address the question: what would it have cost the organization if the library/service/product had not existed? King Research used this approach and estimated that the Energy Data Base saved scientists about $3 billion in time and equipment. In a follow-up study by King at DOE, it was estimated that the value of library services (in terms of willingness to pay) was $3.1 million (or $600 per professional employee) and value in terms of savings derived from reading was $28 million (or $5,400 per professional). (16) Again, both of these judgments were based on self-assessments of value by users.

Like cost benefit analyses, value of information studies are also a useful companion measure to productivity. Indeed, King Research says that with the Energy Data Base, research and development in energy cost $5.8 billion. Since the value of the database was $3 billion to scientists, then it would have cost $8.8 billion to achieve the same level of output without the Energy Data Base. This is an increase in national scientific productivity of about 52 percent. (17) Thus, value studies, while still filled with a great number of validity problems, serve as a complementary measure to productivity when productivity is considered in the larger framework of the entire organization.

Document Delivery Tests

Document delivery tests were developed to assess the ability of a library to deliver a specified set of documents in a timely fashion. (18) These tests have three components: 1) test of the probability of ownership of a sample of documents; 2) test of the probability of availability of the documents; and 3) a capability index that takes into account ownership, availability, and speed of delivery. Research on validating the measures has not been extensive, but indications are that they do a moderately good job of assessing the usefulness of a collection. The central problem with validity is defining the population of documents from which a sample is taken. Document delivery tests may be biased toward large libraries which emphasize in-depth collections in a subject. When compared with productivity, document delivery tests should be considered a complementary measure of library excellence because they tap the concept of the quality of the collection based on (hypothetical) user document demands.

Quality

Quality is an elusive concept. Precision in definition is not aided by the different ways in which it is used in the literature where reference may be made to it in terms of a specific service or to describe the library overall. What is needed are specific definitions that can be measured. King Research, in its second study of the DOE libraries, attempts to do this by defining quality as the user’s satisfaction with library services and characteristics. A narrower definition of the quality of a search is also given by King as the relevance (as judged by the user) of the output. (19) King Research, however, does not use these definitions as an overall measure of quality but considers them a part of its measures of library perform-
ance and library effectiveness, a reflection of the terminology problem in library evaluation. A similar problem exists with the measures of the quality of reference work, an area that has had a good deal of research in public and academic libraries. Crowley discusses the results of this work, noting particularly the disappointing fact that reference answers seem to be only "half right." (20)

The major problem, then, with measures of quality is the lack of agreement about definition of the term. It may not be possible to resolve this issue because the concept is so broad and elusive. A more useful approach may be to develop more narrowly defined evaluation measures and construct from them a general measure of quality. In reality, this is what can be done with measures of productivity, where individual functions are assessed as to productivity and from those an overall index of productivity can be constructed.

Summary and Conclusions

Productivity measures do have their place in the special librarian's tool kit of evaluation measures. Larger special libraries will probably find them more useful than small libraries because of the problems involved in constructing indexes for defined discrete output functions. They are not, however, without their uses in the small library if the librarian is willing to make the effort to construct the necessary indexes and maintain accurate records on input and output. The two keys to a successful productivity measurement program are their meaningfulness to upper-level management as a library evaluation measure and the setting of precise objectives for productivity measurement. Without successfully meeting these two criteria, the librarian is wasting his/her time in measuring productivity and might be well advised to use one or more of the general measures discussed above.

The federal librarians who provided information for this study have shown that they are successfully meeting these two essential criteria. In addition, they have developed a series of measures that show promise for imitation by other special libraries, particularly large ones. They have developed both simple and complex measures of productivity and are using these as evidence in their requests for budgets (21) and in meeting federal government requirements for productivity reporting. While results vary from agency to agency, they do effectively show that productivity of library services is increasing.

The librarian's (and particularly the special librarian's) evaluation tool kit is an exceedingly thin one because of the lack of research and development work in this area. Productivity is one useful addition to it. When compared with other evaluation measures that have been developed for libraries, productivity complements rather than replaces them. The special librarian needs and can make use of all—and more—of these evaluation measures. Hopefully, in the coming years, practitioners and researchers will join forces for the improvement, refinement, and expansion of the special librarian's evaluation tool kit.

References


*This is a revised and expanded version of a paper presented at the 1986 SLA Annual Conference in Boston.*

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Robert V. Williams is an associate professor at the College of Library and Information Science, University of South Carolina, in Columbia, South Carolina.
An Integrated Library System from Existing Microcomputer Programs

Lynda S. Kuntz

Using three commercial microcomputer software packages, the library staff at a government library developed an integrated library system that is comparable to commercial systems. The in-house system combines communication, database management, and word processing computer programs to produce a Microcomputer Integrated Library System (MILS). MILS consists of four modules: acquisitions/cataloging, public online catalog, serials control, and circulation.

Background

Using off-the-shelf computer programs, the library staff of the Technical Information Center at the U.S. Army Concepts Analysis Agency (CAA) developed a microcomputer integrated library system (MILS). MILS integrates the acquisition, cataloging, public online catalog, serials control, and circulation activities. CAA is a special agency under the chief of staff of the U.S. Army. CAA primarily provides analyses of broad issues in the areas of force structure, operational capabilities, resource requirements, and personnel and logistics processes.

The Technical Information Center at CAA is a specialized library consisting of a book collection (2,350 volumes), unclassified documents (3,000), classified (secret/top secret) documents (10,000), and technical journals (200 subscriptions). The Center subscribes to the services of the Online Computer Library Center (OCLC) and online information vendors, such as the Defense Technical Information Center (DTIC) and DIALOG. In addition to using these vendors for information, loan, and purchase services, they are the source of cataloging data. The staff consists of two librarians, a library technician, and a security specialist. The staff provides ready reference and in-depth research services to CAA personnel (approximately 300 individuals).

In early 1984, the librarians reviewed the procedures used to accomplish the tasks involved in cataloging, circulation, card catalog maintenance, and serials control. The purpose of the review was to ascertain the feasibility of automating these tasks either by an in-house developed system or by procurement of a commercial system. The marketplace was surveyed for products that accomplish these tasks at a reasonable cost. The annual library budget excluding salaries was $42,000. The resources within the
agency were surveyed to determine what hardware and software support would be available for developing an in-house system. The librarians determined that the commercial systems were too expensive for current and forecasted transaction levels, i.e., number of items acquired, loaned, etc. They also determined that assistance was available from the CAA's computer personnel for hardware trouble shooting and for consultation on software implementation.

Therefore, the librarians decided to develop a system in-house by combining existing software programs to accomplish the routine library tasks. They acquired the M300 workstation (OCLC's IBM PC) with an expansion chassis, a Micro-Systems tape backup, a Hayes Smart Modem, and three software packages: dBASE III, Wordstar, and PC-Talk III. The M300 was later enhanced by an AST Sixpakplus for clock/calendar functions and to increase random access memory to 640Kb and a 286 Express speedup board to bring operation to almost IBM AT speed.

**Consolidating Off-the-Shelf Software**

The idea behind MILS is that various commercial software packages can be consolidated into one system, which will be menu driven and extremely easy to use. Various packages were reviewed to determine how well they accomplished a given task. The primary tasks were: 1) accessing remote databases and downloading cataloging information; 2) converting the downloaded data into a format that could be accessed on a microcomputer; 3) accessing the bibliographic information from various points, such as author, title, and subject; and 4) accounting or tracking activities.

For accessing remote databases, PC-TALK III was selected because of three features: 40 function keys can be programmed, low cost ($35), and compatibility with both OCLC and DTIC. The staff had been using Wordstar for word processing functions; therefore, its use was expanded to editing the downloaded data. Editing the downloaded OCLC machine readable cataloging (MARC) records consists of removing unwanted data, verifying the local call number, limiting title and subject to one line for each field, and modifying the headers to individual fields and for original input and spell checking.

The relational database management package, dBASE III, is the heart of the system. Simply stated, "database management" is another phase for "acquiring, cataloging, accessing, and loaning materials." dBASE III was selected because, in addition to being an excellent database manager, it is a high-level programming language. Using a high-level programming language means that one line of instructions, even one word, can accomplish tasks that would take several lines in a lower-level language, such as BASIC; dBASE is also relatively easy to learn. Two weeks of formal instruction and several how-to-do books are adequate background to begin development of the programs used in MILS. The courses attended and the most helpful books and articles are listed at the end of this article.

Finally, for fast search and retrieval, the database was developed under the concept of the alphabetical or inverted file. After the MARC record is downloaded from OCLC and edited as described above, an accession number is assigned sequentially to each bibliographic record. A keyword file is created by MILS for each word in the title and subject fields. The keyword record consists of only one word and its corresponding accession number and is related to the bibliographic record by the accession number. The program, which creates the keyword records, was written in FORTRAN by one of CAA's computer persons.

**Retrospective Conversion**

To create the initial online book records, shelf list cards were pulled for the books on the shelf or in circulation, and
an accession number was assigned. Then
the librarian downloaded the catalog rec-
ord in lots of 100 titles from OCLC onto
a floppy disk. The downloaded data was
edited using Wordstar. (See figure 1 for
an example of a downloaded record and
its edited version.) Only those fields that
were to be searched or were necessary to
identify the item are included in the final
version.

Downloading goes very quickly. Using
the OCLC number when available, 100
records can be downloaded in an hour.
Editing the same records requires about
four hours. The editing time is reduced
to one hour if the cataloging information
is retrieved from the LCMARC file in
DIALOG. However, not all records are
in this file and using DIALOG increases
the cost of the system. The edited down-
load is then copied into MILS. Convert-
ing the OCLC records into dBASE rec-
ords and adding the accession number to
each, then creating the keyword files,

Figure 1.

UNEDITED DOWNLOAD FROM OCLC

Screen 1 of 2
AFC - FOR OTHER HOLDINGS, ENTER dh DEPRESS DISPLAY RECD SEND
OCLC: 15027416 Rec stat: n Entrd: 861231 Used: 870117
Type: a Bib lvl: m Govt pub: Lang: eng Source: d Illus: af
Repr: Enc lvl: 1 Conf pub: 0 Ctry: mau Dat tp: s M/F/B: 10
Indx: 1 Mod rec: Festschr: 0 Cont:
Desc: a int lvl: Dates: 1986,
1 010 $z 66-12065
2 040 IEL $c IEL
3 020 0395378591 : $c $40.00
4 082 941.08/092/4
5 092 $b
6 049 AFCC
7 100 10 Gilbert, Martin, $d 1936-
8 245 10 Winston S. Churchill, volume VII : $b Road to victory, 1941–1945 / $c by
Martin Gilbert.
9 250 First American edition.
12 500 Includes index.
14 650 0 Prime ministers $z Great Britain $x Biography.
ns\n+
1st message in process

Screen 2 of 2
15 740 01 Road to victory 1941-1945.

EDITED RECORD READY FOR INPUT TO MILS

Z020 0395378591 : $40.00
Z092 941.08
Z049 gil
Z100 Gilbert, Martin, 1936–
Z245 Winston S. Churchill, volume VII : Road to victory, 1941–1945
Z250 First American edition.
Z260 Boston : Houghton Mifflin
Z270 1986.
Z300 xx, 1417 p. cm.
500 Includes index.
Z650 Prime ministers Great Britain Biography
740 01 Road to victory 1941-1945.
adding the bibliographic records to the online catalog, and indexing all the fields takes about five minutes. The retrospective conversion of the book records (2,350 titles) took two people approximately two months. The database for the serials was similarly created.

The conversion of the classified document collection began with a survey of CAA personnel on what documents should be retained. Based on that survey, the security specialist keyed in the bibliographic information using the screen format in figure 2 or downloaded the bibliographic information from DTIC. The keyed-in records are run through the Wordstar spell checker to locate any typos. While the rate of typos is very low (.05 percent), it is still a necessary step in order to have a clean database. The conversion process and the keyword file production, as described above for books, is then accomplished. In two years, approximately 3,000 classified documents have been added to the online catalog. The time required is comparable to the books. The spell check program will run through 100 records in an hour, and the conversion and keyword programs take about five minutes.

The next retrospective conversion project is the unclassified document collection. An inventory and/or survey is planned to determine what documents will be converted.

### Current Acquisitions/Cataloging Operations

For current purchases, the acquisitions/cataloging module was developed. When books are ordered from local bookstores, the librarian enters minimal bibliographic information into the on-order subsystem along with vendor and cost data. When items are received, the on-order records are updated. The cataloging information is downloaded from OCLC as described earlier except in smaller lots. The records then become part of the online catalog. The 238 books that were purchased in 1986 have been included in the MILS database.

The acquisition/cataloging menu provides for printing book and spine labels, editing or deleting records, generation of the voucher registry (a Department of the Army requirement), and accounting for book expenditures. Before purchasing books, the on-order file is searched by author or by a keyword from the title to preclude duplicate orders. MILS tracks the amount spent overall, with individual vendors, and by CAA requester. In order to change or delete records, the librarian enters the accession number and receives a full screen display of the record. The related indexes are updated within seconds by the system after any corrections or deletions are made. The number of bibliographic records, the keyword files,

---

**Figure 2.**

BIBLIOGRAPHIC INPUT FOR BOOKS

LAST ACCESSION NUMBER USED: 902554

NEXT ACCESSION NUMBER: ISBN:

IF REFERENCE COPY
INPUT REF:
DEWEY CALL NUMBER
FIRST 3 LETTERS OF AUTHOR'S LAST NAME

AUTHOR:
TITLE:
EDITION: PUBLISHER: YEAR:
SERIES:
SUBJECT HEADINGS:

# OF COPIES: TO EXIT, LEAVE SCREEN BLANK AND PRESS PG DN.
and indexes are limited only by the size of the fixed disk. With 2,350 book records and 3,000 classified documents, the entire system is using 6.6Kb.

Public Online Catalog Operations

Until CAA’s local area network (LAN) is installed, CAA personnel access MILS by copying the data and search programs onto their IBM ATs. The data and search programs are distributed on floppy disks. About 800 bibliographic records fill one floppy. After copying the floppies into the dBASE directory, the individual user runs the keyword and index program. Thereafter, the most recent edition of MILS is available for searching by the menu in figure 3.

The search options include those that CAA personnel previously had available: personal author, corporate author, title, series statement, subject heading for books, and keywords from the titles for documents. In addition, the menu includes those search approaches requested by CAA personnel, such as document report number and DTIC number. The access points, which had previously been limited to books, are now available for documents. The biggest advantage to the end user of the system is that one search looks at all materials. Previously a search would require using the card catalog for books, the keyword index for documents, and the serials list for journals.

Title and subject searching can be by one, two, or three words. Each search is a browse search, i.e., it is not necessary or even desirable to type in a complete word. Boolean searching includes the author’s last name and one word from the title. Much of OCLC’s search system and DIALOG’s truncation capabilities are incorporated but not obvious to the end user. After selecting a search strategy and inputting the options, the user is informed of the number of records located. The user can then view or print the results. The retrieval time for single-term searching is less than one second. A Boolean query can take up to 30 seconds depending on the number of records retrieved.

Serials Control Module

The library technician indicates receipt of individual issues by inputting the ISSN. The system responds with the name of the journal and then allows the issue, volume, and cover date to be inputted by the technician. Thereafter, a weekly list of issues received is automatically available for inclusion in CAA’s Weekly Bulletin. This publicity has greatly increased the usage of the costly quarterly publications. Rather than enter expected receipt dates for each issue, we elected to wait until one year’s data had been created before implementation of the missing issues function.

Circulation Module

MILS handles a very low volume of circulation. The average daily circulation is 10 items. As a general rule, CAA personnel request and retain materials for the period of the assigned study. The study effort may take anywhere from three months to a year. Therefore, library staff is more concerned with the location of documents rather than prompt return. For a large volume of circulation to be accommodated, the system can be modified to include bar code circulation. The circulation system required establishing a personnel database that includes the name, department, telephone number, and badge number for each employee.
Items are checked out by their accession number and the individual’s badge number. Using the relational capability of dBASE III, a program was written which matches the badge number in the loan record to the badge number in the personnel file and, at the same time, matches the accession number in that loan record to the accession number in the bibliographic file. Return of materials requires that the accession number be entered and, if more than one copy, receipt of the appropriate copy is indicated. The loan records were archived for collection usage and development analysis.

Conclusion

Thus, we have demonstrated how the three off-the-shelf software packages—PC-Talk III, Wordstar, and dBASE III—can be consolidated into one microcomputer integrated library system, which incorporates the functions and features found in commercial products. It provides for original cataloging, MARC record interface, public online catalog, acquisitions, serials control, and circulation. By developing the system in-house, librarians were able to control costs and, at the same time, customize the system to meet the CAA’s unique needs. We also gained greater proficiency in writing programs. Most of the equipment was purchased from OCLC through the Federal Library and Information Center Committee (FLICC). For one workstation, the total equipment and software costs were $10,000. These costs would be less if IBM compatibles were purchased. CAA’s computer personnel were extremely helpful in writing the FORTRAN keyword program and in trouble-shooting hardware problems. The menus in MILS were designed to meet the individual user’s needs. For example, the serials module includes retrieval by ISSN because the library technician wanted to minimize the amount of required keying. Other menus were expanded or contracted whenever the user indicated a need for other access points.

Personal computer technology allows the librarian to perform database functions by making use of the full range of the inherent capabilities of the computer. The advantages are tremendous. By reducing the time required to perform time consuming and redundant tasks, more time is available for management functions. Secondly, the knowledge gained from designing and implementing a system specifically tailored to support our parent organization makes possible the rapid retrieval of information we had not intentionally planned to provide. For example, we were required to determine the total number of items received from a particular agency. That is a rare request in that we are usually asked for everything we have on a specific subject. With our system, it was possible to have the computer count the number of times that agency was listed, and we came up with a rapid and accurate response. Once one has machine-readable data and has learned the commands of dBASE III, information is truly at their finger tips.

Appendix

Books/Articles Useful in Learning dBASE III

Lynda S. Kuntz is the systems librarian at the National Oceanic and Atmospheric Administration Library in Rockville, Maryland.
The Interactive Financial Planning System as a Management Tool in Libraries

Sara Anne Hook-Shelton

ALTHOUGH many library science programs provide excellent training in management skills, finance and budgeting can be particularly complex and confusing areas. When faced with the prospect of submitting budget proposals or applying for grants and other funding, even the most seasoned professional can benefit from techniques borrowed from the business world. Through tools of financial analysis, it is possible to construct budgeting models and related documentation useful for decision making in libraries. One of these tools is the Interactive Financial Planning System (IFPS).

This article demonstrates the use of IFPS in two special libraries. It projects five-year budgets for these libraries, which include calculations for rising costs of personnel and materials. While IFPS is certainly not the answer to all budgeting concerns in libraries, it can be a helpful software package for financial analysis and decision making.

Overview of IFPS

According to Data Sources Catalog, IFPS is the most widely used decision support software in the world, as well as the most popular software of this type among Fortune 500 companies. (1) It includes a relational database, microcomputer to mainframe communication, data editing, custom reporting, graphics capabilities,
The basis of IFPS is the construction of models. Special capabilities of IFPS were designed primarily for accounting, statistical analysis, and investment forecasting, with provisions for calculating present and future values, amortization, and depreciation. Thus, IFPS is clearly a more extensive package than typical spreadsheet software, such as LOTUS 1-2-3 or VisiCalc. However, IFPS can also be used for less elaborate budgeting and planning activities. Two models have been constructed here to illustrate the use of IFPS in libraries.

Development of the Models

The first model develops a typical line item budget for the hypothetical Walker Medical Library, showing expenditures for salaries, equipment, and books, as well as funding received from grants and user fees. Most library directors use this type of budget in planning. It is a relatively simple budget, which provides information on both present and future costs and funding needs (figure 1).

The second model is a program budget for the hypothetical Sinclair Corporation Library (figure 2). This type of budget has become increasingly popular in the library field in recent years. It groups expenditures into broad categories based on services and activities—for example, reference and cataloging. Such a budget can help library managers to visualize which areas are utilizing available funds, and where cuts and additions are needed.

The first model, LINEITEM (all models in IFPS must be given single-word names), was constructed to initially show total expenditures for library operations. The goal of this model is to indicate the amount of funding that needs to be requested each year to support the library. Thus, any incoming funds from sources other than the library's parent organization, such as grants and user fees, are then subtracted from expenditures, because these decrease the library's annual budget request. The final figure is the amount that needs to be requested each year for five years, assuming various in-
increases in costs of personnel, books, and equipment. For demonstration, these increases were arbitrarily set at 5 percent for professional salaries, 7 percent for staff salaries, 13 percent for books, 15 percent for journals, 2 percent for media, 25 percent for online and telephone charges, and 6 percent for interlibrary lending. A library using IFPS for actual budget-making would want to research any percentage changes used in their model and document these changes carefully through published statistics. Based on the given percentages, amounts of $108,771.50, $117,799.25, $127,826.37, $138,978.56, and $151,398.49 must be requested for years one through five, respectively (figure 3).

PROGRAM, the second model, illustrates some of the primary services and activities of the Sinclair Corporation Library, grouped under broad categories with dollar estimates. The projected costs for these activities are also shown in re-
MODEL PROGRAM VERSION OF 07/15/86 10:32
10 *PROGRAM BUDGET FOR THE SINCLAIR CORPORATION LIBRARY
15 * WITH FIVE YEAR PROJECTIONS
20 *
25 COLUMNS 1-5
30 *
35 *OPERATIONS:
40 *
45 *PUBLIC SERVICES:
50 *
55 REFERENCE = 14000.00, PREVIOUS REFERENCE * 1.05
60 READER SERVICES = 2000.00, PREVIOUS READER SERVICES * 1.07
65 REFERENCE COLLECTION = 400.00, 400.00, 400.00, 400.00, 400.00
70 *
75 COMPUTER SEARCHING = 4000.00, 4000.00, 4000.00, 4000.00, 4000.00
80 USER FEES = 350.00, 350.00, 350.00, 350.00, 350.00
85 *
90 TOTAL SEARCHING = COMPUTER SEARCHING - USER FEES
95 *
100 INTERLIBRARY LOAN = 600.00, 600.00, 600.00, 600.00, 600.00
105 FEES = 150.00, 150.00, 150.00, 150.00, 150.00
110 *
115 TOTAL LOANING = INTERLIBRARY LOAN - FEES
120 *
125 *
130 PUBLIC SERVICES = REFERENCE + READER SERVICES + TOTAL SEARCHING +'
131 TOTAL LOANING
135 *
140 *
145 *TECHNICAL SERVICES:
150 *
155 CATALOGING = 5000.00, PREVIOUS CATALOGING * 1.12
160 TECHNICAL PROCESSING = 1800.00, PREVIOUS TECHNICAL PROCESSING * 1.07
165 *
170 TECHNICAL SERVICES = CATALOGING + TECHNICAL PROCESSING
175 *
180 *COLLECTION DEVELOPMENT:
185 *
190 ACQUISITIONS = 20000.00, PREVIOUS ACQUISITIONS * 1.15
195 *
200 TOTAL COLLECTION DEVELOPMENT = ACQUISITIONS
205 *
210 *ADMINISTRATIVE SERVICES:
215 *
220 PERSONNEL = 12000.00, PREVIOUS PERSONNEL * 1.05
225 TRAVEL = 300.00, 300.00, 300.00, 300.00, 300.00
230 *
235 TOTAL ADMINISTRATIVE SERVICES = PERSONNEL + TRAVEL
240 *
245 *
250 OPERATIONS = PUBLIC SERVICES + TOTAL ADMINISTRATIVE SERVICES +'
251 TECHNICAL SERVICES + TOTAL COLLECTION DEVELOPMENT
255 *
260 *PERCENTAGES:
265 *
270 ADMINISTRATION = TOTAL ADMINISTRATIVE SERVICES/OPERATIONS
275 *
280 PUBLIC = PUBLIC SERVICES/OPERATIONS
285 *
290 TECHNICAL = TECHNICAL SERVICES/OPERATIONS
295 *
300 COLLECTION = TOTAL COLLECTION DEVELOPMENT/OPERATIONS

spring 1988
Figure 3. Solution to LINEITEM

LINE ITEM BUDGET FOR WALKER MEDICAL LIBRARY
FIVE YEAR PROJECTIONS

EXPENDITURES:

PERSONNEL:

PROFESSIONAL
   STAFF
   STUDENTS

PERSONNEL

COLLECTION:

BOOKS

SERIALS

MEDIA

COLLECTION

OTHER COSTS:

SUPPLIES

EQUIPMENT

TRAVEL

TELEPHONE AND ONLINE

OTHER COSTS

EXPENDITURES

FUNDS AND FEES:

DONATIONS

GRANTS

USER FEES

INTERLIBRARY LENDING

FUNDS AND FEES

TOTAL BUDGET REQUEST:

AMOUNT NEEDED

lation to the total library budget by percentage. PROGRAM tells managers exactly where library funds are being used. Any additional funds or fees associated with a particular service or activity are included, so that the funding required for support of a service or activity is reported net. For example, since the library charges some of its users for computer searches, user fees are subtracted directly from the variable Computer Searching, offsetting the cost of this service and the percentage of the annual budget needed (figure 4). It is important that supporting documentation be provided when changes are made in a budget, so that the reasons for such changes are evident when the budget is referred to in the future.

Interrogations of the Models

In addition to giving information for present use and future planning, IFPS allows for manipulation of models through special commands. Several types of “in-
Figure 4. Solution to PROGRAM

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Grants, in figure 5. Using the WHAT IF interrogation, one can see the implications of this additional funding for the library’s budget and the revised totals of $103,771.50, $112,799.25, $122,826.37,
$133,978.56, and $146,398.49 that need to be requested each year to meet expenses (figure 5).

Similarly, suppose that because fewer qualified individuals are graduating from library science programs, salary ranges are higher than anticipated. The Walker Medical Library must increase its salaries by 10 percent per year, rather than the 5 percent originally estimated, to ensure effective recruitment and retention of its librarians. Again, the WHAT IF option illustrates the consequences of these increased salary obligations (figure 6). Consider the difference between line 1 (Professional) in figure 3 versus the same line in figure 5 for columns 2–5. Professional salaries will be $22,000.00,
### Figure 6. Increase in Professional Salaries

**WHAT IF CASE 2**
ENTER STATEMENTS
7 PROFESSIONAL = 20000.00, PREVIOUS PROFESSIONAL * 1.10

***** WHAT IF CASE 2 *****
1 WHAT IF STATEMENT PROCESSED

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**LINE ITEM BUDGET FOR WALKER MEDICAL LIBRARY**
**FIVE YEAR PROJECTIONS**

**EXPENDITURES:**

**PERSONNEL:**

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**COLLECTION:**

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**OTHER COSTS:**

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**FUNDS AND FEES:**

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**TOTAL BUDGET REQUEST:**

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<td>129976.37</td>
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<tr>
<td>142446.06</td>
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<tr>
<td>156370.36</td>
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</table>

$24,200.00, $26,620.00, and $29,282.00 in years two through five, instead of $21,000.00, $22,050.00, $23,152.50, and $24,310.13, respectively. By the end of year five, there is thus a discrepancy of close to $5,000.00, which must be included in the budget (column 5 of figures 3 and 5, line 1, Professional).

Numbers and statistics may not be enough to indicate the implications of rising personnel costs on a library's overall budget. This can be more effectively shown with the use of the PLOT interrogation. Use of this option graphs the salary levels of professionals, staff, and students over the five-year period (figure 7). Presentations to administrators are enhanced with this feature. Unfortunately, in a PLOT, numbers are used to designate categories, for example, in this
case a 1 is used to represent Professional on the graph. This can be confusing when plotted against years with the same numbers, but it is unavoidable. However, in PLOT, it is the trend illustrated by the numbers that is important, not the actual amounts represented by the numbers.

Interrogations are also useful in analyzing the Sinclair Corporation Library’s budget. A graphic display of the amount of funding spent on both technical and public services can be contrasted with total funding needed using the PLOT command. Thus, Operations, as noted in the original model, refers to the funding required to operate the library, which would include the costs associated with public and technical services. It is thus relatively easy for the director of this library to see the large discrepancy between the cost of these two activities, eliminating the need to decipher statistical reports (figure 8). And again, IFPS represents all categories in PLOT, such as Public Services and Technical Services, with numbers.

Other types of interrogations can also be illustrated using PROGRAM. IFPS has
a feature known as GOAL SEEKING, where the desired outcome of a particular model can be input into the system and changes within the model observed. For example, suppose the library director at Sinclair Corporation believes that funds for collection development should comprise 50 percent of the budget per annum, rather than the projected percentages calculated in the original model. By using GOAL SEEKING, we can readily find the dollar amount associated with this new percentage. In the original model, percentages for collection development are 34 percent, 36 percent, 38 percent, 40 percent, and 42 percent, requiring allotments of $20,000.00, $23,000.00, $26,450.00, $30,417.50, and $34,980.13. Now with the 50 percent requirement, amounts are $39,199.91, $41,366.00, $43,687.62, $46,178.05, and $48,851.78 for years one through five. This is a substantial increase in the base line figure for collections, yet actual expenditures for the collection rise more slowly than in the original model. Using the SOLVE com-
mand then shows the implication of this goal on the library’s entire budget (figure 9). Specific areas within a model can be isolated and solved. This is useful not only for debugging the model, but also in making more specific presentations and reports. Suppose that information is needed only on the public services activities of the library. Using the ANALYZE
command, information on the cost of public services activities is effectively separated (figure 10). Figure 10 thus shows only the costs of reference, reader services, total searching, and total loaning. An overload of unnecessary data is avoided with the use of this option.

Another feature of IFPS that is especially helpful when designing a model is CROSSREF. This command gives a detailed alphabetical listing of all variables in a model, with line numbers to indicate where the variable is defined and where it is referred to within the model. The result of performing a CROSSREF on PROGRAM is illustrated in this project (figure 11). This command is most useful for long models with many different variable names and complicated calculations.

Using Datafiles

While interrogations are certainly useful tools, they are only temporary. Once the interrogation has left the screen, whether it is a WHAT IF, PLOT, ANALYZE, or GOAL SEEKING command, the new information input by this interrogation is lost. To avoid this, a DATAFILE can be used. This file contains information to be substituted into the model. In contrast to WHAT IF and other interrogation commands, creating a DATAFILE saves new information for later use, without altering the original model.
For example, based on records and research, the Sinclair Corporation Library is able to make a new estimation of the costs, as well as the user fees, associated with online literature searching services. The director has determined that costs are rising by 10 percent per year, from a base figure of $4,000.00. Billings show that approximately 15 percent of all users who request computer searches reimburse the library for this service. Based on these estimates, a DATAFILE called NEWDATA can be created (figure 12).

When PROGRAM is solved with the DATAFILE, the effect of these estimates on the Sinclair Corporation Library's budget is illustrated. Computer searching costs are then $3,733.33, $4,106.67, $4,517.33, $4,969.07, and $5,465.97, rather than the amount of $3,650.00 requested for each of the five years (figure 13). This is a relatively simple DATAFILE; however, very elaborate DATAFILES can be created which replace entire sections of a model, but leave information in the original model intact.

Report Writing with IFPS

An attractively prepared budget proposal can be an invaluable tool for a library director. While some of the materials generated through IFPS thus far are adequate for daily operations and internal planning, they may not be appropriate to submit to top administrators or funding agencies. Fortunately, IFPS has a command, GENREPORT, which makes it easy to obtain specially formatted reports.

Suppose that the director at Walker Medical Library wants to present information on salaries to its hospital board. A report format which will highlight this information is prepared using the REPORT command (figure 14). In REPORT, variable names and other headings can be changed, commas and underlines can be added, and columns can be named. When the REPORT is completed, the original model is solved using the GENREPORT command. The result is a very appealing proposal (figure 15). REPORTS can be used for different MODEL/DATAFILE combinations and for all interrogations. However, individual REPORTS can only be used with one model, unless models have the same variable names.

The REPORT option can be used with more elaborate models. For example, using PROGRAM and a REPORT called BUDGET, the Sinclair Corporation Library can create an impressive proposal (figures 16–17). Through REPORT, underlines and dates can be added to PROGRAM. In addition, variable names and headings used in the original model can be altered to make Sinclair Corporation Library's proposal more attractive and easier to understand.

Conclusion

While many librarians will always be apprehensive about budgeting and other financial planning activities, tools such as the IFPS can help them prepare and present more accurate and attractive reports and proposals. While not a panacea for all budgeting problems, IFPS is relatively easy to learn and is flexible enough to allow models to be tailored to fit the specific needs of an institution. Not only does IFPS compile and calculate statistical data, but it also can generate reports and graphs that make presentations more effective. While programs such as LOTUS 1-2-3 and VisiCalc may prove just as useful for simple spreadsheets, librarians who have access to IFPS should investigate how it can help them manage the present and prepare for the future.

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### Figure 13. Model PROGRAM with NEWDATA

**PROGRAM BUDGET FOR THE SINCLAIR CORPORATION LIBRARY WITH FIVE YEAR PROJECTIONS**

#### OPERATIONS:

**PUBLIC SERVICES:**

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*spring 1988*
Figure 14. REPORT Salaries

REPORT SALARIES VERSION OF 02/08/86 12:21
1 WIDTH 100 20 10 2
2 *
3 CENTER PROJECTED BUDGET FOR PERSONNEL
4 CENTER FOR FIVE-YEAR PLAN
5 *
7 UNDERLINE=
8 PROFESSIONAL
9 STAFF
10 STUDENTS
11 *
12 UNDERLINE-
13 PERSONNEL

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`spring 1988`
Figure 17. Sinclair Corporation Library Budget

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References

3. Execucom Systems Corporation, 9442 Capital of Texas Highway, North, Arboretum Plaza 1, Austin, Texas 78759; (800) 531-5038.

Sara Anne Hook-Shelton is head librarian at the Indiana University School of Dentistry Library in Indianapolis, Indiana.
An Alternative National Electronic Mail Network for Libraries

David Stern

BITNET and other electronic mail networks, i.e., ARPANET and CSNET, are being used by librarians with access to IBM or VAX mainframes or minicomputers in order to have instantaneous note or file transmission without the telecommunication charges associated with services such as ALANET, DIALMAIL, OnTyme, or other commercial electronic mail systems. The extremely expensive software and hardware requirements are a limitation; however, many large universities, laboratories, corporations, and research facilities have access to VMS- or RSCS-compatible computing facilities with telecommunication capabilities. These interfaces are not always located within the library, but are quite often accessible if interest is expressed.

During the brainstorming sessions that occur each year at Special Libraries Association's Annual Conference, many of the physics-astronomy-mathematics librarians discovered that they had access to very powerful computer facilities within their individual institutions. Since many of the researchers and/or faculty members at these institutions were using these computers for file transfer of data to other institutions or computing facilities, the librarians began to investigate using these electronic mail capabilities to accomplish note and file transfer. This article will describe the progress made to date in the area of developing gateways and network interfaces. (I) If nothing else, this article may serve to introduce some librarians to an immensely useful and often undiscovered computer resource that may reside within their own institutions.

Our Reasons for Electronic Mail Usage

The Physics-Astronomy-Mathematics Division (P-A-M) of SLA has been struggling for years with the problem of communicating the identification of published conference proceedings in a timely manner. Especially in the area of astronomy, the conference proceedings are often published by different publishers each year or come out only as a numbered observatory publication with a limited number of copies available. If these publications are not identified quickly, it can be impossible to obtain a copy for the library. In the past, the P-A-M Bulletin has been the only tool for information dis-
semination among our group. It is an invaluable tool; however, it only comes out a few times a year and cannot provide the timely access we need. The instant transmission available through the new electronic mail network will provide a means for rapid information transfer among interested librarians.

Physics, astronomy, and mathematics libraries tend to be separated by large distances geographically, and telephone or mail communication can be either expensive or slow when used for reference or interlibrary loan purposes. For the specialized needs of the P-A-M community on an international level, the use of an electronic mail system can save valuable time and money in procuring reference or holdings information.

In cases where information is needed quickly in another location, such as database information located only in France and available only through a few sites in North America at this time, the transmission of a request through the electronic mail network can save valuable research time. In addition, the transmission of actual data back via the electronic mail network could save a research project that might not have been possible otherwise.

Finally, the use of this electronic mail network forces librarians to become more computer literate with mainframe or mini-computers, fostering better relations and communications between scientists and librarians.

Starting the Network

At the 1985 SLA Annual Conference in Winnipeg, a discussion took place about possible topics for the next year's Astronomy Workshop. A number of librarians suggested I look into electronic mail networking as a possible solution to our ever-present communication and current awareness needs. After contacting the appropriate computer information center personnel at Arizona State University, where I was employed at that time, I was able to establish a BITNET account (at no charge) on the university's central computer facilities. I attempted to contact the few librarians who had provided their passwords at the previous conference. I was moderately successful, with difficulties arising when I attempted to contact non-BITNET electronic mail service users (ARPANET, CSNET, etc.).

I then went back to the computer center personnel, and we developed a protocol that successfully interfaced with ARPANET users by creating a pathway through Wisconsin-Madison. However, I found that many computers and/or systems used by other institutions run on different software (VMS, CMS) or on different hardware configurations that require unique protocol production.

At this point, I realized that my dream of giving simple instructions for sending notes via BITNET or ARPANET would not be possible. Librarians will need to contact their local computer personnel to find the appropriate protocol to send either notes or files. There are some standard cross-network protocols listed in the literature. (2) The passwords and user nodes are still valid with slight modifications.

At the 1986 Boston SLA Annual Conference Astronomy Workshop, the librarians present discussed the progress made, exchanged passwords, and talked of future uses for the developing system. The minutes of the discussion were printed in the P-A-M Bulletin, as well as the complete list of passwords. Since that time, a number of new passwords have been added to the system (all via the network itself), and we continue to request that interested librarians test their capabilities by sending a short note to myself at STERN@UIUCVMD. New passwords and progress on the system will be reported in the P-A-M Bulletin.

As a result of this familiarity with national and international BITNET capabilities, we have instituted a local electronic mail system for interested librarians throughout the various departmental libraries of the University of Illinois at no cost and with great benefits to all participants.

We are now at the stage where we feel
comfortable in publicizing our success and in asking for the expertise of others in the library community who may have additional uses or suggestions about the electronic mail network. We have identified areas for investigation in the future and these include creating additional interfaces for other networks, developing a possible bulletin board for current awareness items, creating an online directory for libraries/librarians, attempting multi-user conference communications in real-time, expanding international electronic mail transfer (which has been accomplished since this article was submitted), and any other reasonable uses that may be identified.

Future Considerations

Two issues remain to be discussed:

1. While this system solves the problems of those libraries with access to large computer facilities, it does not address the problems of the smaller or branch libraries that have the same need for timely information and quick, inexpensive communications. This problem is librarywide, and no solution is obvious to this writer other than the use of electronic mail from a commercial vendor (which includes connect charges). I will leave this issue to others in the field who have a far greater grasp of the possibilities that exist on the local, (3,4) regional, (5) and national levels. (6,7)

2. The second issue is one of economics: Can we continue to use this network without incurring charges from our parent institutions? There are no charge-back mechanisms currently in place in our institution; however, other institutions may have different policies, and these policies may be revised at any time. I can not see library usage of the BITNET network as being significant in terms of volume; however, it is significant in terms of services and possibilities for those of us in the information field who are willing to stretch our knowledge and experience to the leading edge of the growing information exchange technologies.

Summary

Libraries, and the worldwide community in general, are rapidly exploring the capabilities of electronic mail for a number of services. (8,9,10,11) There are a number of commercial vendors supplying various levels of support, from fixed-format interlibrary loan request transactions through free-text file editing and transmission. While ALANET provides the library community with a nationwide gateway service to more than just electronic mail, the BITNET network we have initiated amongst the physics-astronomy-mathematics libraries provides some of these services with no connect charges at the present time. We are beginning to investigate the capabilities of this newly discovered national electronic mail network.

Acknowledgments

The author would like to express thanks to the members of the P-A-M Division of SLA for their contributions of time and effort in making this network possible and functional.

References


For more information about BITNET, contact: Elizabeth Kilcoyne, Administrative Assistant, BITNET, Network Information Center, P.O. Box 364, Princeton, NJ 08540; 609/734-1878.

David Stern is head of the Physics/Astronomy Library and assistant professor of library administration at the University of Illinois, Urbana-Champaign.
The contribution of the news library to newsmaking has been largely invisible. This study used focus group interviews and two survey instruments to study how news library staff and editorial staff in a large metropolitan daily newspaper perceive the contribution of the news library to newsmaking. The study concludes that the well-established news library in this newspaper plays a significant but unacknowledged role in news production. News and library staff have frequent contact and news library staff expertise is recognized, but library staff do not get byline credit for their contributions to news stories.

The contribution of the news library to newsmaking has been largely invisible. Plays, films, textbooks, and scholarly studies have taken the daily newspaper as their subject with virtually no reference to the "morgue," as the news library traditionally was called. However, the news library in the metropolitan daily is increasingly significant in the production of news. Professionalization of the library staff and the acquisition of new technologies that enhance information gathering have contributed to the increased importance of the library. Further, the electronic library in some large newspapers is regarded as a potential additional profit center in the information industry. (1, 2)

Lou Thomas, head librarian of the Morning Advocate & State Times, Baton Rouge, Louisiana, identified these advantages of establishing news libraries: centralization of resources, access to both traditional and new information skills of librarians; provision of background information for news stories, accuracy in reporting and editing, saving time of reporters and editors, and recycling of information the newspaper has paid to acquire. (3) Thomas addressed executives of newspapers having few or no organized library resources.

Most metropolitan dailies, however, do
have modern news libraries. This article reports on a study of both library and news staff in a metropolitan daily newspaper and how each group views the contribution of the library to producing news each day. The study was conducted on the eve of the library's conversion from a system of paper clippings to electronic files. Since no study of a news staff's use of its library has been published, it is important to collect data on the use of a traditional news library of the kind that gradually emerged in metropolitan newspapers in the past 100 to 125 years. This material should form a useful vantage point for viewing developments in the new electronic news libraries.

The Research Setting

The library under study serves the news and editorial departments of a newspaper with a weekday circulation of about 385,000. The library is on the same floor as the news and editorial departments, providing convenient access. It operates 17 hours daily on an open, honor system in which news staff are permitted to search for clips, vertical file materials, books, and other items and to remove them temporarily for use at their desks. In addition, the library includes a reading and browsing area, which news staff members use while reading periodicals and books shelved nearby.

During 1986, at the time of the study, library staff included 11 full-time and 5 part-time workers. Three were professional librarians, half had graduate degrees, and nearly two-thirds had six or more years in newspaper library work.

Major work in this library involves meeting news staff requests for information and maintaining the library collection of materials. The library has a 4,500-volume reference collection, with heavy emphasis on local and state reference sources. It also has bibliographic tools and microfilm of its own backfiles, the New York Times, and the Wall Street Journal. The library staff members offer in-depth research for reporters and editors, including research in the library's own resources, as well as other area libraries, and database searching in NEXIS and Dialog.

By far, the major collection and classification work consists of clipping and marking news stories from each edition of the daily newspapers. A separate file is developed for each individual named in a story. Thus, if a big drug bust occurred, resulting in the arrest of 40 people, the staff would create 40 clips and envelopes for those individuals, with additional classifications under which the story could be found. These classifications include the writer's byline, story subject, setting, and proper name classifications. Each classified story is clipped, folded, and inserted into an envelope labeled with the appropriate classification for the item. Envelopes are filed alphabetically, according to classification. Maintaining photo files and identification material for the photos is another major job.

Along with routine fact requests, library staff members also assist reporters with background information searches. For these purposes, they use the reference collection, database searching, and materials from other libraries in the metropolitan area. Requests for such information come from those on the special reporting team, interpretive and investigative reporters, editorial writers, columnists, and feature writers. Breaking news also is enriched by background research. For example, a librarian researched the previous safety record of an airliner that crashed, bringing much relevant material on the record of the aircraft, which the reporter included in the news story.

Method

The research questions for this study were: How does the news library staff perceive its contribution to newsmaking? How often and in what ways do news staff and library staff interact? What library materials and services are used by news staff? This study employed two major methods—focus group interviews.
and survey research. We interviewed three professional librarians who were members of the library staff, and we used the interviews to develop a survey instrument and to assist with interpretation of results. We also conducted three focus group interviews with editors, reporters, and an editorial-page staff member in order to enhance a survey of news staff members. All 16 library staff members answered a 28-question, 59-item survey. Of the news staff, 69.5 percent answered the 33-question, 70-item survey we sent. This study, however, reports only on responses of the library staff and the 136 reporters, editors, columnists, and editorial writers who completed the survey. Another 60 respondents who are news assistants, photographers, graphic artists, copy aides, and clerical workers are not included in this analysis.

Results

On several significant questions, news and library staff members agree concerning the role of the library in the production of news. These areas of agreement involve journalists’ use of facilities and sources, consultations with library staff, and the perceived significance of library materials.

Regarding frequency of library use, 13 of 16 library staff members said they have “frequent” in-person contact with news and editorial staff, and 11 said they have frequent telephone contact with the staff. Reporters and editors responded similarly in their report on library use: 56 percent said they went personally to the library one or more times a day and 26 percent said they telephone the library one or more times a day. The contact, whether personal or by telephone, involves assisting news and editorial staff members with a variety of information-search tasks that contribute to newsmaking.

The following kinds of assistance were reported by nearly all library staff:

- helping news staffers use the reference sources;
- conducting electronic database searches; and
- identifying and selecting photos, art, or graphics.

Two other services, however, are performed by fewer than half of the library staff. These are:

- identifying potential interview sources and
- identifying and retrieving materials from other libraries or collections.

Overall, the kinds of contributions made by the library staff are central to the newsmaking mission. Reference sources and other information-checking tools contribute directly to the quality of news reports. Further, library staff members provide background material that helps to establish the context within which news is presented. Although fewer than half of the library staff identify potential interviewees or retrieve materials from libraries elsewhere, these activities can play critical roles in the development of specific news stories. These contributions, however, have gone unrecognized in traditional studies of newsmaking.

Library staff members were asked to identify points at which editors and writers came to the library for information. Thirteen said that typical news staff members come to the library at the beginning of a project, 10 said they found people coming to the library just before writing a story or editorial, 6 said news staff members approach the library after conducting preliminary research in non-library sources, and 3 said that news staff members come to the library before turning in a story or editorial. Respondents were asked to check all categories that applied, and, on average, each respondent identified two points at which news staff seek library information. Of the journalists answering the questionnaire, a majority (69 percent) said they checked clips at the beginning of a project.
Library and news staff generally agree that evaluation of library sources is the responsibility of the journalist. Asked if a typical news staffer seeks their help in identifying the “best” library material for their projects, one said it happens “frequently,” six answered it happens “occasionally,” seven said it happens “rarely,” and one said it never happens. For their part, 66 percent of news staff members said they decide on quality of material by themselves, and 32 percent said they ask library staff to assist in identifying the “best” material.

Library staff members gave mixed evaluation of the information-seeking skills of the news staff. One judged the skills to be “exceptional,” while four found them “above average,” nine found them “average,” and two said staff were “below average” in information-seeking skills.

News staff members sometimes develop special “client” relationships with particular library staff members. All library staff reported having a number of reporters and editors who personally seek their help. Five library staff said that more than 10 news staff seek them personally, two said that between 6 and 10 ask for them, and seven said that between 1 and 5 seek them specifically. These relationships probably reflect preferences based on work shift, subject specialties, personal style, and competence with special formats, such as photos, maps, and charts.

Library staff members agreed that material originating in the library is incorporated into news stories. Twelve said that library or database material that they had helped to locate “frequently” is reflected in stories or editorials, while two answered that this is the case “occasionally,” and one responded “never.”

Despite close working relationships and clear contributions of library research to newsmaking, library researchers rarely get byline credit for their work when stories appear. In the focus group interview, it was clear that the library staff members realize the value of their research in news editing and reporting. They cited the Los Angeles Times for its recognition of library researchers’ contributions.

Time pressures affect the library as well as the newsroom. One librarian stated that the depth of research for background on a subject may be influenced by the number of factual requests that compete for her attention at deadline time. However, she compared the news library experience favorably with that of the public librarian’s opportunity to do in-depth research. Meeting information requests before deadline was not a problem. Seventy-nine percent of the library staff said that deadline problems rarely occur. Most reporters said they did not disclose their deadlines to the library staff.

Conclusions

The well-established news library of a metropolitan daily newspaper plays a significant, but unacknowledged role, in the production of news. The library is part of the “path” that reporters and editors routinely take as they conceptualize, develop, write, and edit the day’s news. News and library staff have frequent contact, and, in the library studied, something of a personal client relationship evidently has developed between journalists and certain library staff members.

The library staff’s expertise constitutes the bridge between the journalist and the library collection, at least in a library having paper clips, vertical files, extensive photo and graphics files, and reference works. Database searches are available only through the library staff, a fact which confirms the status of librarians as expert information gatherers.

Top priorities in newsmaking are being accurate, meeting deadlines, and saving time. The news library contributes significantly to these important priorities. Reporters generally do not transmit their deadline pressures to library staff, according to this survey, but library staff nonetheless apportion their research time according to the pressure for information that develops during the news day.

Finally, most news stories that have
been developed with the assistance of library staff and library materials do not carry credit lines for the library staff. In a few libraries, including the one under study, policy does permit the credit, but few credit lines had appeared up to the period of the study. If librarians do seek and win more public recognition for their contributions to newsmaking, we can expect news libraries to become more visible to both the general public and to news executives who are considering the addition of a library to their newspapers.

Acknowledgments

Funding for this study was provided by the Minnesota Journalism Center.

References


Jean Ward and Kathleen A. Hansen are faculty members at the University of Minnesota, School of Journalism and Mass Communication, where Douglas McLeod is a doctoral student.
CD-ROM Use in an Association Special Library: A Case Study

Linda Sabelhaus

With the onset of CD-ROM databases, libraries will begin to utilize this technology instead of online databases. This article presents one library's experience purchasing and using a CD-ROM database.

Introduction

The American Society for Training and Development (ASTD), a professional association in Virginia, offers as part of its membership the services of an information center. The association's 23,000 members are able to request information whenever necessary from our information center, which is a special library that services a large, geographically disbursed clientele. We provide basic telephone reference services, such as looking up names and addresses or quoting various statistics from reports.

An in-house database of indexed articles from the Training & Development Journal, ASTD's primary publication, is used to obtain bibliographies on various topics. Designed in the late 1970s, this database is archaic when compared to today's online databases. The articles are indexed by subject codes, and bibliographies can only be ordered by using the codes. No subject, title, or author searching can be done using this database.

Members often need bibliographic information which can only be provided through online databases. To conduct online searches for every member requesting assistance would be uneconomical, so only questions that arise frequently or are difficult to solve using our in-house sources are answered through online database searches. For ASTD, the most often searched databases are ERIC and ABI/INFORM, since they contain material relevant to the training field.

During 1986, Dialog announced its plans to create the ERIC database on CD-ROM. For a library that uses ERIC as frequently as we do, this seemed like an excellent alternative to online searching. We were not concerned with the lag in currency; quarterly updates would serve member needs. We compared the cost of purchasing the hardware, as well as the subscription to the CD-ROM database, with the current annual costs of searching ERIC online. While it was still initially more expensive to purchase the CD-ROM, it would be of more benefit to offer ERIC searches to all our members. We could offer this service to all members because we could budget for a set annual cost, unlike variable online charges. The writing and research staff at ASTD headquarters could also benefit from CD-ROM because they would be able to personally search the database.
Another benefit for the staff would be the ability to use ERIC for any question, not just for difficult ones we could not find on the in-house database. It was decided that we should purchase ERIC On-Disc from Dialog.

**Installation of the CD-ROM System**

In March of 1987, we received both the Philips CD player and the ERIC On-Disc product. The product was so new that Dialog had not even finalized the users guide. Even though this was not the formal guide, the instructions from Dialog for installation of the software which operates the CD reader were fairly easy to follow.

Installation of the controller card for the CD reader and of the CD reader itself were not so clear. These instructions were from the Philips company, who most likely deal primarily with computer experts. Our data processing department only became aware of CD-ROM when we brought this new technology to their attention, and the contractors they use were not very familiar with the technology either. As a result, we had no internal support and had to rely on our own limited experience.

The CD-ROM Controller Card had to be installed and an address range set on the card. The address range must be valid, which means it cannot be the same address that is occupied by another peripheral device. We had no idea what any of the address ranges for our other devices were and we just chose the standard one shown in the Philip's installation guide. The CD reader had a unit number switch pack on its rear panel, and the unit number of the CD had to be set. The unit number is an unique number assigned to each peripheral device. Once again, we had no idea what the other device's unit numbers were, so we chose a random number. On the first attempt, the CD reader did not work, and we chose a different unit number to start the process of elimination. Luckily, this change enabled the reader to operate, and we were on our way. We did call the people at Dialog, who were very helpful but could not really assist us with these hardware issues. These types of questions should have probably been directed towards the Philips company. When the CD reader was finally installed correctly, the ERIC On-Disc worked quite well.

When we received the update of the ERIC disc from Dialog, we found they had also updated the search software. This resulted in a time-consuming reinstallation of the software package. The software had been revised because of a bug in the programming. While the installation was an inconvenience, it was reassuring knowing that Dialog is reviewing and improving the On-Disc product.

**CD-ROM Searching v.s. Online Searching**

CD-ROM searching differs quite a bit from online searching. It operates much faster; no one else is using it during peak hours. When it is processing a truncated term, all the variations for the term are shown on the screen. Now we can actually see what is occurring during those long waiting periods we would sometimes experience online.

The On-Disc product also has an easy method of searching for beginners. It is menu driven and allows for subject, author, title, journal name, and publication year searches. The user can limit to specific fields as well. A searcher would use the menu system to search related terms first, in actuality conducting a Boolean "or" search. The search can be modified with additional terms if necessary, the equivalent of a Boolean "and." It is easy to learn and would be excellent for staff members who wanted to conduct their own searches.

The most important difference between online searching and "on-disc" searching, as we like to call it, is the lack of time constraints. There is no clock ticking away the minutes, or attached dollar amounts. Search techniques have improved. We use the thesaurus and the
expand command on the database more frequently. We have increased substantially the amount of experimenting with search terms that we do. Instead of limiting a search to the terms determined appropriate before going online, a user can experiment with the terms found during the search without worrying about expense. For the first time on ERIC, references have been located on almost every subject for which members have made inquiries. In the past, with the online database, we would not always take the time to really delve into it. We would usually find a few relevant hits and have to limit ourselves to those. ERIC has become more versatile than we ever thought possible.

**Cost/Benefit of Purchasing ERIC on CD-ROM**

Online ERIC searches have a minimum average cost of $10, based on our information center's average online connect time. We are conducting approximately 13 more searches per month, with the CD-ROM version. This would cost us $130 per month, or $1,560 per year if we searched ERIC online. The cost of the ERIC On-Disc was $750, which, if subtracted from the $1,560, means we have potentially saved $810 this year. Even if we take off the one-time expense of purchasing the Philips CD Reader, $740, we would still have $70 in savings. Of course we would not conduct ERIC searches for every inquiry if we did not have the CD-ROM, but they are actual savings based on the amount of service we can now afford for our members.

**Patron Response**

The members who have been informed about the new service have been very pleased. Often they already have a basic understanding of online databases and will offer us some key words to search. We have advertised this new service in our association's membership newsletter and have had many inquires asking us to explain our different services, the CD-ROM database, and ERIC. After eliminating the confusion, they usually request some type of subject search in order to experience first hand how a database can assist them. We may need to stress in further advertising that ERIC is a way of obtaining bibliographies on specific subjects. Explaining that it is stored on a CD-ROM seems to confuse too many members.

Overall, more members have been receiving more service since we obtained the CD-ROM. In 1986, we averaged 9.7 online ERIC searches per month. We have increased this amount to almost 25 searches per month. We expect this to increase even more as members become increasingly aware of the service.

The staff members who use our services have always asked for online searches to aid them in their research. We thought they would be very eager to learn to search themselves, since they are familiar with online searching. Even though we have individually invited several staff members to a training session, we have not had anyone interested enough to learn. One writer did admit to "computer-phobia," but has promised to come in and learn at some future date. One reason for this response may be the general sense that this technology is too complicated for the average person to understand and librarians are better trained to use it to its fullest advantage. In a more technical environment, where the staff members use computers for more than simple word processing, the response may be different.

**Our Future Plans for CD-ROM**

With ERIC on CD-ROM being such a success, we would like to obtain more databases on CD-ROM, such as OCLC's "Education Materials in Libraries: An OCLC Subset," or *Books in Print on CD*. The costs of purchasing a CD-ROM developed from a government supported database, like ERIC, is within our budget. However, we may not be able to purchase other companies' databases when they convert to CD-ROM.
We also plan to use CD-ROM as a distribution medium for ASTD-produced databases in the future. Although there are currently 16 domestic mastering and replication facilities and 24 data preparation services, mastering a CD-ROM can be a large investment. However, copying a disc only costs about $10, and combined with the mastering costs the total to be passed on to a member could be minimal. Of course, CD-ROM needs to become an accepted method of retrieving information by the general public, which is many years away. For now, using a CD-ROM database as an alternative to online searching enables the information center at ASTD to offer a level of service that could not be afforded in the past.

References


Linda Sabelhaus is an information center specialist at the American Society for Training and Development and is project manager for CD-ROM implementation.
Advertising Agency Libraries:
30 Years of Change

Elin B. Christianson
Anne M. Waldron

This study describes the characteristics of advertising agency libraries of today and compares them with two similar studies conducted approximately 15 and 30 years ago. Together, the three studies provide a unique look at the constants and changes over three decades in this type of special library. Characteristics discussed include parent agency, organizational relationships, staff, users, information resources, and information services.

Change is an important factor in special libraries. Special libraries do not remain static, but adapt and change according to changes in their environments, the changing needs of their users, and changes in information and information technology. In addition, special libraries change as they emerge and grow to maturity in their parent organizations. Change can be positive, reflecting expansion of library services in and acceptance by the parent organization. Unfortunately, change can also be negative, reflecting erosion of the library’s position. Change begins with the individual library, but, as more and more individual libraries change, the effect is to alter the profile of not only the individual library but also the group of special libraries to which it belongs.

From their inception in the early part of this century, advertising agency libraries, individually and as a group, have undergone a number of changes. While these changes can be identified through experience, they have also been documented through research. Three similar studies have reported the characteristics and statistical profiles of advertising agency libraries over a span of 31 years, from 1954 to 1985. Together they offer pictures of advertising agency libraries in 1954, 15 years later in 1969, and again approximately 15 years later, in 1985. They provide a basis for comparison of parent agencies, organizational status, users, library staff, information resources, and information services over the approximately three decades from the coming of age of agency libraries to the present.

The Studies

Edward G. Strable conducted a survey of advertising agency libraries in 1954. His purpose was to develop a picture of this type of library and to emphasize
their characteristics. Although advertising agency libraries had been in existence for over 30 years in 1954, his study came at a time when advertising agency libraries were coming of age in their field, accepted and recognized by agencies as important and indispensable parts of their organizations. Strable's study captured them, as he characterized it, in the important period when they were emerging from pre-history. (1)

Elin Christianson and Peggy Wolfe studied advertising agency libraries in 1969 as part of a larger study of advertising and marketing libraries, comparing similarities and differences and measuring them against the then newly formulated "Standards for Special Libraries." (2,3) Although not as directly comparable as Strable (1954) and Waldron (1985), the Christianson-Wolfe study does offer some valuable statistics for an intermediate time period.

Finally, in 1985, Anne Waldron studied the current characteristics and functions of agency libraries with the specific intention of measuring changes since 1954. (4)

All three studies were based on self-administered mail questionnaires. Both Strable and Waldron surveyed all known agency libraries. Christianson and Wolfe surveyed SLA Advertising and Marketing Division members' libraries, which included non-agency libraries as well as agency libraries. For the purpose of this article, comparisons are drawn only from the agency/media library responses.

Parent Agencies

Advertising agency size is measured in two ways: by employee size and by annual billings (total amount of charges to clients). The 1948 Census of Business, the most recent at the time of Strable (1954), reported that of 3,279 agencies, 61 (1.86 percent) had over 100 employees. (5) The 1983 Census of Business reported 10,469 agencies, with 128 (1.22 percent) having over 100 employees. (6)

In 1954, 77 percent of the agency libraries studied by Strable were located in agencies of over 100 employees. In 1985, 86 percent of agency libraries were located in agencies of over 100 employees, and all libraries were in agencies with annual billings of $1 million or more. Thus, advertising agency libraries did and continue to be concentrated in the large agencies which, although they account for only a very small proportion of all advertising agencies, dominate the business in size and billings. (This domination is illustrated by the fact that in 1985 the top 25 (.24 percent of all agencies) advertising agencies accounted for 62.2 percent of the billings of the top 500 agencies, and the top 500 agencies (4.8 percent of all agencies) in turn accounted for 43.2 percent of the $96.84 billion in total U.S. advertising.) (7)

Penetration—the percentage of large agencies with libraries—has also remained relatively stable. In 1954, 32.8 percent of the agencies with over 100 employees had active libraries. In 1985, 29 percent of the agencies with over 100 employees had active libraries. (8)

In spite of the many changes which have taken place in the advertising business over the past three decades, there has been stability in both the size and the percentage of advertising agencies with libraries. The growth rate of advertising agency libraries has remained fairly constant, more or less keeping pace with the growth in large agencies.

### Table 1. Advertising Agencies and Agency Libraries, 1954 and 1985

<table>
<thead>
<tr>
<th></th>
<th>1954</th>
<th>1985</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of advertising agencies</td>
<td>3,279</td>
<td>10,469</td>
</tr>
<tr>
<td>Agencies with over 100 employees</td>
<td>1.86%</td>
<td>1.22%</td>
</tr>
<tr>
<td>Agencies over 100 employees with libraries</td>
<td>32.80%</td>
<td>29.00%</td>
</tr>
</tbody>
</table>

Organizational Status

The library's name; organizational, reporting, and budgeting relationships; and clientele are all important in assessing the library's status within its parent agency and in identifying changes in status.

One definite trend has been toward the use of information center rather than library as a title. Strable (1954) found that about 90 percent of the agency libraries used the term "library" or "research library" or "agency library." On the other hand, by 1985 about 57 percent of the agency libraries were named "information center" or "information service," while only 30 percent used a name that included "library." This shift from "library" to "information" indicates that agency libraries have taken advantage of the societal shift to an information economy and are changing the names of their units to emphasize the information service nature of their activities. (9)

Location

Although there has been some variation, no great changes have occurred in the organizational location of advertising agency libraries over time. Strable (1954), Christianson-Wolfe (1969), and Waldron (1985) all found that over 50 percent of agency libraries were located in the market or media research departments of the agency. Separate departmental status was reported by just over 20 percent of the libraries in 1969 and 1985 and 37 percent in 1954. The third most frequently indicated location was within the general administrative area, reported by 10 percent of the agency libraries in 1954 and 1985 and 17 percent in 1969. (The higher figure for 1969 may stem from the presence in the Christianson-Wolfe sample of media company libraries.)

Agency libraries are also most likely to report to research or general administrative/management executives. In 1954 and 1969, over 90 percent of the librarians reported to one of these executives, either research (58 percent and 64 percent respectively) or general administration/management (32 percent each year). By 1985, research and administration/management accounted for 80 percent of the reporting relationships with a significant shift from general administration/management (19 percent) to "other" (19 percent). (10,11) It does appear, however, that over time, research or administrative organizational locations have proven to be appropriate organizational bases for advertising agency libraries.


<table>
<thead>
<tr>
<th>Organizational Location</th>
<th>1954</th>
<th>1969</th>
<th>1985</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research (Market or Media)</td>
<td>53.0%</td>
<td>59.0%</td>
<td>55.0%</td>
</tr>
<tr>
<td>Separate Department</td>
<td>37.0</td>
<td>22.0</td>
<td>21.0</td>
</tr>
<tr>
<td>General Administration</td>
<td>10.0</td>
<td>17.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Marketing</td>
<td>0</td>
<td>0</td>
<td>4.1</td>
</tr>
<tr>
<td>Public Relations</td>
<td>0</td>
<td>2.0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
<td>10.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reporting Relationship</th>
<th>1954</th>
<th>1969</th>
<th>1985</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Director</td>
<td>58.0%</td>
<td>64.0%</td>
<td>61.0%</td>
</tr>
<tr>
<td>General Management</td>
<td>32.2</td>
<td>32.0</td>
<td>19.0</td>
</tr>
<tr>
<td>Marketing Director</td>
<td>3.0</td>
<td>2.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Public Relations Director</td>
<td>0</td>
<td>2.0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>6.7</td>
<td>0</td>
<td>16.0</td>
</tr>
</tbody>
</table>

Base: Number of Libraries: 30, 41, 49

Budgets

One of the most interesting changes concerns budgets. It has not been uncommon for an agency library to have no formal budget because the agency itself did not require budgeting. This situation has changed.

In 1954 only 6.5 percent of the agency libraries reported having a separate budget; 93.5 percent reported that the library budget was part of another department's budget. By 1985, however, 53 percent of the agency libraries reported separate budgets, 32 percent reported having no budget, and 13 percent reported that the library was part of another department's budget. (12)

SLA's "Objectives for Special Libraries" advocates a joint effort between library administrators and their immediate supervisors in budget preparation, the rationale being the control the librarian gains over library planning and management in the budgeting process. (13) Strable (1954) found only 6.5 percent of the responding libraries with separate budgets and reported that many respondents could not answer the budget control questions. He commented that "the reason for this seems to be not so much a matter of reluctance to supply information . . . but the respondents' inability to answer the questions with any degree of accuracy." (14)

There has been a definite move from the no-budget state to one where librarians play an active role in the budget process. By 1985, more than half of the agency libraries had their own budgets.

Library Users

Who are the most active users of advertising agency library services? The four major units in an advertising agency are account management (executives who are in charge of the agency's client accounts), creative (those who create the advertising messages), research (advertising, market, and media), and media (placement of advertising). In 1985, advertising agency libraries reported that account management accounted for the most use, with research and creative departments second and third. This ranking has changed since 1954 when the librarians ranked research first, creative second, account management third, and media fourth. (15)

Although agency libraries usually indicate that they serve the entire agency, historically they have been established by, and within, the research departments who use them heavily. The creative departments are also traditionally heavy users, seeking background information, facts, and pictures. The emergence of account management as active users indicates not that use by research and creative units has declined but that agency libraries have successfully attracted more use from a large, important constituency in their agencies.

Library Staff

The increase in service to agency personnel is reinforced by the small, but significant, rise in average staff size, from 2 in 1954 to 3.3 in 1969 to 4 in 1985. Current agency library staffs have an average of 2.4 professionals to .49 paraprofessionals and 1.12 clerical staff. The total staff range is .5 (one part-time professional) to 19, with 78 percent of the libraries meeting the one professional to one nonprofessional staff ratio recommended by the SLA "Objectives for Special Libraries." (16)

Table 3. Advertising Agency Libraries—Users by Department, 1954 and 1985

<table>
<thead>
<tr>
<th>Department</th>
<th>Rank in Use</th>
<th>Rank in Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1954</td>
<td>1985</td>
</tr>
<tr>
<td>Research</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Creative</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Management</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Media</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Base: No. of Libs.</td>
<td>24</td>
<td>47</td>
</tr>
</tbody>
</table>

The Agency Librarian

The increased recognition by advertising agency management of the status of advertising agency libraries is also evident in the changes in agency librarians' status over the past 30 years. In 1954, 30 of the 31 librarians surveyed held the title of librarian or research librarian. By 1985, only 28.6 percent held one of these titles. The favored titles were manager or director of library/information center (38.8 percent), vice-president and manager of library/information center (8.2 percent), and information specialist (12.2 percent). These current titles reflect both the emphasis on information services and the increased recognition of the head librarians' status as managers within the organization. This is particularly true for the four librarians who have attained the status of vice-president within their agencies.

Information Resources

Book collections in agency libraries, as in many other types of special libraries, tend to be relatively small. Time has not changed this. In 1954, the median book collection was 400; in 1985, it was 500 volumes. In 1969, however, the median size of the book collection was 800 volumes. The larger figure is believed to be in part attributable to the presence of media company libraries in the Christianson-Wolfe 1969 sample.

Periodical collections, on the other hand, are more important for both research and sample copy purposes. Periodical collections have steadily increased in size. In 1954, the media number of periodical titles collected was estimated at 100; in 1969, 165; and in 1985, 183.5. This growth reflects a number of factors, the most important being the proliferation of trade, professional, and consumer titles. The median number of newspaper titles held has remained stable at five (four in 1969). (17)

Microforms have not made great inroads into advertising agency libraries. Christianson-Wolfe (1969) reported that about 23 percent of the libraries surveyed were using or considering microforms, primarily for internal reports or periodicals. (18) By 1985, Waldron found that 26.5 percent of the agency libraries used microforms. All libraries with microforms stored periodicals and over half stored newspapers in microformat. Other uses were for annual reports, internal research, ad collections, and proof books. (19)


<table>
<thead>
<tr>
<th>Component</th>
<th>Median</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOOKS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1954</td>
<td>400</td>
<td>1–2000</td>
</tr>
<tr>
<td>1969</td>
<td>800</td>
<td>50–9000</td>
</tr>
<tr>
<td>1985</td>
<td>500</td>
<td>0–7000</td>
</tr>
<tr>
<td>PERIODICALS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1954</td>
<td>100*</td>
<td>n.a.</td>
</tr>
<tr>
<td>1969</td>
<td>165</td>
<td>20–3260</td>
</tr>
<tr>
<td>1985</td>
<td>183.5</td>
<td>0–1540</td>
</tr>
<tr>
<td>NEWSPAPERS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1954</td>
<td>5*</td>
<td>n.a.</td>
</tr>
<tr>
<td>1969</td>
<td>4</td>
<td>1–52</td>
</tr>
<tr>
<td>1985</td>
<td>5</td>
<td>0–200</td>
</tr>
</tbody>
</table>

*estimated.
Table 5. Indexes Held By Advertising Agency Libraries, 1969 and 1985

<table>
<thead>
<tr>
<th>Title</th>
<th>1969</th>
<th>1985</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Periodicals Index</td>
<td>83%</td>
<td>77.6%</td>
</tr>
<tr>
<td>Funk &amp; Scott Index</td>
<td>37</td>
<td>46.8%</td>
</tr>
<tr>
<td>Readers’ Guide</td>
<td>63</td>
<td>40.8%</td>
</tr>
<tr>
<td>Biography Index</td>
<td>17</td>
<td>26.5%</td>
</tr>
<tr>
<td>New York Times Index</td>
<td>27</td>
<td>14.3%</td>
</tr>
<tr>
<td>Vertical File Index</td>
<td>27</td>
<td>14.3%</td>
</tr>
<tr>
<td>Access</td>
<td>*</td>
<td>14.1%</td>
</tr>
<tr>
<td>Wall Street Journal Index</td>
<td>17</td>
<td>12.3%</td>
</tr>
</tbody>
</table>

Base: Number of Libraries: 41 1969, 49 1985

*not yet published in 1969.


Indexes and Databases

Information service is the backbone of the advertising agency library. Information resources in advertising agency libraries tend to focus on advertising and related subjects and on the subject areas of client and competitor products and services. In addition, because advertising agencies constantly seek new business, agency libraries need to be able to locate information in business, finance, and other subject, product, and brand areas quickly and efficiently. Thus, there is a need for reference resources that provide access to a broad range of subjects. Indexes and databases are among the most important information resources of agency libraries.

Statistics on indexes held are not available from Strable (1954), but a comparison of titles listed in Christianson-Wolfe (1969) and in Waldron (1985) indicates that, with the exception of Access, the supplemental index to periodicals first published in 1975, the indexes held in 1969 continue to be the indexes held in 1986. Business Periodicals Index continues to dominate with 83 percent of the libraries holding it in 1969 and 77.6 percent in 1986. Readers Guide, held by 63 percent of the libraries in 1969, was held by fewer libraries, 40.8 percent, in 1985. On the other hand, F & S Index, held by 37 percent of the libraries in 1969, was held by 46.8 percent in 1985. The New York Times Index, held by 27 percent of the libraries in 1969, was held by only 14.3 percent in 1985; however, 34.7 percent of the libraries rated the online New York Times Index as one of their most important databases. Two other titles held by more than 10 percent of the agency libraries in 1969 were PAIS (20 percent) and Applied Science and Technology Index (15 percent). In 1985, no libraries reported holding PAIS and only 6.1 percent reported holding Applied Science and Technology Index. (20)

Commercial online databases have proved valuable to reference and research services in agency libraries. In 1985, 96 percent, or 45 of the 47 agency libraries, were able to access online databases via commercial vendors. Dialog was the most popular vendor, contracted by 81.2 percent of the libraries, followed by Nexis with 71.3 percent of the libraries. Others are shown in table 6.

Agency librarians were asked to list the three databases most important to their searches. The individual databases regarded as most important were Advertising and Marketing Intelligence (AMI), PTS PROMT, New York Times, ABI Inform, Trade and Industry Index, and Magazine Index.

Advertising agency librarians do not agree on the extent to which online services play a part in the reference function. Their opinions of the usefulness of databases are divided, ranging from those who choose online searching as the resource of choice to those who use it as a last resort. About half of the librarians
Table 6. Online Vendors In Advertising Agency Libraries, 1985

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Libraries Subscribing (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIALOG</td>
<td>81.6</td>
</tr>
<tr>
<td>NEXIS</td>
<td>71.3</td>
</tr>
<tr>
<td>Dow Jones</td>
<td>32.6</td>
</tr>
<tr>
<td>ORBIT (SDC)</td>
<td>10.2</td>
</tr>
<tr>
<td>Dun &amp; Bradstreet</td>
<td>10.2</td>
</tr>
<tr>
<td>Vu/Text</td>
<td>10.1</td>
</tr>
<tr>
<td>BRS</td>
<td>4.1</td>
</tr>
<tr>
<td>Textline</td>
<td>4.1</td>
</tr>
<tr>
<td>Others</td>
<td>28.6</td>
</tr>
</tbody>
</table>

Base: 47 libraries. 

subscribing to databases used them as additional resources to be used after print resources had been consulted. The other half viewed databases as more important sources, searching them before printed indexes. Favorable comments about databases included ease of use for locating information on specific products, brands, or subjects; currency of information; speed; and access to additional resources. Only a few librarians indicated that they had dropped printed indexes, periodicals, or directories in favor of online access. (21)

Although online services appear to have a strong foothold in advertising agency libraries, more changes are undoubtedly in store, as databases and database technology mature and searching experience accumulates.

In-house Indexes and Databases

Advertising agency libraries have traditionally engaged in various types of in-house indexing to supplement coverage in published indexes and to provide access to certain types of information. Strable (1954) and Christianson-Wolfe (1969) each found that 54 percent of the libraries surveyed prepared some type of index. By 1985, only 40 percent of the libraries were doing supplemental indexing with the most significant drops being in periodical indexes, from 46 percent to 24.5 percent; pamphlet indexes, from 54 percent to 6.1 percent; and corporate publications, from 24 percent to 18.4 percent between 1969 and 1985. (22)

The drop in in-house indexing can be largely attributed to better coverage in commercial indexes and databases of periodicals, other materials, and information of interest to agency libraries, which frees the library staff from the time-consuming work of providing supplemental access.

Christianson-Wolfe (1969) found 10 of their responding 106 libraries to be involved in what were then known as

Table 7. Most Important Databases in Advertising Agency Libraries, 1985

<table>
<thead>
<tr>
<th>Database</th>
<th>Most Frequently Used (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMI</td>
<td>61.2</td>
</tr>
<tr>
<td>PTS PROMT</td>
<td>40.7</td>
</tr>
<tr>
<td>New York Times</td>
<td>34.7</td>
</tr>
<tr>
<td>ABI Inform</td>
<td>32.6</td>
</tr>
<tr>
<td>Trade &amp; Industry Index</td>
<td>20.4</td>
</tr>
<tr>
<td>Magazine Index</td>
<td>12.2</td>
</tr>
</tbody>
</table>

Base: 43 libraries ranking 3 most important databases. 
information retrieval systems. Four were using computers, three were using Termatrix or Uniterm systems, and three did not specify the system used. Applications included internal reports (six libraries), cataloging (two libraries), pamphlet files (two libraries), and directories and books (one library each). (23) In 1985, 8 out of the 49 libraries indicated they were using in-house databases. The most common applications were library catalogs and acquisitions. Other uses reported included databases for popular music, TV commercials, and a directory. (24) While few exist at this time, in-house database applications may increase in the future. At present they seem to reinforce the impression gained from the decline of manual indexing that the need for—or priority of—supplemental access to information has been reduced.

**Reference Books**

Reference books are also important resources for agency library information service. Both Strable (1954) and Waldron (1985) asked similar questions about most-used reference books and a general comparison can be made of their results.

In 1985, the *Standard Directory of Advertisers* and its companion, the *Standard Directory of Advertising Agencies*, known as “the Redbooks,” were the first and third most frequently used sources in agency libraries. The second most-used source was the *Encyclopedia of Associations*. The *Statistical Abstract of the U.S.* ranked fourth, followed by encyclopedias (specific titles were consolidated into a general category). *World Almanac, Survey of Buying Power*, and the three business and financial directories—Standard & Poor’s Register, *Dun & Bradstreet Million Dollar Directory*, and *Moody’s Industrial Manual*—also ranked among the top 10 reference works.

In comparing the frequently used reference books of today with those of 30 years ago, many similarities can be identified. Although *World Almanac*, which Strable found to be the top title in 1954, has declined in ranking, it is still among the top 10 as is the *Survey of Buying Power*. The *Statistical Abstract*, encyclopedias, and the *Standard Advertising Register*, predecessor to the *Standard Directories* of today, continue to be important resources. The *Encyclopedia of Associations*, ranking second in 1985, had not yet been published in 1954. Although business and financial reference works were not among the most frequently used sources in 1954, they have become more important today, indicating an increase in business and financial reference work by agency libraries. This observation is reinforced by the fact that general reference tools—dictionaries, atlases, quotation books, library files, and census data—as well as the *World Almanac* and encyclopedias have diminished in relative frequency of use.

**Information Services**

There are many different services and different levels of service that an advertising agency library can provide. For any one agency library, the services depend on the needs of the users and on the staff and resources available to the library. Christianson-Wolfe (1969) and Waldron (1985) both surveyed services, listing possible services and asking respondents to indicate which ones they offered.

Logically, reference work continues to be the predominant service offered, with 98 percent of agency libraries offering it in 1969 and 100 percent in 1985. The ranking of some of the other components of information services have changed. Literature searching has increased significantly, from 76 percent of the libraries performing in 1969 to 91.8 percent in 1985. Similarly, the creation of market profiles, also time- and resource-consuming, has increased from 49 percent to 65.3 percent, and the summarizing of published information has increased from 34 percent to 49 percent. All three of these activities require more staff time and resources, indicating that more libraries are placing more emphasis on a higher level of service. On the other hand, the compilation of bibliographies has dropped, from 66 percent in 1969 to 42.9 percent in 1985. This decline may
Table 8. Reference Books Used Most Frequently in Advertising Agency Libraries (ranked by frequency of mention), 1954 and 1985

<table>
<thead>
<tr>
<th>Rank</th>
<th>1954</th>
<th>1985</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>World Almanac</td>
<td>Standard Directory of Advertisers</td>
</tr>
<tr>
<td>2</td>
<td>Statistical Abstract of the U.S.</td>
<td>Encyclopedia of Associations*</td>
</tr>
<tr>
<td>3</td>
<td>Standard Advertising Register**</td>
<td>Standard Directory of Ad. Agencies</td>
</tr>
<tr>
<td>4</td>
<td>Encyclopedias</td>
<td>Statistical Abstract of the U.S.</td>
</tr>
<tr>
<td>5</td>
<td>Library's own files</td>
<td>Encyclopedias</td>
</tr>
<tr>
<td>6</td>
<td>Dictionaries</td>
<td>Standard and Poor's Register</td>
</tr>
<tr>
<td>7</td>
<td>Census data</td>
<td>World Almanac</td>
</tr>
<tr>
<td>8</td>
<td>Atlases</td>
<td>Dun &amp; Bradstreet Million $ Directory</td>
</tr>
<tr>
<td>9</td>
<td>Quotation books</td>
<td>Moody's Industrial Manual</td>
</tr>
<tr>
<td>10</td>
<td>Survey of Buying Power</td>
<td>Survey of Buying Power</td>
</tr>
</tbody>
</table>

*not yet published in 1954.  
**predecessor to the Standard Directories.  

be a result of the more intensive services offered above and of the relative inutility of bibliographies in the agency setting.

Interestingly enough, in view of the use of databases in agency libraries, interlibrary loan has declined from 81 percent to 69.4 percent. Better collections, more use of full-text online databases, or more use of alternative document delivery services may have affected ILL. Photocopying has increased, from a service offered by only 59 percent of the libraries in 1969 to 91.8 percent in 1985. (In 1969, photocopy technology was just becoming suitable and available for widespread use.)

Information service in advance of need continues to be strong in agency libraries,

Table 9. Information Services Offered in Advertising Agency Libraries, 1969 and 1985

<table>
<thead>
<tr>
<th>Service</th>
<th>1969 (%)</th>
<th>1985 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference work</td>
<td>98</td>
<td>100.0</td>
</tr>
<tr>
<td>Literature searching</td>
<td>76</td>
<td>91.8</td>
</tr>
<tr>
<td>SDI services</td>
<td>61</td>
<td>83.7</td>
</tr>
<tr>
<td>Routing materials</td>
<td>*</td>
<td>77.6</td>
</tr>
<tr>
<td>Interlibrary loan</td>
<td>81</td>
<td>69.4</td>
</tr>
<tr>
<td>Market profiles</td>
<td>49</td>
<td>65.3</td>
</tr>
<tr>
<td>Summaries of published information</td>
<td>34</td>
<td>49.0</td>
</tr>
<tr>
<td>Acquisitions bulletins</td>
<td>54</td>
<td>44.9</td>
</tr>
<tr>
<td>Bibliographies</td>
<td>66</td>
<td>42.9</td>
</tr>
<tr>
<td>Other library publications</td>
<td>7</td>
<td>28.6</td>
</tr>
<tr>
<td>Photocopying</td>
<td>59</td>
<td>91.8</td>
</tr>
<tr>
<td>Central ordering—books</td>
<td>76</td>
<td>69.4</td>
</tr>
<tr>
<td>Central ordering—periodicals</td>
<td>68</td>
<td>63.3</td>
</tr>
<tr>
<td>Pulling sample tearsheets</td>
<td>*</td>
<td>71.4</td>
</tr>
<tr>
<td>Maintaining advertising files</td>
<td>*</td>
<td>59.2</td>
</tr>
<tr>
<td>Maintaining picture files</td>
<td>*</td>
<td>51.0</td>
</tr>
<tr>
<td>Maintaining corporate archives</td>
<td>*</td>
<td>49.0</td>
</tr>
<tr>
<td>Library orientation programs</td>
<td>*</td>
<td>46.9</td>
</tr>
<tr>
<td>Base: Number of libraries</td>
<td>41</td>
<td>49</td>
</tr>
</tbody>
</table>

*not covered in 1969 survey.  
although not as prevalent as in some other types of libraries. Selective dissemination of information was offered by 83.7 percent of the libraries in 1985, a gain from 61 percent in 1969. Routing of materials was offered by 77.6 percent in 1985; routing was not covered by Christianson-Wolfe (1969). Acquisitions bulletins saw a slight drop, from 54 percent of the libraries in 1969 to 44.9 percent in 1985. The maintenance of patron interest profiles remained stable, at 17 percent of the libraries in 1969 and 16.3 percent in 1985.

Centralized ordering has also declined, from 76 percent of agency libraries ordering books and 68 percent ordering periodicals centrally in 1969 to 69.4 percent (books) and 63.3 percent (periodicals) in 1985.

One group of questions asked by Waldron (1985), but not covered in the Christianson-Wolfe (1969), centered on special collections and services and found these services to be offered by a substantial proportion of agency libraries. These services include sample advertising teesheet services, offered by 71.4 percent of the agency libraries, maintenance of advertising (59.2 percent) and picture (51 percent) files, and corporate archives (49 percent). Finally, library orientation programs were offered by 46.9 percent of agency libraries in 1985. (25)

Conclusions

While the basic purpose of advertising agency libraries—to meet the information needs of the agency and its clients—remains unchanged, significant changes have taken place in their services and in their organizational status, changes brought about through changing technology, changes in information resources, and changing needs of the organization.

Advertising agency libraries have made a great deal of progress in the 30 years since the Strable study. They are firmly established as support functions in their parent organizations, have enlarged their user bases and their information resources and services, and have adapted new technology when it has benefited their services.

Agency librarians have increased their control of library planning and management through increased involvement in the budget process and have attained recognition of their managerial status with managerial job titles and, in a few cases, vice presidential status. There has been a distinct move from “library” to “information” names and titles. In part, title and name changes are part of the trend toward use of “manager” and “information,” but it is important to recognize that these changes also reflect the managerial and service orientation of the library and recognition and acceptance of this orientation by the parent agency.

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Just as change is important to keep a library in tune with its environment, stability can also be important. This is particularly true of the library’s organizational location and reporting relationships. There is no one appropriate location or reporting relationship for all libraries. There is, however, an appropriate location or reporting relationship for any one library, and that is a location which provides a solid, supportive base from which the library may operate. Agency libraries appear to have maintained relatively stable organizational locations and reporting relationships over time, with bases in research, as separate departments allied to research or as part of the administrative/managerial structure.

Thirty years ago, Edward Strable stated that “the history of advertising agency libraries at this point in time is almost a prehistory since its greatest development is probably part of the future rather than the past.” (26) Certainly agency libraries have developed as they have grown and changed with the times. Today’s agency libraries have the opportunity—and challenge—to build on this progress.

Information and communications technology will undoubtedly play a large part in the future development of advertising agency libraries. Although online databases are in place in most libraries, the continued introduction of new databases, particularly ones specific to advertising...
and marketing, and accumulating experience will lead to further changes. Online systems may increase the rate of establishment of new libraries or at least information specialist positions in advertising agencies. Videotext, computer networking, and electronic mail are just a few of the other technological advances which may enhance the functions and services of agency libraries.

Advertising agency librarians may also consider expanding the role and functions of their libraries. Involvement in the automation of various activities in the agency, the education of agency employees in the use of personal computers and databases, records management, and the extension of services by electronic means to branch offices are all possibilities for enlarging the information service functions of the library.

In addition to the opportunities and challenges for change that agency librarians face in their own libraries, this study suggests a challenge for advertising agency libraries as a group. This challenge is to increase the number of advertising agency libraries. The proportion of agencies with active libraries has remained fairly constant, at about 30 percent, over the past three decades. As the number of large agencies, prime candidates for the establishment of libraries, has increased, so have the number of libraries. These agencies have obviously found library/information service valuable. But what about the many large—and medium-sized—agencies who do not have libraries? How do they meet their information needs now? How will they meet them in the future? Surely here is a potential market for the establishment of new libraries, a market which advertising agency librarians are well-equipped to explore.

References

9. Ibid., 16.
10. Ibid., 15.
16. Ibid., 21-22.
17. Ibid., 26-28.
20. Ibid., 32-33.
21. Ibid., 39-44.
22. Ibid., 47.
24. Waldron, 48.
25. Ibid., 45-46.

Elin B. Christianson, a library/information services consultant, is an adjunct faculty member of the Graduate Library School at the University of Chicago and the School of Library and Information Science at Indiana University.

Anne M. Waldron, formerly with the J. Walter Thompson Co. Chicago Office Information Center, is now an information specialist at Kirkland & Ellis in Chicago, Illinois.
Expanding Horizons: Strategies for Information Managers
SLA's 79th Annual Conference
June 11–16, 1988
Denver, Colorado

OCCUPORTUNITIES and unprecedented challenges facing today's information manager is the theme of many of the sessions scheduled during the Denver Conference. These sessions will provide both newcomers and seasoned professionals alike with insights on the human side of information technology—increasing our value, strengthening our involvement and participation, and expanding the ever-changing horizons of information management.

General Sessions

Michael Annison will address General Session I, "Expanding Horizons." As president of the Westrends Group and former vice president of the Nasbitt Group, Mr. Annison is well informed on the major changes impacting our social, business, and educational institutions. He will pose the thought-provoking question "Where Are We Going?", and will look at future trends on the library/information profession, with emphasis on ways in which information professionals can meet the challenges presented by changing trends, restructuring relationships, and building new sets of systems to accomplish what we want to do.

At General Session II, "Strategies for Information Managers," Dr. Roger von Oech, president of CreativeThink, will examine the question "Do We Need a Whack on the Side of the Head?". Dr. von Oech believes that, in using a figurative "whack on the side of the head," we can open up new ways of meeting challenges and looking at problems. His presentation will emphasize techniques for dislodging blocks and hang-ups to creative impulses and overcoming inhibitions to creativity.

Strategy-Sharing Roundtables

As a result of the 1986 membership survey, over 50 percent of respondents requested more opportunities for peer interaction and idea exchange at the Annual Conference. Therefore, on Monday, June 13, and Tuesday, June 14, conferencewide, strategy-sharing roundtables are being presented, covering the following topics which were chosen at the 1987 Anaheim Conference: Communications with Management; Dealing with Change; The One Professional Library; End User Searching; Publicizing Library Services; Changing Patterns in Collection Development; Document Delivery Services; Communications with Staff; Performance under Pressure—Demands and Deadlines; and Doing More with Less—Managing in Times of Adversity. The Denver Conference Program Committee urges you to take an active role in these sessions by sharing your ideas, problems,
questions, and experiences (both successes and failures) pertaining to the topics offered. The success of these sessions depends on your participation.

Schedule of Events

The 1988 Annual Conference will feature approximately 100 stimulating and educational programs. These events are the result of many months of planning by the Denver Conference Program Committee, SLA divisions, and several other committees. A wide range of topics will be covered and are open to all conference registrants at no additional cost. A sampling of program titles follows:


DataTimes Users Group Meeting
Surviving Tough Times: Dynamic Marketing Techniques for Corporate Library Survival
U.S. Forest Service FS INFO Project
Specialized Libraries in the Denver Area
Expert Systems in Libraries
NEXIS Users Group Meeting
Vendor Update
Mathematics Workshop
CAS Roundtable Discussion
Urban Planning and Growth: Private/Public Sector Cooperation
Case Studies in Automation
VU/TEXT Update Session
SIC Codes
The Value of the Information Professional
IPI Indexers’ Meeting
Searching for Downstream Information
Happiness Is: Off-the-Shelf Microcomputer Software Working Well to Improve Selected Library Tasks/Projects
Solutions to Networking Problems in Special Libraries
Promoting the News Library: Increasing Visibility and Value
Creative Solutions to Library Dilemmas
Cartography at the National Geographic Society: From Crow Quill to Computer
The Leatherhead Database: How It Can Be Accessed and Utilized in the U.S.
Competitor Analysis; Vendor Update
Book & Author Luncheon
Non-Bibliographic Databases in the Sciences
Managing the Introduction of a Computer Network
Your Information Assets—Managing and Marketing
Quality Circles: Transforming Your Library
Marketing Yourself and Your Library’s Services
The One-Person Library: A New Survey on Salaries and Other Data
Business and Financial News Online: An Update
Competencies of Corporate Library Managers

Standards Roundtable
Food Safety Update: Issues Surrounding the Latest Food Safety Controversies
Powerful Job Descriptions: The Hay Plan and Information Services
Physics Workshop
More—Getting Your Library Online: The Problems of Special Collections
Records Management—Our Expanding Role as Information Specialists
MAH Conference Wrap-Up
I Can’t Say No
Biosis Roundtable
Understanding International Financial Statements
Search Strategy Clinic
Database and Online Catalog Production and Implementation
New Technology in Newsrooms and Its Impact on News Libraries

SLA Fundraiser

A working horse and cattle ranch and the fresh, mountain air of Denver will be the perfect setting for our Chuckwagon Supper. All you need to bring is a hearty appetite for the “cowboy” style dinner being served at the Flying W Ranch. Dinner will be served under the stars by the ranch hands and will be followed by a special western show. The cost of the tickets will include a donation to the Ron Coplen Leadership Address memorial fund. The conference meeting/exhibit schedule has been planned to allow free time on Sunday evening for conference registrants to attend.

Visit the Exhibits

The SLA Exhibit Hall provides the ideal opportunity for you to keep current on the most recent advancements in the information marketplace while viewing

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**Special Exhibit Hall Events**

**Sunday, June 12**
3:00 p.m.—5:00 p.m.

**Tuesday, June 14**
1:30 p.m.—2:30 p.m.

Exhibit Hall Reception
Free beverages for full conference registrants.

Desserts in the Exhibit Hall
Free coffee and dessert for all attendees.

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the products and services of approximately 200 exhibiting companies. Experienced booth personnel will be available to answer your questions and provide demonstrations of featured equipment. SLA's 1988 Exhibit Hall will be conveniently located in the Denver Convention Complex (Carrigan Hall).

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All-Steel Canada Ltd.
A. M. Best Company
American Banker
American Bindery-Midwest
American Chemical Society
American Institute of Aeronautics
& Astronautics
American Institute of Physics
American Library Association
American Management
Association/AMACOM Books
American National Standards
Institute
American Nuclear Society
American Society of Civil
Engineers
American Society of Mechanical
Engineers
Association for Computing
Machinery, Inc.
Auto-Graphics, Inc.
Baker & Taylor
Bullen Booksellers International, Inc.
Bank Marketing Association
Bechtel Information Services
Beverly Books, Inc.
BIOSIS
Blackwell/Boley
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Book Services International
R. R. Bowker Company
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Columbia Computing Services Inc.
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Commerce Clearing House, Inc.
Comstow Information Services
Conference Book Service, Inc.
Congressional Quarterly, Inc.
Corporate Technology Information Services
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Cuadra Associates, Inc.
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Data Resources
Data-Star
DataBooks
DataTimes
Data Trek Inc.
Defense Technical Information Center
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Derwent Inc.
Dialog Information Services, Inc.
Disclosure Information Group
Dow Jones and Co., Inc.
Dow Jones-Irwin
Drug Information Fulltext/IPA
Dun's Marketing Services
Dynamic Information Corp.
EBSCO Subscription Services
The Economist Publications
EIC/Intelligence, Inc.
Elsevier Science Publishers
Engineering Information, Inc.
The Faxon Company
Federal Document Retrieval
Federal Publications Inc.
Follett Software Company
Franklin Book Co., Inc.
Friends National Library of Medicine
Fuji Photo Film U.S.A., Inc.
G Two Marketing
Gale Research Company
Gaylord Bros.
Georgetown University Library
Information System
Robert P. Gillette Company
Gordon and Breach Science Publishers
Gossage Regan Associates, Inc.
Greenwood Press/Praeger Publishers
Grolier Educational Corporation
Gulf Publishing Company
G. K. Hall & Co.
Harvard Business School Press
Harwood Academic Publishers
William S. Hein & Co., Inc.
The Highsmith Co., Inc.
IEEE/INSPEC
IEEE Computer Society
Info Globe
Information Access Company
Information Dimensions, Inc.
Information Handling Services
Information Management & Engineering
Information Store, Inc.
Inforronics Inc.
Inmagic Inc.
INSPEC/IEEE
Institute for Scientific Information
Intercontinental Marketing Corp.
Interdok Corporation
International Monetary Fund
IRL Press Inc.
Jane's Publishing Inc.
Learned Information
Library Automation Products Inc.
Library Bureau, Inc.
Library Wholesale Services
Lotus Development Corporation
Majors Scientific Books
Marcel Dekker, Inc.
Marcive, Inc.
Materials Information / ASM
McGraw-Hill Book Co.
McGraw-Hill News
McGraw-Hill Publications Online
McGregor Subscription Service, Inc.
Mead Data Central
Mecleker Corporation
Micromedex, Inc.
Minolta Corporation
Moody's Investors Service
National Agricultural Library/
USDA
National Register Publishing
Company
National Technical Information
Service
Nedbook International, b.v.
NERAD, Inc.
NewsBank, Inc.
NewsNet, Inc.
Nichols Publishing Co.
NILS Publishing Co.
NOTIS
OCLC (Online Computer Library
Center, Inc.)
OECD Publications and
Information Center
The Oryx Press
Oxford Communications
Oxford University Press
PaperChase Company
Pergabase
Pergamon Orbit Infoline, Inc.
Pergamon Press, Inc.
Personal Bibliographic Software, Inc.
Pioneer Hi-Bred International, Inc.
Plenum Publishing Corporation
Predicasts
Continuing Education

The Professional Development Section will offer a diverse program of courses designed to advance the knowledge and skills of both new and seasoned information professionals. Participants will earn 0.6 Continuing Education Units (CEUs) and a certificate upon the completion of each course. CE courses will be conducted on Saturday, June 11, and Sunday, June 12, from 9:00 a.m. to 4:00 p.m.

Several professional development activities will be offered for more experienced information professionals or those with advanced knowledge in the field of instruction. These opportunities include "Artificial Intelligence: Concepts, Principles and Applications," "Competitor Intelligence and the Corporate Librarian," and "Going It Alone: Managing the One-Person Library, Part 2."

The complete listing of courses is as follows:

Management

Space Planning/Evaluation for Libraries and Business Information Centers
How to Work Smarter
Time Management in the Small Library
Going It Alone: Managing the One-Person Library—Part I and Part II
Impact Your Organization: Creative Management and Effective Communications

Information/Information Management

Thesaurus Construction
Information Services in Europe: Services and Providers
Competitor Intelligence and the Corporate Librarian
Legal Research for Non-Law Librarians
Copyright Law: Implications for Special Librarians
Database Construction Issues

Technology

Artificial Intelligence: Concepts, Principles and Applications
New Technology and Its Impact On You
Planning and Implementing New Technologies

Budgeting and Finance

Productivity in Library and Information Centers
Budgets and Libraries
Making Money: Fees for Information Service

Marketing

User Surveys as a Marketing Tool
Design and Development of Promotional Materials

Personal Development

Leadership Skills for the Corporate Library Manager
The Middle Management Institute (MMI) is the second phase of SLA’s Professional Development Program. The MMI consists of 75 hours of instruction divided into five units:

- Management Skills
- Analytical Tools
- Human Resources
- Marketing and Public Relations
- Technology and Applications

Each unit will include 15 hours of interactive instruction over two-and-a-half days. Participants will earn 1.5 CEUs for each completed MMI unit. An MMI certificate will be awarded to participants who complete all five units within an approximate 24-month period. In addition to the units offered on June 10–12 at the Annual Conference, SLA has scheduled Middle Management units in various locations throughout the United States over the next several years.

During the “Human Resources” unit, participants will refine their business communications and supervisory skills. Various techniques for effective negotiation, interviewing, performance appraisal, conflict resolution, and time management will be addressed.

The “Technology and Applications” unit will explore recent developments in the field of library and information management, and help participants discover new ways to manage technological change within organizations. This unit will offer guidelines for problem definition, as well as instruction on the design and implementation of computer solutions.

For additional information on any of the Professional Development Programs presented by SLA, please contact Kathy L. Warye, Assistant Executive Director, Professional Growth, at 202/234-4700.

Contributed Papers

Contributed Papers Sessions will be held on Monday, Tuesday, and Wednesday mornings during the Denver Conference.

The titles and authors of Monday’s session are as follows:

“Re-Evaluating Library Strategy: A Case History”
Speaker: Maggie Weaver, C-I-I. Inc., North York, Ontario, Canada

“Strategic Journal Management through Expanded Analytical and Communications Skills”
Speaker: George McGregor, Cetus Information Service, Emeryville, California

“Local Area Network Implementation: Moving Toward Phase III”
Speaker: Susan Hoehl, manager, Health Sciences Library, Allegheny General Hospital, Pittsburgh, Pennsylvania

“The Information Manager as Provider of Educational Services”
Speaker: Martha Jane Zachert, consultant, Tallahassee, Florida

For more information, please contact Kathy Warye.

Management Cinema

SLA management films will again be featured at the Annual Conference. Viewers will have the opportunity to learn more about sophisticated and timely management topics through this interesting format. Titles, descriptions, and times will be listed in the Final Conference Program. For information, please contact Kathy Warye.
"Expanding Horizons in Collection Development with Expert Systems: Development and Testing of a Demonstration Prototype"

Speaker: Steven Sowell, Biology Library, University of Indiana, Bloomington, Indiana

"Electronic Bulletin Board: LIBRARY"

Speaker: G. Lynn Tinsley, Engineering and Science Library, Carnegie Mellon University, Pittsburgh, Pennsylvania

The titles and authors of Wednesday’s session are as follows:

"Providing Software to an R&D Laboratory: A New Frontier for the Scientific-Technical Library"

Speaker: Laurie Stackpole, Naval Research Lab, Washington, D.C.

"Libraries in Transition—Dealing with a Corporate Breakup"

Speakers: N. S. Brackett, manager, Library, SLI Avionic Systems Corporation, Grand Rapids, Michigan, and F. R. Bagby, manager, Library, Lear Astronics Corporation, Santa Monica, California

"From Special Library to Information Research Center: Increasing the Library’s Strategic Contribution"

Speaker: Pamela Danziger, director, Information Research Services, The Franklin Mint, Franklin Center, Pennsylvania

"The Scientific and Technological Information (STI) Transfer Office: Strategic Information Management for Regional Economic Development"

Speakers: Robert Boissy and Ann Bishop, students, School of Information Studies, Syracuse University, Syracuse, New York

"Denver at Dusk"

This Saturday evening bus tour will provide a glimpse into Denver’s past as a frontier town, and the modern face of

The majestic Rockies form an attractive backdrop for Denver’s sparkling new skyline. (Photo courtesy of the Denver Metro Convention & Visitors Bureau.)

Denver will be captured as you view the beautiful skyline from a high vantage point on the outskirts of the city. This is a pleasant and interesting way to become familiar with the area. Light refreshments will be served during the trip.

Hotels

The co-headquarters for the Denver Conference are the Denver Marriott City Center and the Hyatt Regency Denver. Meetings will be held in these two hotels as well as in the Denver Convention Complex (Currigan Hall). Sleeping rooms will also be found in an additional five hotels (Brown Palace, Denver Inn, Executive Tower Inn, Holiday Inn Denver Downtown, and Westin Hotel Tabor Center. All hotels are within walking distance of the Denver Convention Complex, the site of registration and the Exhibit Hall. A full listing of room rates and the housing reservation form will be printed in the Preliminary Conference Program.

Transportation

Stapleton International Airport is located seven miles from downtown Denver. Taxi and airport limo services are available at costs of approximately $5–$11. Stapleton Airport is serviced by
most major carriers, including American, Continental, Delta, Eastern, Northwest, Piedmont, TWA, United, and U.S. Air.

SLA has selected United Airlines and Delta as official carriers to the Annual Conference. Special fares have been made available by both carriers, so be sure to see the Preliminary Program for details.

**Registration**

Registration will take place in the Denver Convention Complex (Currigan Hall). Advance registration for the Denver Conference is strongly encouraged to avoid long, time-consuming lines and to save you money. All SLA members will be mailed a copy of the Preliminary Conference Program in early March.

If you are not an SLA member and wish to receive a copy of the Preliminary Conference Program, or if you have any questions about the conference, please contact the Administrative Assistant, Special Libraries Association, 1700 Eighteenth Street, N.W., Washington, D.C. 20009; 202/234-4700.
The SLA Board of Directors met at the Royce Hotel in Colonial Williamsburg during the 1988 Winter Meeting of the Association. Actions taken and reports of note are summarized below.

**Financial Matters**—Upon recommendation of the Finance Committee, the Board approved distribution of surplus income from fiscal year 1987 as follows: $15,000 to the Executive Development Academy; and the remaining funds to be allocated as follows: 50 percent to the General Reserve Fund, 30 percent to the Building Reserve Fund, and 20 percent to the Special Programs Fund.

President-Elect Joe Ann Clifton received approval for a request for $10,000 to establish a special task force during her term as SLA President to determine perceptions of the image of the profession and to develop and implement a strategic plan to enhance the image of the profession within selected groups.

**Association Structure**—The Special Committee on Association Structure made its final report to the Board following two years of study, and recommended that “caucuses” be established to represent the needs of informal interest groups. According to the report, caucuses would serve as a focus for members with common interests not suited to chapter and division structures, and could be created with 15 members. The report further recommended that the concept could be tried on an experimental basis without a change in Association bylaws. Following discussion by the Chapter, Division, and Joint Cabinets, the Board approved the report in concept and referred the recommended guidelines back to the committee for continued work and a final report to the Board in June.

**Government Relations**—The Association’s 1988 Legislative Platform was approved by the Board of Directors. The 10-point platform continues SLA’s successful work in legislative affairs.

The Government Relations Committee submitted two resolutions which were approved by the Board. The first resolution, concerning the Federal Librarians’ Register, expresses the Association’s concern over numerous changes made to the Register by the Office of Personnel Management (OPM) without input from the library community. The major change made by OPM was a decentralization of the Register. It is expected that the change will lessen the pool of qualified candidates for federal library positions and create a substantial amount of confusion over application procedures. SLA has requested that the appropriate congressional committees review the action taken by OPM and examine the impact on the recruitment and hiring of professional librarians in the federal government.

The second resolution in the government relations arena concerned the Computer Security Act of 1987, which was signed by President Reagan on January 8, 1988. SLA’s resolution applauds the action taken by Congress and President Reagan to grant the National Bureau of Standards authority to establish guidelines and security procedures to protect unclassified government information stored in federal databases. This Act establishes civilian and defense/security involvement in formulating a rational policy of information flow which is widely supported by the library and information communities. The resolution commends the creators of the legislation and President Reagan for the speed at which this valuable bill was signed into law.
The Board also approved the expenditure of up to $10,000 to support legislative work on changes in the Canadian Copyright Law.

Professional Development—A policy establishing an Employment Referral Service was approved by the Board. The service, which will be implemented in late 1988, will set up a fee-based employment referral service for both employers and information professionals. This service, which is unique in the information field, will establish a current, international database of information-related positions and qualified applicants.

The Professional Development Committee presented a Graduate Education Position Statement to the Board. The statement highlights a number of areas that are key components to the education of special librarians. The statement concluded that “To prepare students for special libraries careers, greater emphasis must be placed on knowledge of management, technology, provision of information services and evaluation techniques . . . Without greater proficiency in these areas, graduates of accredited MLS programs will not be adequately prepared for the professional demands of special librarianship.” The Committee will continue to develop the Board-supported statement.

Conferences and Meetings—The Belleview Biltmore in Clearwater, Florida, was approved by the Board as the site for the 1992 Winter Meeting.

The Board also directed the Executive Director to cancel arrangements for the 1990 Annual Conference in Cleveland and to proceed with arrangements for an alternative site in the same region. The Executive Director will report on the new site as soon as arrangements can be finalized.

The Board passed a recommendation that the Association establish a reciprocal agreement with the Medical Library Association to provide member registration fees at each other’s annual conference. The agreement is similar to agreements already established with the American Association of Law Libraries, the Art Libraries Society of North America, and the American Society for Information Science.

Chapter Cabinet—The Board approved a recommendation from the Cabinet that chapters be consulted prior to the finalization of Regional Continuing Education Programs on sites, topics, and dates in order to maintain open communication between chapters and Association staff and to prevent possible conflicts or competition in continuing education programs.

The Board, also at the request of the Chapter Cabinet, instructed Association staff to provide Board meeting agendas and appropriate documents to volunteer leaders prior to the convening of future meetings of the Board.

The Chapter Cabinet established a committee to study alternatives and possible avenues to fund chapter officers’ travel to Association meetings.

Division Cabinet—The Division Cabinet passed a resolution honoring Barbara Palanjian, former Manager, Conference and Exhibits for her dedication to the Association and her work on past Annual Conferences.

The Cabinet also thanked staff for presenting draft galley copies of the division activities for the Preliminary Conference Program.

Bylaws Change—An extensive report on the Association’s bylaws was presented. The report contained two recommended changes in SLA's bylaws. The first change, to Article III, Section 7, would permit the Board to vote by mail ballot, telephone, or electronic means on issues that cannot wait for action during a regularly scheduled or special meeting of the Board. The proposed change would require the consent of the Board to such a vote by mail ballot, telephone, or electronic means on issues that cannot wait for action during a regularly scheduled or special meeting of the Board. The proposed change would require the consent of the Board to such a vote by those means and would require a two-thirds majority vote to pass issues brought forward.

The second change affects Article XVI, Section 3. This section of the bylaws explains the process by which the bylaws may be amended. Currently, to amend the bylaws, 40 percent of the eligible membership must vote and, of that, two-thirds of the membership must approve the proposed amendment. The proposed change would drop the 40 percent return requirement to 25 percent.

The Board unanimously approved the recommendations of the Bylaws Committee. At the conclusion of the vote, President Emily Mobley explained the procedure for placing the proposed bylaws change to the membership. First, the changes will be reviewed by the Association’s legal counsel. Following approval by counsel, the membership will be informed of the proposals 30 days prior to the Annual Business Meeting. The change will be placed on the agenda for discussion and action at the Annual Business Meeting in Denver. If the eligible voting members at the Denver Annual Conference approve submitting the
change to a vote of the membership, a mail ballot election will then be held.

The report explained the rationale in selecting the two proposed changes to the bylaws. As a historical perspective, the report added that in the past attempts have been made to change the bylaws, but have failed because of the 40 percent voting requirement. The Committee emphasized the need to change this key provision of the bylaws.

Committees—The Special Committee on Membership Growth presented its report, which included 11 recommendations, to the Board. The Board accepted the report and referred it to the Long-Range Planning Committee for inclusion, as appropriate, in the Long-Range Plan. Among the recommendations is that the Board identify membership growth as one of the main priorities of the Long-Range Plan.

Responding to the report of the Scholarship Committee, the Board moved to fund four $6,000 scholarships for academic year 1989–90. The four scholarships will include the Affirmative Action Scholarship, which was created by Board action at the June meeting in Anaheim.

The Board moved to extend the reporting date for the Publisher Relations Committee to give the committee additional time to prepare a plan to express the Association’s concerns over the increasing costs of journal subscriptions. The committee will undertake a survey of Association members to gather information needed to prepare its plan. The committee will report to the Board in Denver.

Awards—President Mobley announced the 1988 Association Award recipients, who were approved by the Board in a report from the Awards Committee given during Executive Session. The award recipients are:

**John Cotton Dana Award:**
- Beryl L. Anderson
- Ron Coplen (posthumously)
- Paul Klinefelter
- Enid T. Thompson

**SLA Hall of Fame:**
- Robert W. Gibson, Jr.
- Edythe Moore
- Ruth S. Smith
- Miriam Tees

**SLA Professional Award:**
- Evelyn Butler
- Elizabeth W. Stone

**SLA President’s Award:**
- Miriam A. Drake
- Helen Manning
- James M. Matarazzo
- Ann W. Talcott
- James B. Tchobanoff
- Allen B. Veener
- Frank H. Spaulding

**Honorary Member Nominees:**
- William C. Welsh, Library of Congress
- W. Kenneth Lowry, AT&T Bell Labs

**Fellows of the Special Libraries Association:**
- Vivian Arterbery
- N. Bernard Basch
- Laura N. Gasaway
- H. Robert Malinowsky
- James M. Matarazzo

**SLA Public Relations Award:**

Other Business—The Board also moved to terminate SLA representatives to the following organizations: ALA/LAMA Statistics Coordinating Committee; ALA/RASD Interlibrary Loan Committee; and ANSI/Sectional Committee Photographic Reproduction of Documents PH-5.

Following a request from the Business and Finance Division, staff was instructed to investigate the costs of an 800 telephone line for the Association offices, which would assist members in communicating with headquarters.

Ruth Ann Stewart, Assistant Librarian of Congress, National Programs, gave an update on activities at the Library of Congress. Her report covered three initiatives undertaken by Librarian of Congress James Billington, including the formation of an outside advisory group to provide input for future programs and services of the Library.

The Board also:

- Approved a Statement of Purpose for the Association’s Publishing Services Section that will serve as the policy for future publishing activities.
- Heard a report from the Consultation Services Committee and requested the Committee to develop a draft policy statement for the Consultation Service.

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• Rejected a recommendation from the Committee on Committees to dissolve the Positive Action Committee.

• Extended the Association’s appreciation to the Virginia Chapter for its hospitality and assistance with the Winter Meeting.

• Approved the dates of October 20–21, 1988, as the dates for the Fall meeting of the Association Board of Directors.

Next Meeting of the Board of Directors—The next meeting of the Board will be June 10–11 and 17, 1988, at the Annual Conference in Denver.
Reviews


This book addresses the needs of managers and information specialists who are seeking information to aid in the business decision-making process. The author has selected online services available through DIALOG Information Services, Inc. and I.P. Sharp Associates Limited to demonstrate the research technique known as environmental scanning. Environmental scanning involves the systematic exploration of social, technological, economic, and political factors which have an impact on business decisions.

Using a business forecasting decision as the model, the author takes the reader through the steps of retrieving, scanning, and organizing pertinent information. The author assumes that the reader has virtually no searching or PC experience; so much of the text is devoted to explaining the basics: what a PC keyboard looks like; Smartcom logon procedures; and search protocols for DIALOG, MAGIC and INFOMAGIC, etc.

There is extremely valuable instruction in this volume. Those who need to produce long-range studies in the areas of marketing, sales, demographics, new product planning, or administration will find sophisticated tools here, some of which will take time and dedication to master.

What was found lacking was an evaluative stance: The author did not compare or assess the quality of the data retrieved from the online services, and this would seem to be an important question to address.

Detailed and realistic search costs are included. Appendices describe key databases used in DIALOG and I.P. Sharp Services.

Jean Fisher
Senior Account Representative
Mead Data Central
Morristown, New Jersey


"Corporate author" is a concept very important to technical reports. Identification of the corporate body intellectually or contractually responsible for the report, i.e., the monitoring or sponsoring agency for which research is done and the report is written, or the organization for which the personal author works, is a vital data element in reports processing. Because the corporate author is used by catalogers in describing reports and by patrons in specifying them, it should be consistently entered in bibliographic records. Use of this publication ensures such consistency.

These two volumes are "a printed version of the Corporate Author Authority Database created and maintained by the National Technical Information Service" (NTIS), as noted in the introduction. (The first edition of the list, dated 1983, was produced by NTIS as PB 83-156034.) The NTIS file is available online to catalogers in Defense, Energy, and NASA information centers for processing reports into their own systems. In these volumes, the file is also available to other librarians and information specialists for processing and searching reports collections.

The first volume covers A-I entries, and the second volume J-Z entries, with a separate section for entries that begin with numbers.
e.g., 3M Co. Each entry contains corporate author elements in the sequence of: largest organizational unit, location, smallest appropriate suborganization element. Variants, acronyms, and previously used entries are included, as are source agency codes used by NTIS and the Defense, Energy and NASA systems. These codes, numeric or alphanumeric equivalents of the entry, are used by those agencies for data transmission and are included for potential use by anyone setting up a computer system and, more importantly, by anyone searching in existing databases. The codes correspond to all the variant forms of the corporate author entry, and so facilitate fast and accurate retrieval.

The text is readable and easy to use, since the current entry is printed in bold face type, while the additional information is printed in normal typeface. The Anglo-American cataloging rules (AACR2) form of the entry, when known, is also included in italics.

The existence of two standards for expressing corporate sources is justified by the differences between technical report literature and other types of library materials. Since so many reports are generated by and for the federal government, identification of the corporate authors is more detailed and explicit than provided by AACR2 rules. Thus, the NTIS entry reads:

United States. National Engineering Laboratory

whereas the AACR2 form for both is:

National Bureau of Standards, Gaithersburg, MD.

The AACR2 equivalent, however, shows:


Most of the United States entries in this list are cross-referenced to the more specific headings, to avoid an overly lengthy listing under that one heading. Inclusion of the location also helps to distinguish between sub-units at NBS in Maryland and those at the Bureau site in Boulder, CO:

National Bureau of Standards (NEL), Gaithersburg, MD.
Center for Chemical Engineering

and

National Bureau of Standards (NEL), Boulder, CO.
Center for Chemical Engineering

showing no connection to NBS, often an important clue to a technical reports user. Again, the AACR2 rules work well for broadly based library materials, but technical reports collections benefit from the more explicit identification provided by the NTIS entries. Inclusion of the cross-references to AACR2 entries helps users move more easily between different collections and files.

In sum, this work is a valuable tool for those responsible for cataloging reports and those searching for those reports in various collections or databases.

Madeline M. Henderson
Consultant
Bethesda, Maryland


Covering numerous applications of law and ethics to situations that arise in the broad field of visual arts, this two-volume set includes seven basic areas of concern. In each chapter, the authors provide an introductory discussion of an area, comment upon actual cases quoted from law journals, and frequently reprint critical articles from books and periodicals. Thought questions inserted at intervals by Merryman and Elsen challenge readers to reach personal evaluations about legal concepts and practices.

In Chapter 1, the authors cite examples of plunder, destruction, and cultural reparations that have occurred during the past two centuries. Chapter 2 tells of efforts to curb theft and illicit international trade in art. Especially interesting for all people who create art is chapter 3, which clarifies artists' rights. Since there is no federal law governing the visual artist's moral right of integrity, creative works in the United States are less protected than in countries such as France, Germany, and Argentina.

The right of artists to select and follow their own purposes is discussed in Chapter 4. Practical aspects of the artist's life, such as live/work space and taxes in “the real world” form the subject of Chapter 5. Problems and func-
tions of art collectors are detailed in Chapter 6. Merryman and Elsen conclude Law, Ethics, and the Visual Arts with their Chapter 7 discourse on art museums.

In general, the format of the book is serviceable, but the print is too small for prolonged reading. Extensive changes were made in the text between the edition of 1979 and the current 1987 edition. For instance, controversial public art required a new section because the subject has recently come into intensive focus.

Collectors, dealers, appraisers, critics, accountants, museum trustees, and officials of auction houses will find this book valuable. On page 521, for example, a quotation from Lynn Stowell Pearson's "Title Disputes at Auction Houses" states, "When confronted with the problem of stolen art sold at auction, both Christie's and Sotheby's say they cooperate with the authorities and they rely on organizations such as IFAR, the police, FBI and the Art Dealers Association of America for art theft reports."

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Colleges and universities that feature studio classes should have this book in their art libraries to warn students that "In 1981 . . . some 1,598 artists were surveyed, and the report showed that those having had lifetime exposure to solvents and pigments had 'significantly elevated' risks of contracting leukemia, heart disease, and cancers . . ." (page 423).

The art department of a large public library needs Law, Ethics, and the Visual Arts to enlighten artists and art historians that "Under the 1976 statute . . . copyright attaches at the moment of creation . . . [nevertheless] for most practical purposes, publication with notice is still essential to protection of the artist's copyright." (page 186). This volume would also be useful in a law office library, since consulting this book may help attorneys plan arguments for court cases.

Law, Ethics, and the Visual Arts cites a number of significant observations including, on page 281, "Criticism is an important category of protected speech, and pictorial criticism (e.g., cartoons) is as important to a free society as criticism in the form of words." Where would a more cogent statement on artistic freedom be found?

Carl H. and Arlyle Mansfield Losse
Milwaukee, Wisconsin


The majority of librarians and information professionals have never been directly involved in a work-related lawsuit or legal proceeding. This tends to make us, as a group, rather ignorant of the legal issues involved in the management of information. Some of us may be familiar with certain issues based on bad experiences: an employment discrimination suit, a vendor breach of contract, etc. Yet, we tend to feel impervious to liability, especially when we believe it is the concern and province of someone else in the parent organization. "Nevertheless, managers are responsible for all decisions made within the scope of their positions as supervisory staff, middle management or chief executives," cautions William Nasri in the introduction of this book; "... ignorance of the law is not an acceptable excuse; the legal issues involved in management are numerous, complicated and entail liability."

Legal Issues is a compilation of 12 articles designed to provide information managers with "a better understanding of certain legal concepts and legal rights and obligations in addition to a clear explanation of potential legal consequences and the means possible of safeguarding against them." The articles cover censorship, the Freedom of Information Act, privacy of circulation records and employee files, affirmative action, discrimination litigation, collective bargaining, copyright, proprietary rights in software, computer contract issues, public lending rights, and general professional liability. Overall, the book admirably fulfills its promise by providing an introduction to each of these important matters. (Note: This monograph was published simultaneously by Haworth Press as the Journal of Library Administration 7, no. 4.)

Editor William Z. Nasri, JD, Ph.D., is a professor at the School of Library and Information Science at the University of Pittsburgh, where he teaches a course on "Legal Issues in Information Handling" and found a need to develop this book of readings. The authors, many of whom are lawyers knowledgeable in information matters, in most cases take care not to overwhelm the reader with legalese, and they provide a practical framework by describing specific library lawsuits and applications for each topic. Advice is rendered in general terms, and Nasri warns that the opinions "do not constitute legal advice nor should they be relied upon in lieu of legal counsel." I did find myself, on occasion,
wanting more specific information than the articles provided regarding preventative actions my library could take to avoid liability.

Although the well-documented articles have plenty of footnotes that could lead one to additional information, it would have been helpful to have a selective list of suggested/further readings for all topics at the end of the book. Nonetheless, I gained some new knowledge by reading these articles and being introduced to important legal issues in our field. I will no longer expect “someone else” to consider the possibility and consequences of legal action regarding my library and if everyone else reading this book comes to the same conclusion, then our profession will be better prepared to confront the controversies and complexities of a litigious Information Age. This book is strongly recommended for library managers at all levels.

Catherine Suyak Alloway
Public Services Librarian
Harris-Stowe State College
St. Louis, Missouri


Mind(ing) Your Own Business is not as easy as it sounds. Alice Sizer Warner has written a back-to-basics guidebook to entrepreneurship for information professionals. Warner puts heavy emphasis on practical business skills, i.e., business planning, financing, marketing, and management. Practical business skills are necessary because, as the Small Business Administration reports, 90 percent of small businesses fail in the first five years, and one of the main reasons is lack of management skills and other basic business practices.

Warner, cofounder of Warner-Edison Associates and now sole proprietor of the Information Guild, drew on her own business experiences and the experiences of former students, professors at U.S. and Canadian library schools, self-employed brokers, and university librarians who staff fee-for-service departments in order to write this guide. She begins with the basic question of “What Makes An Entrepreneur?”, and self-analysis is a good place to begin entrepreneurship. Everyone cannot make the financial and personal commitment of starting and running a business. Self-employment can be successful if it meets the individual’s personal qualifi-

Susan C. Awe
Business Reference Librarian
Northern Arizona University
Cline Library
Flagstaff, Arizona

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