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November 1980, vol. 71, no. 11

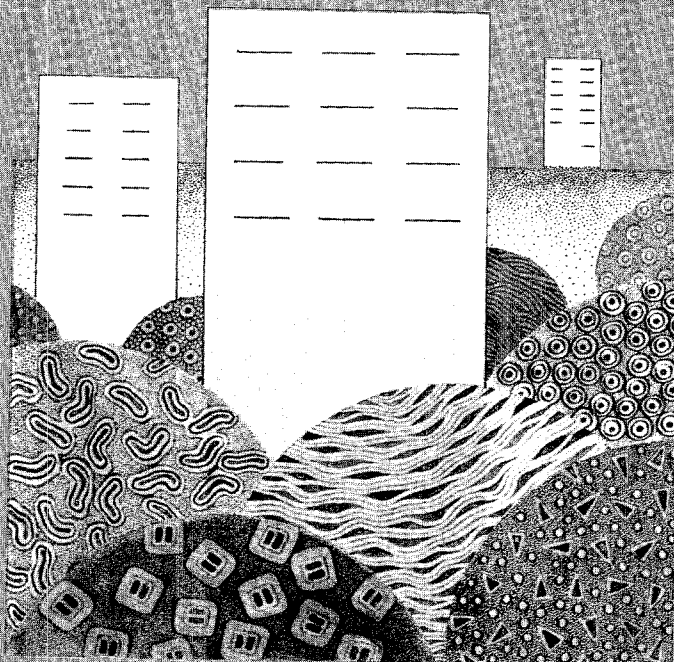
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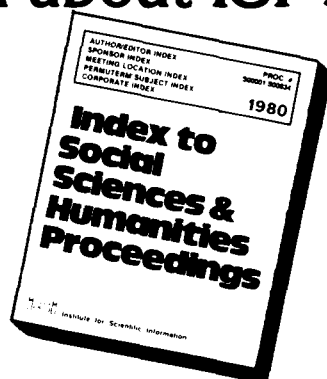
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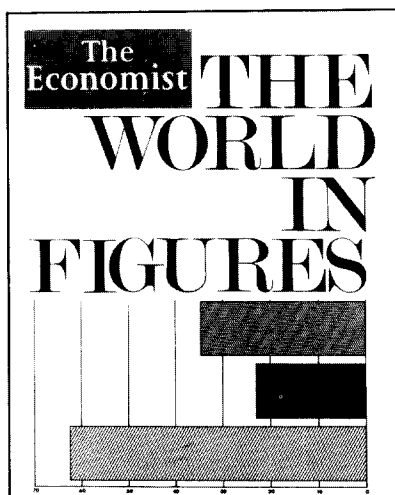
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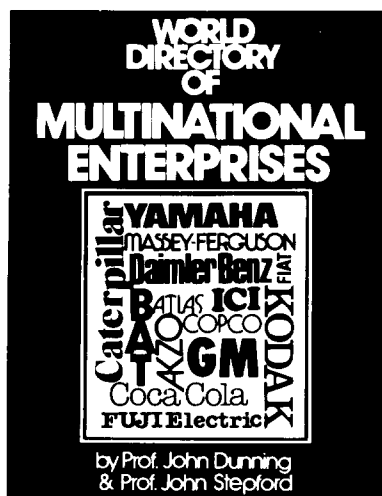
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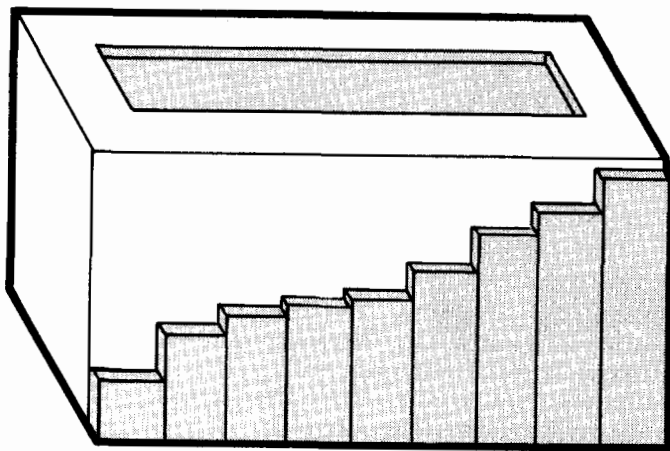
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NOVEMBER 1980 VOLUME 71, NUMBER 11 ISSN 0038-6723 SPLBAN

7A

Letters

469

Marketing and the Information
Professional
Stanley J. Shapiro

475

Library Data, Statistics, and
Information
Maryann Kevin Brown

485

Automating the Vertical File Index
Eileen F. Bator

492

Word Processing Equipment
for Information Centers
Lynda W. Moulton

SLA News

497

Chapters and Divisions
Members in the News

498

Editor: NANCY M. VIGGIANO
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Vistas

499

501

504

507

508

Staff Development
The Use of Mobile Storage Systems in
Talking Book Libraries for the Blind
Reviews
Have You Seen?
Pubs

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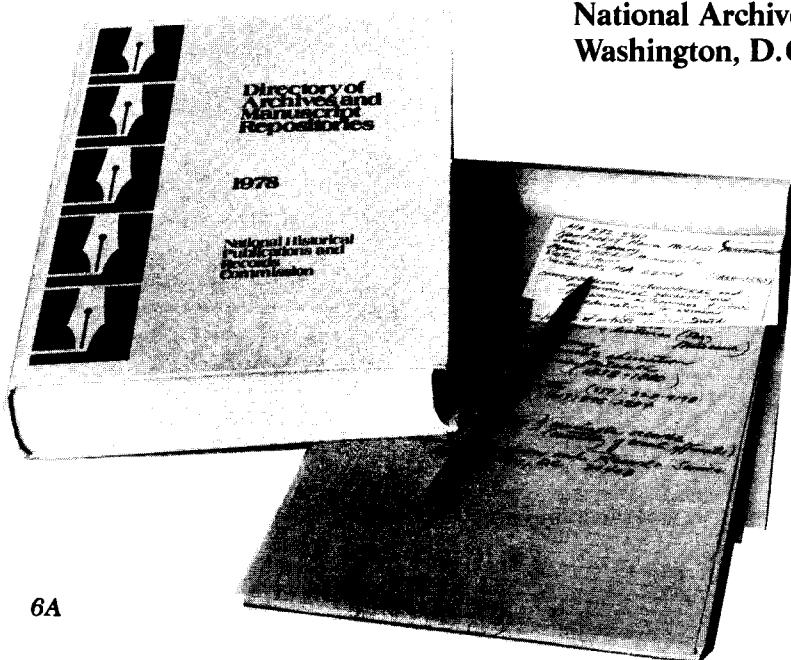
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LETTERS

Faulty Planning

Kay Birula in her article, "Planning a Branch Library" [SL 71 (no 7): 300-302 (Jul 1980)], left out what I consider to be one of the fundamentals in planning a branch library. One of the major goals of the branch collections should be to insure that the branch librarian will be able to find almost all the literature available in the field of interest served by the branch. Thus, one of the paramount considerations should be indexes.

Before Orbit and Dialog, it was printed indexes. Now I would hope that a new branch would have a terminal for online searching plus vital, printed indexes. After determining what indexes to obtain, the list of books and periodicals can be planned.

Nowhere in Birula's article did I see the word "index" or the words "online searching." I consider this omission a major fault in the article.

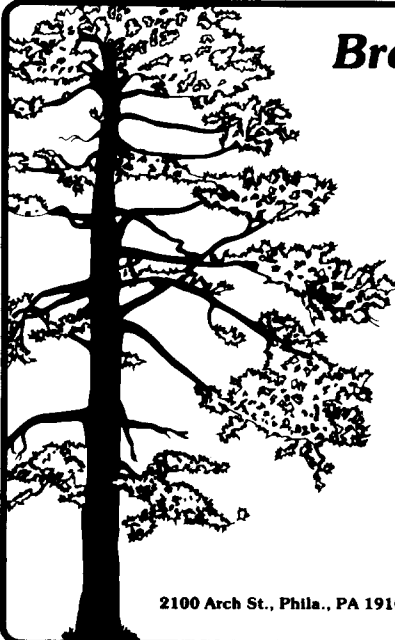
Masse Bloomfield
Hughes Aircraft Company
Culver City, Calif.

Author's Reply

In a certain sense Masse Bloomfield's argument is a valid one, although he must have missed the scope of my article. It was intended as a practical tool, a "how to" method, an initial stage consideration. The emphasis was on impressing those who are going to read the proposal representing a major expenditure.

The indexes and terminals, if they are contemplated, may be a part of the second-stage objectives in a branch library's development (unless the funds permit introducing these right from the start). Only a few libraries would be in a position to start their satellite units with such expensive items as printed indexes. The same goes for computerized searching; the article mentions the possibility of employing only the nonprofessional or clerical help in the beginning. It also stresses that much depends on the situation and the kind of library or organization. All suggestions are aimed toward planning the simple essentials and selling the idea to the management.

The terms "online" and "terminal" are common household names nowadays. In most organizations the terminals are already available in every department. Adding




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these words to the article would hardly add to the effectiveness of the elementary and practical check points outlined for planning a modest extension library.

Kay Birula
Technical Information Center
AMP, Incorporated
Harrisburg, Pa.

Redemocratizing SLA

The 71st Annual Conference in Washington, D.C., was a huge success in all respects. This should not surprise anyone. Washington has hundreds of libraries and thousands of librarians to help make any conference of librarians in that city successful. It has one of the largest SLA Chapters and two other Chapters, Baltimore and Virginia, nearby. Many of the officers of the Divisions are from the District of Columbia.

On the other hand, there is Winnipeg, Manitoba, the site selected by the SLA Executive Board for the 1985 Annual Conference. Winnipeg is undoubtedly a beautiful city, however, unlike Toronto, Ottawa, or Montreal, it lacks the library-oriented resources needed to support a successful library conference in Canada. To the best of my knowledge and from information gathered from *American Library Directory*, 32nd edition, 1979, there are some 16 special libraries in Winnipeg. Perhaps four SLA members live in Winnipeg. Not only is there no SLA Chapter in Winnipeg but there are no Chapters for hundreds of miles around it.

Do you recall how the membership objected to Honolulu when it was announced as a site? Many of us predicted a financial disaster for the Honolulu Conference and, sure enough, it happened. In fact, the recent dues increase may have been partially brought on by the large amount of money lost by SLA on the Honolulu Conference. Is there any evidence that Winnipeg will not be another, perhaps even worse, financial mistake? Let us prepare ourselves for another dues increase after Winnipeg.

With Washington, D.C., New York City, and several other cities guaranteeing financial success, why was Winnipeg selected? My contention is that the SLA Board of Directors may not be in touch with the feelings and wishes of the general membership. It may also not be aware of membership's feelings about other matters. For example, the selections of the sites for the

Winter Meetings are often made without any (or very little) consultation with the Chapter officers in the areas being considered. Is Winnipeg where we want to go? Is \$125 a price that members are willing and/or able to pay for a Continuing Education Course? Has the membership really been surveyed on these and other matters? Of course not.

There are two reasons for this: One is that surveys are expensive. The other reason is that elected officers often delude themselves that input to them on important matters will come automatically. Please believe me, it takes energy and courage to write to elected officials, even in one's professional association; it takes even more effort and courage to write a letter to a publication. If participation of individuals in any large group activity is desirable, then a simplified procedure for participatory activity must be developed.

Here is my proposal: Set aside the middle two pages of each issue of *Special Libraries*, or of any other *Newsletter* or *Bulletin* that may eventually emanate from SLA Headquarters, as a communications exchange sheet to be pulled out of the issue and sent back to the Executive Board with input on specific topics. Ballots could also be constructed in the same manner. Signing the outside of the folded and preaddressed ballot would ensure that ballots or surveys from members only would be counted. On a 30% return of ballots, it would probably require one person eight hours of labor to validate the ballots against a printed membership list. On our annual election of officers, SLA would save between \$1,500 to \$2,000 on postage alone in this way. Surveys could be made on a variety of topics at no additional mailing costs than those already appropriated for *Special Libraries* distribution.

What are some other topics that could be surveyed? How about the idea of opening the SLA Exhibits to everyone, not just to Conference registrants, on one or two afternoons of an SLA Annual Conference? Or, perhaps the matter of changing the bylaws so that future dues and fees increases could be voted on by the total membership rather than the small percentage of Conference attendees who attend the Annual Business Meeting?

It was not the intent of John Cotton Dana and the founders of SLA to establish an association ruled by a select few without easy and direct participation of the entire membership. SLA was established as a

democratic association of activists. Somewhere along the line, as SLA grew larger and larger, it began losing sight of the democratic principles that ought to govern it. Decisions are now made by an Executive Director and a Board of Directors of strangers (at times) whose individual attitudes about special libraries and librarians, fiscal policies, sociological matters, and organizational interests are unknown to the membership at large. Yet the membership must choose between Nominee A and Nominee B, often without ever meeting either, without knowing what either one is for or against. No wonder the ballot return is so small.

In *The Third Wave*, Alvin Toffler urges a shift from depending on representatives to representing ourselves, or a mixture of the two, which he calls "semi-direct democracy." It is in the same spirit, which I prefer to call "redemocratization of the Association," that this proposal is made.

Stanley A. Elman
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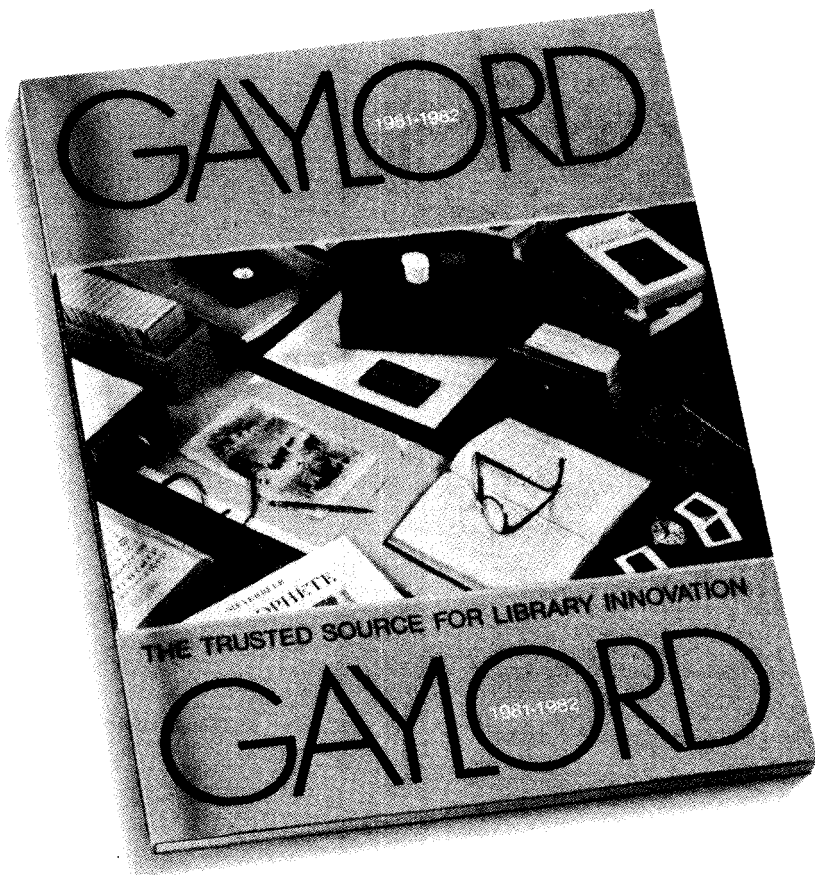


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Marketing and the Information Professional

Odd Couple or Meaningful Relationship?

Stanley J. Shapiro

McGill University, Faculty of Management, Montreal, PQ,
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■ What has been learned from past efforts to utilize marketing techniques in the not-for-profit sector is reviewed. Marketing is presented as an attitude, an approach, and a set of relevant tools, techniques, and concepts. Recommendations are made for developing marketing plans for every product-market segment being served. Suggests that librarians also be trained as corporate information officers.

WHILE SOME DOUBT still exists as to the nature and importance of the relationship that will eventually evolve, marketing and the information professionals have recently "found" each other and, rather tentatively, embraced. What does marketing bring to this relationship?

The use of a marketing approach by a wide variety of not-for-profit organizations such as libraries, universities, churches, and health services, is a development of the last decade. We are just now beginning to learn what aspects of marketing can be used "as is" by the not-for-profit sector, what mar-

keting techniques are appropriate but only after substantial modification, and what dimensions of commercial marketing have no real relevance to this sector.

Perspectives on Marketing

A surprisingly extensive literature already exists on "social marketing," the umbrella term often used to encompass the different types of not-for-profit marketing (1). Some of this literature chronicles marketing triumphs or those marketing approaches which have failed in the not-for-profit sector. A number of other important lessons can

be learned from a review of the relevant literature:

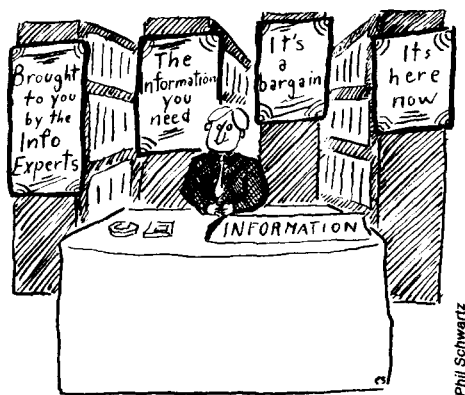
Lesson 1.—Many of those trained and employed in the so-called helping and learned professions harbor a deep-seated hostility toward marketing as a commercial activity. Such individuals turn livid when asked to accept the position that marketing has any real value to their area of special competence, be that area health, education, or librarianship.

Lesson 2.—The absence of objectives expressed in concrete, measurable terms and the lack of a “bottom line” profit or loss figure are other important barriers that prevent not-for-profit organizations from making the kind of far-reaching changes that a marketing approach usually requires and that corporations are prepared to make.

Lesson 3.—Churches, universities, hospitals, and libraries engage in labor-intensive activities that do not lend themselves to mass production or other cost-saving innovations as demand for their services increases. Marketing, therefore, has proven less useful to these not-for-profit institutions than it has to commercial organizations where increased sales generally facilitate mass production and a marked decline in per unit or per transaction labor costs.

Lesson 4.—Marketing talent for the not-for-profit sector is best “home grown.” It is far easier for professionals from the government, health, education, and library science sectors to learn what they must about marketing than it is for marketers from the private sector to overcome the many barriers to their becoming effective in a new and strange environment.

Lesson 5.—Marketing is not an all-purpose cure for whatever ailment is troubling your library. However, marketing can make a meaningful contribution, since the kinds of services traditionally provided by libraries and the traditional ways of providing such services are viewed by marketers with a new, fresh, and different perspective.



Promoting the Product

It might be argued that intelligent and imaginative librarians have traditionally conducted programs that could be described as marketing activities. Library marketers, it could be maintained, are similar to the man Moliere wrote about who discovered at a relatively advanced age that he had been speaking prose all his life. But the librarian who leaves her desk to serve users rather than to silence them is not necessarily a marketing manager, and an eye-catching poster is no substitute for a marketing plan. If it were, Smokey the Bear would have extinguished the last carelessly lit forest fire decades ago.

Well then, what is marketing all about? What can it contribute to the world of special libraries and information science? One way to begin is to view marketing as essentially three things—as an attitude, as an approach, and as a set of tools, techniques, and concepts.

Marketing as an Attitude

A marketing attitude has a number of dimensions. Above all else, it starts with the recognition that one's organization must be responsive in helping its users solve their information gathering and processing needs. What business do you think you are in? In a very real sense, are you not in the business of

creating satisfied customers? Consequently, you should be prepared to take your marching orders from a market place consisting of those present and potential customers. The use of the word customer is a deliberate one: "patrons" are people we patronize; "customers" are people whose custom we seek.

What does it mean to be a responsive organization? The description Philip Kotler provides in his book, *Marketing for Nonprofit Organizations* (2) says it all:

- The highly responsive organization encourages its constituents to submit inquiries, complaints, suggestions, and opinions. Consistent with that objective, it utilizes suggestion boxes, comment cards, ombudsmen, and consumer committees.

- The highly responsive organization shows a keen interest in learning about the needs, preceptions, preferences, and relative satisfaction of its constituents. It relies on systematic information-collection procedures such as formal opinion surveys and consumer panels.

- The highly responsive organization systematically sifts all incoming information and takes positive steps, where called for, to adjust its products, services, organizational policies, and procedures.

Systematic information collection procedures, formal methods of encouraging inquiries, complaints and suggestions, and above all, a periodic adjustment of products and policies consistent with feedback obtained from the market place: if this is the kind of special library you are running, then you are half way toward being a marketing manager. If these phrases don't describe your library, then don't expect others to recognize your value or to defend your interests when budgets are being allocated, or when the need for staff services is being reassessed.

Finally, a marketing attitude requires that today's products and services be reassessed in terms of the user needs they are now satisfying. Nothing a

special librarian does is an end in itself; it is but a means to an end. If consumer information needs can be better satisfied in some other fashion, no service has to be offered just because it has always been offered.

In summary, the three key dimensions of a marketing attitude are:

- 1) A willingness to take one's marching orders from the market.

- 2) A commitment to making the library a responsive organization.

- 3) A recognition that some products or services may have outlived their usefulness and should be substituted by new offerings.

Marketing as an Approach

There are a great many prospective customers out there. A first step in marketing involves segmenting the potential market into smaller submarkets consisting of individuals who are essentially similar. Those segments can be similar in their needs, in their way of solving an information processing problem, or in many other significant ways. Grouping potential customers into fairly homogeneous segments en-



Responsive Organization

ables you to do your marketing with a carefully targeted rifle rather than with a shotgun scattering pellets every which way.

Matching Services to Users

Next, think about the range of library products and services that are now being offered and match them to the needs of those groups you have identified and decided to cultivate. Matching products against target markets! A straight forward objective but what does it really mean? In the toothpaste market, this means identifying three distinct groups such as the "cavity conscious," the "shiny teeth set," and the "fresh breath fanatics." Once this has been done, one develops a different product—in this case a different brand of toothpaste—for each of these segments. Consumer surveys and small group interviews can be your starting points in developing new services to match the needs of the market group.

Developing a Plan

Assume, for purposes of illustration, that your library is serving three major market segments—R&D personnel, administrators, and commercial researchers—and is offering three services—acquisitions, reference, and bibliographical search. A marketing plan or program should be developed for each of these nine product-market segments, as well as for every new product that is developed. The plan can be as complex or as simple as you like; however, it must cover the following topics:

1) Relevant external factors providing a context for marketing. Such factors include organizational constraints, technological developments, and important demographic changes, such as a falling birthrate.

2) The information-processing problem that the particular market segment is trying to solve and the relative frequency with which its members rely on different sources of information,

including the product or service you are offering, to find a solution to that problem.

3) A very specific statement, in quantitative and percentage terms, of how much you propose to increase usage during a twelve-month period.

Since increases in usage just don't happen, you must next spell out exactly what is going to be done to make that planned increase occur. Broadly speaking, a "larger share of the business" is obtained through making significant changes in one or more of the so-called "four P's of marketing"—product, price, promotion, and place. What changes, if any, are you making in the product offering? Is the price of that product, in terms of time, money or psychic energy, being reduced? Are you promoting the product through

Systematic information collection procedures, formal methods of encouraging inquiries, complaints and suggestions, and above all, a periodic adjustment of products and policies consistent with feedback obtained from the market place: if this is the kind of special library you are running, then you are half way toward being a marketing manager.

advertising (or personal selling) which stresses how users' needs will be satisfied or their problems solved? Is that product being promoted in a manner that makes your message stand out? (In other words, what are you doing to break "the boredom barrier" or to overcome "the ennui effect.") Finally, is your product or service going to be offered at a more appropriate time and place? Of course, your marketing plan will generate additional business only to the extent that users find these changes in the four P's more closely attuned to their needs.

Marketing Tools, Techniques and Concepts

There are at least five areas of obvious relevance to special libraries:

1) A variety of marketing research techniques which can be employed to determine user attitudes, likes, and dislikes. The informal and inexpensive group interview has proven effective for librarians who are prepared to listen, to learn, and to adapt.

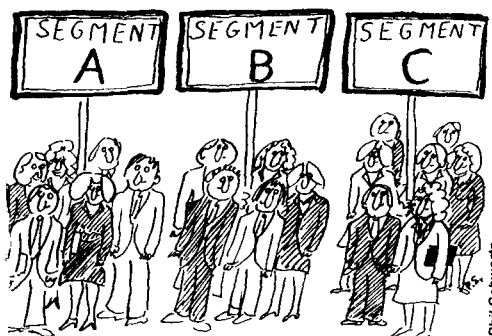
Marketing is an appropriate attitude, an approach that matches products with market segment needs, and a set of tools, techniques, and concepts. The four P's—product, price, promotion, and place—are used as marketing variables in the plan developed for every important match of product with market.

2) Literature on the new product innovation and diffusion process and the determinants of new product success or failure. This literature can prove helpful in determining the most effective manner in which to promote a new library service.

3) The concept of the product life cycle which suggests that each new library service goes through various stages in its development with each stage calling for different promotional approaches.

4) An extensive body of research findings on the theory and practice of mass communication. This literature can help increase the likelihood that the message about your library will be both perceived and persuasive.

5) A literature on forecasting and market potential which can help you predict the share of a target market that will actually use your library, the relative importance of "heavy users," and the amount of business you can expect to win away from competing suppliers of information.



Matching Services to Users

In a nutshell, that's marketing: an appropriate attitude, an approach that matches products with market segment needs, and a set of tools, techniques, and concepts. The four P's—product, price, promotion, and place—are used as marketing variables in the plan developed for every important match of product with market. Of course, marketing is, in fact, a far more complex subject. If it weren't, marketing textbooks would not be 600 or 700 pages in length and even skilled corporate marketers would not so frequently launch products that fail in the market place. Nevertheless, you can learn all you need to know by taking a marketing course or two and then applying what you have learned in the market place served by your special library.

Training Librarians to Become Corporate Information Managers

Let us next turn to a somewhat different but related topic. Marketing is another one of the activities in which firms engage and about which business schools teach to become a concern of library administrators. That libraries are complex organizations and must be administered as such has long been recognized. The most recent volumes on library administration may say nothing about marketing. However, considerable attention is paid in such texts to budgeting and financial controls, to personnel and organizational behavior, and to certain "fundamental tasks" of

management, such as planning, organizing, staffing, directing, and controlling.

But why must the flow of managerially-relevant material always be from other organizations to libraries rather than a two-way flow? Why have so few schools of library science developed joint MLS-MBA Programs? And finally, why isn't a librarian with an MBA recognized to be potentially much more than a better library administrator? He or she is also a logical candidate for corporate manager of information services. Who would be better qualified to direct the overall information gathering and information processing activities of the modern corporation? Information-oriented activities may account for as much as 5% of the total corporate budget. There could be a new professional job market out there for BLS or MLS graduates who also have degrees in Business Administration.

Librarians as managers of the overall corporate information function—is such a thought so outrageous? A joint MBA-MLS degree provides librarians with a knowledge of information science and computer capabilities, as well as with an awareness of marketing, personnel, production, and finance.

McGill University is going to experiment along these lines. The Graduate School of Library Science at McGill, though remaining a separate organizational entity, may soon be reporting to the Dean of the Faculty of Management. But whatever the reporting structure that eventually evolves, the Faculty of Management and the School of Library Science will soon be offering a

joint MLS-MBA degree to a limited number of interested students. A special effort will be made to see if the resources of the Faculty of Management and the Schools of Computer Science and Library Science can be harnessed within the joint degree-framework to train the same individuals as corporate information specialists and as library administrators. Hopefully, other institutions will begin experimenting along these lines over the next few years. SLA members are encouraged to monitor these efforts to see whether special librarians really can flourish as corporate information officers.

Acknowledgement

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Library Data, Statistics, and Information

Progress Toward Comparability

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■ Libraries of all kinds and sizes are increasingly bound by common needs and concerns. This symbiosis has posited new demands upon the community. Primary among these is the demand for common understandings and a language in which to share these understandings. One avenue to such an objective is outlined. Foremost to this development is a framework of information about libraries. A method by which to catalog the impressions of library behavior and from which to move to some empirically based and sound theory of library behavior is described.

TRADITIONALLY, assumptions about the need for and the value of library services sufficiently justified continued support to libraries. Prestige, cultural attributes, the guardianship of society's accumulated knowledge, library mythology—all combined to overshadow any doubts that libraries should be maintained and, indeed, grow. In this comfortable context, most libraries thrived, increasing collections, staff, and facilities. However, economic realities and the demand for accountability have long since disrupted this sheltered existence. As Ray Carpenter reminds us: "Laissez-faire attitudes toward library management have rapidly declined as the visibility of the

library, largely due to its greater economic resources, has increased" (1).

Perhaps, as Herbert White has suggested, the library in the for-profit sector has always been cognizant of external threats: "One of the things which differentiates libraries in the for-profit sector from academic, public, and school libraries is that in these latter institutions the library is assumed to have value per se. In part this is because there is perhaps a greater tolerance for knowledge and learning as a self-evident good, rather than simply as a contributor to bottom line figures" (2).

However, as financial resources become increasingly difficult to acquire and as inflation diminishes the pur-

chasing power of those funds that are obtained, no library is exempted from critical scrutiny. The library's security is threatened by changing government priorities (3), measures like California's Proposition 13, prospects of diminished school enrollments, and increased competition for limited funds. In sum, they depreciate the value of library services in the minds of funders and decision-makers.

External Whim and Internal Fancy

This new fiscally conservative environment has created a demand among library managers for the very commodity in which the library specializes—information. As financial bases deteriorate, library managers are confronted with complex decisions about the allocation and utilization of shrinking resources. Moreover, they are more than ever obligated to demonstrate that the library effectively meets the needs of its clientele and fulfills its mission despite these resource limitations.

In these circumstances, the ability to document both efficiency and organizational effectiveness for funders and administrators is essential to the vitality and viability of the library. F.W. Lancaster observes:

This growth of interest and activity [in measurement and evaluation] is at least partly attributable to the fact that we have recently experienced a period of economic recession, a period in which reduced levels of funding have led to reduced rates of growth of information services and even, in some cases, curtailment of these services. Managers of libraries and other information centres, as a result, have been faced with the need to exercise even more care than usual in the allocation and management of their resources. Some of these managers (as well as some of those responsible for funding) have recognized that information services need to be evaluated to determine how effectively they are performing, how efficiently the resources are being allocated, and what might be done to improve the performance or resource allocation in the future (4).

As Robert Scott Gassler notes:

In the case of libraries, as with other nonprofit enterprises, the lack of a reliable market mechanism for determining social valuations makes the measurability problem more important. It is therefore to be expected that libraries would spend much time and effort measuring what they do, even if they are not always quite sure which measurements are important. This is precisely what we find (5).

This has been no solution. The content, accuracy, and utility of these data-collection endeavors have been widely criticized. For example, Fritz Machlup identifies an underlying "difficulty behind the lack of statistical records" to be "the absence of an operational unit of measurement, apart from dollar expenditures. While groceries are bought in pounds and tons, pecks and bushels, quarts and gallons, such units do not apply to books and journals. Bewildering problems have to be solved before one can say, how many 'volumes' or 'journals' are in the stacks of a library and how many have been added in any particular year" (6).

This assessment of the state of data collection in the nation's libraries assumes that if the type of information requested on a survey was not available, that information was not available at all. Indeed, quite the opposite is true. Paul Huibert contradicts Machlup: "Every time librarians boast of the many statistics we have at our command, a questionnaire appears in which a researcher wants some kind of information beyond that which we assemble, or the inquirer uses definitions different from those we guide ourselves by" (7).

The real concern, then, should not be the extent of data collection, but rather the caliber and type of data collected. Claire Schultz has succinctly described the core difficulty:

Mathematically-minded persons, who examine library statistics available in published and unpublished form, conclude that nearly all the time spent in gathering statistics is wasted. The various "statistics" have been found to correlate

so closely with one another that the majority of them can be predicted from knowing only one of them. Little processing of the collected data is done by the librarians responsible, so that the statistics are of little value even to the collecting library" (8).

Part of the problem stems from the conflicting purposes, or even lack of purposes, for which data are collected. Many data are collected in anticipation of demands by parent organizations or constituencies; for surveys conducted by government agencies or professional organizations; to obtain historical trend data; as well as to measure and evaluate library services. These vagarious and inconsistent demands for data inhibit rational approaches to data collection.

Perhaps even more disquieting are the complaints regarding the accuracy of library data, typified by Glyn Evans' comment: "Probably the only accurate element in all the data gathered to describe library budgets at the institution level is dollars expended (society insists on dollar auditing), but even these data tend to blur as they cumulate with data from other institutions" (9). One need only consider the legislative and funding decisions, the library standards, and inventories of library needs based on data collected from libraries to understand the detrimental impact that faulty data may have.

Seizing Sanity

Amid a plethora of measures cast up from a sea of varying definitions for data employed, is it reasonable to expect that either the individual library manager or the library community as a whole can achieve a rational and sound approach to measurement of library services? Certainly the literature abounds with descriptions of valuable and sophisticated measurements of library activity and utility. The problem, then, is not one of methodology; instead, a significant source of measurement problems is found in the raw data collected. Furthermore, the haste to convert these raw data into complex measures has not been constrained by

any sense of purpose or clear framework of appropriate assessment information. In many cases, such measurement has failed to include the entire library, focusing instead upon one facet of operations or resources. We ought to halt the mad rush to measure until we have achieved a logical, lucid overview of the information needs and behavior of the library.

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Approaches to simplicity are often more labored than those to complexity. Part of the problem resides in the definition of raw data: for example, the definition of *serial*, or *journal*, causes heated debate. Another difficulty is that controversy exists about the combination of data for measurement. Measurement issues remain a concern despite the voluminous state of the art. Nonetheless, a standard definition of serial remains more elusive than, say, the definition of price index. One reason is that so many preconceptions exist regarding what a serial is. When libraries could exist largely in isolation from one another, the need for common definitions of such terms as *circulation* and *user* was slight. There is no reason to develop a common language replete with common understandings and definitions if there are few needs for communication. Today, it is becoming less and less possible for the individual library to exist in isolation from others.

For generations, despite the lack of widely felt need, the library commu-

nity has tried to derive common definitions for its particular language; witness Elizabeth Smith's *Standard Terminology in Education with Particular Reference to Librarianship* (1927), and its descendent, the *A.L.A. Glossary of Library Terms* (1943). But the progress toward such a language has been uneven, as Glyn Evans points out:

We haven't even developed a fundamental theory to underlie the counting. The problem is clearly a national, or international, one and of course is not limited to libraries. It affects education in general, publishing and other areas. It is also nontrivial and complex. But most of the difficulty lies not so much in making the definitions as in getting them understood and accepted by reporters. Even the most heroic efforts of those who define and compile statistics can founder given willful interpretation of their guidelines (9).

There are no simple methods or straight avenues by which to achieve a common language of data for reporting and recording information about libraries. A number of consequential decisions need to be made and it will be difficult to do so; however, the consequences of not making these decisions can be even more harmful. Consider, for example, funding and legislative decisions made on the basis of data currently collected by the National Center for Education Statistics. While the Center has made a noteworthy effort to carefully define the data it collects, it appears that the definitions are not substantially similar to those employed in many library data systems and that individual libraries report only those data routinely collected, without regard to variations in definitions (10).

Several data rules ought to be followed in constructing a reporting language:

- Data categories should be mutually exclusive;
- Data should be capable of aggregation;
- Data should be capable of disaggregation to very specific levels;

- The data system should accommodate complex organizations and small organizations equally well;
- Data categories should be understandable by the parent organization and lay persons, as well as librarians and library staff;
- Data should be organized into a framework intelligible to both lay and library persons.

The need for general intelligibility is underscored by Henry Voos: "A problem which impedes communication between the information organization and its management is that of the separate terminology or jargon used by each field. The manager's world of effectiveness and economics is governed by vocabularies and concepts of costs, cost-effectiveness, cost-benefit, PERT charts, staffing patterns, etc.; whereas the librarian's world is governed by terminology concerned with the ideas of service as expressed and defined by such terms as circulation, book, and library material collections, *per capita* services, etc." (11).

In order to derive a common, lucid language, it is necessary to describe the library in terms of a framework, which in turn can be refined to a series of measures that represent a series of data.

Making Sense out of the Nonsense

Several different ways of deriving a framework for information about the library have been presented in the literature. The strategy developed in this paper is consistent with categories of data described fully in the *Handbook of Standard Terminology for Reporting and Recording Information about Libraries*, 1979 Draft (12).

The concerns expressed by library management, library funders, and many contributors to the literature on management information for libraries are relevant to three distinct series of data: 1) the environment of the library, 2) library resources (personnel, financial, collection, facilities), and 3) library activities. The environment includes the structure and nature of the popula-

tion that the library is intended to serve (the target group); the political and legislative trends that may affect the library; and pricing patterns, technological innovations, and organizations that can influence the library's resources or activities. While the environment, including funders, networks, and various external factors, is largely beyond the control of the library, the combination of operative environment factors may account for the library's individual distinctness.

Conformity in definitions and language does not obscure the individuality of each library. Clearly, the demands for and uses of data are linked to the environment and setting of the individual library.

The resources of the library constitute its raw capacity to generate activities. The resource package defines what a library is, as opposed to what it does. Resources consist of the personnel or staff (characterized by skill levels, educational qualifications, and capability to conduct library operations); facilities (including equipment) that can be allocated to library programs; financial assets other than allocations to the library by the parent organization, including endowments and assets and liabilities directly attributable to the library; and information resources (the library collection).

It is not enough to count resources—to describe the collection resources, for example, only in terms of dollars and size. It is much more desirable to assess both the quantitative and qualitative aspects of the collection. Resources should be measured as to their extent, breadth, and depth, and along a variety of dimensions related to the needs of the environment. The literature identifies several significant dimensions, both qualitative and quantitative, useful in measuring the collection. Traditionally, the physical description of the

collection has been the most readily achieved. Computer-based support systems have now made it equally feasible to describe the collection in terms of intellectual content, relevance to target groups, accessibility, availability, and utilization. It even becomes possible to evaluate the total information resources to which the individual library has access through networks, within the state, across states, and nationally. The library manager should evaluate not only the resources under the library's control, but those resources available through networks and cooperatives.

In general, the collection can be measured by physical description (the physical units and formats represented in the collection); intellectual description (the bibliographic units and titles held, and the scope of the collection); the relevancy of the collection (the appropriateness of the scope of the collection vis-a-vis the library's target group); availability (the extent to which the collection meets the expressed information need of its clientele); accessibility (the ease with which the library user can locate and use materials held by the library); and utilization (the extent to which the collection is used by the library's clientele).

The programmatic activities of the library can be considered the interface between the resources of the library and its environment. Programs are intended to provide services to the library's clientele, both present and future, and to provide appropriately for the clientele's information needs. In discussing programmatic activities, it is useful to segregate them into a cohesive group of tasks:

- Cultural, educational, and information services
- Resource distribution services
- Collection development services
- Technical services
- Administrative-support services

Figure 1 gives an overview of these activity sectors, outlining their contents and providing further refinements that accommodate more complex structures.

Descriptors of programmatic activities can be segregated into measures of resource utilization, activity (what each program center generates), users (who accesses the service), and the outcome or performance of each activity. Most of these measures are straightforward and are documented in the literature.

Resource utilization measures the level and type of resources allocated to each functional area. These may be refined to financial measures, personnel measures, and facility measures. Activity measures are those most fully substantiated in the literature and in national data-collection activities (reference

Figure 1. Levels of Programmatic Activities.

LEVEL 1	LEVEL 2	LEVEL 3
Cultural, educational, and information services	Information services	<ul style="list-style-type: none"> Machine-assisted reference services Readers and research advisory services Referral services Research and analysis services Selective dissemination of information services Other information services
	Cultural, recreational, and educational services	<ul style="list-style-type: none"> General education programs Cultural events programs Special services Other cultural, recreational, and educational services
Resource distribution services	Circulation services	<ul style="list-style-type: none"> Equipment distribution services General circulation services Media distribution services Reserve services Other circulation services
	Interinstitutional exchange and delivery services	<ul style="list-style-type: none"> Interlibrary loan services Interlibrary delivery services Other interinstitutional exchange and delivery services
Collection development services	Collection development services	Collection development services
Technical services	Materials acquisition services	<ul style="list-style-type: none"> Ordering services Searching and verification services Other materials acquisition services
	Materials organization and control services	<ul style="list-style-type: none"> Cataloging services Catalog maintenance and production services Serial control services Other materials organization and control services
	Collection maintenance services	<ul style="list-style-type: none"> Collection resources maintenance services Physical processing services Other collection maintenance services
Administrative services and administrative support services	Coordinative/leadership activities	<ul style="list-style-type: none"> Planning and program development Liaison activities Public relations and development Other coordinative and leadership activities
	Management services	<ul style="list-style-type: none"> Financial management and operations Health, safety, and security services Personnel services Other management services
	Logistical and physical plant operations	<ul style="list-style-type: none"> Logistical services Physical plant operations

transactions, circulations, volumes added). User measures describe the clientele actually served, as distinct from the target group the library is intended to serve. Outcomes or performance are most difficult to identify, measure, or articulate.

Outcomes are the results, impacts, and consequences of programs that embody what the library sets out to do. From a practical standpoint, the measurement of impact continues to be elusive. Outcome measures concerned with impact illustrate the complexity of measurement. Obviously, the dollar value of improved decisions or the impact of the interlibrary loan program is intricate and difficult to measure. This is most vivid in the academic or school library, where the concept of impact is linked directly to the assessment of educational outcomes or results of the educational program. In this case, it is impossible to disassociate the impact directly attributable to the library and that stemming from instruction.

Given these unavoidable complexities, the concept of outcomes has been articulated, in the framework suggested here, in terms of performance measures—a decidedly more realistic concept to codify and measure. Performance measures assess the library's level of objective attainment. They have two perspectives: internal and external. The internal perspective relates to the level and adequacy of performance, which are managerial concerns of the library. For example, the error rate of personnel and fiscal transactions is a management concern. The external perspective of performance concerns the ability of the library and its activities to meet the needs of users. An example of a performance measure with this perspective is user satisfaction with information services.

The area of outcome/performance measurement is in a primitive stage of development. Nonetheless, a number of criteria can be isolated as critical to institutional performance: policy effectiveness; operations effectiveness (in-

cluding user satisfaction); resource effectiveness; budgetary control; work environment/staff morale; staff competence; productivity; accuracy; and timeliness. These performance variables apply to each of the functional areas of the library. The idiosyncratic nature of performance measurement, and the fact that outcome/performance measures are closely linked to specific objectives of the library, preclude the estab-

There are no simple methods or straight avenues by which to achieve a common language of data for reporting and recording information about libraries. A number of consequential decisions need to be made and it will be difficult to do so; however, the consequences of not making these decisions can be even more harmful.

lishment of standard performance measures, at least at this time. This circumstance necessitates individualized approaches to the development of outcome/performance measures.

Figure 2 summarizes the framework as developed to this point. Note the intimate and intricate relationships existing among all the components of the system. Present data-collection activities at a variety of levels stress the level of resources (input) available to the library. Increasingly, however, the importance of the utilization of these resources across programs is being recognized. The various components of environment, input (resources), output (activities), and outcomes need to be linked together in a meaningful manner.

To What End?

For the most part, data use can be separated into two purposes: communications (to relate information to another), and internal management and plan-

ning. Data necessary for communication are identified by the reporting requirements placed upon the individual library by parent organizations, government agencies, and national organizations. Data for planning and management are determined by the types of decisions to be made and the perspective of the library manager. Thus, data combinations necessary for decisionmaking become unwieldy, if not impossible to enumerate. The impracticality of isolating precise data uses and data combinations for these

settings makes it worthwhile to isolate an array of general types of measures commonly used in planning and evaluation. Analyses of effectiveness and efficiency are possible, for example, using combinations of the various measures framed in the structure. At the beginning of each planning period, the library manager allocates available resources across programmatic functions in order to produce certain activities and generate specific outcomes. At the end of each planning period, the library manager may evaluate the actual

Figure 2. Summary of Information Structure for Libraries.

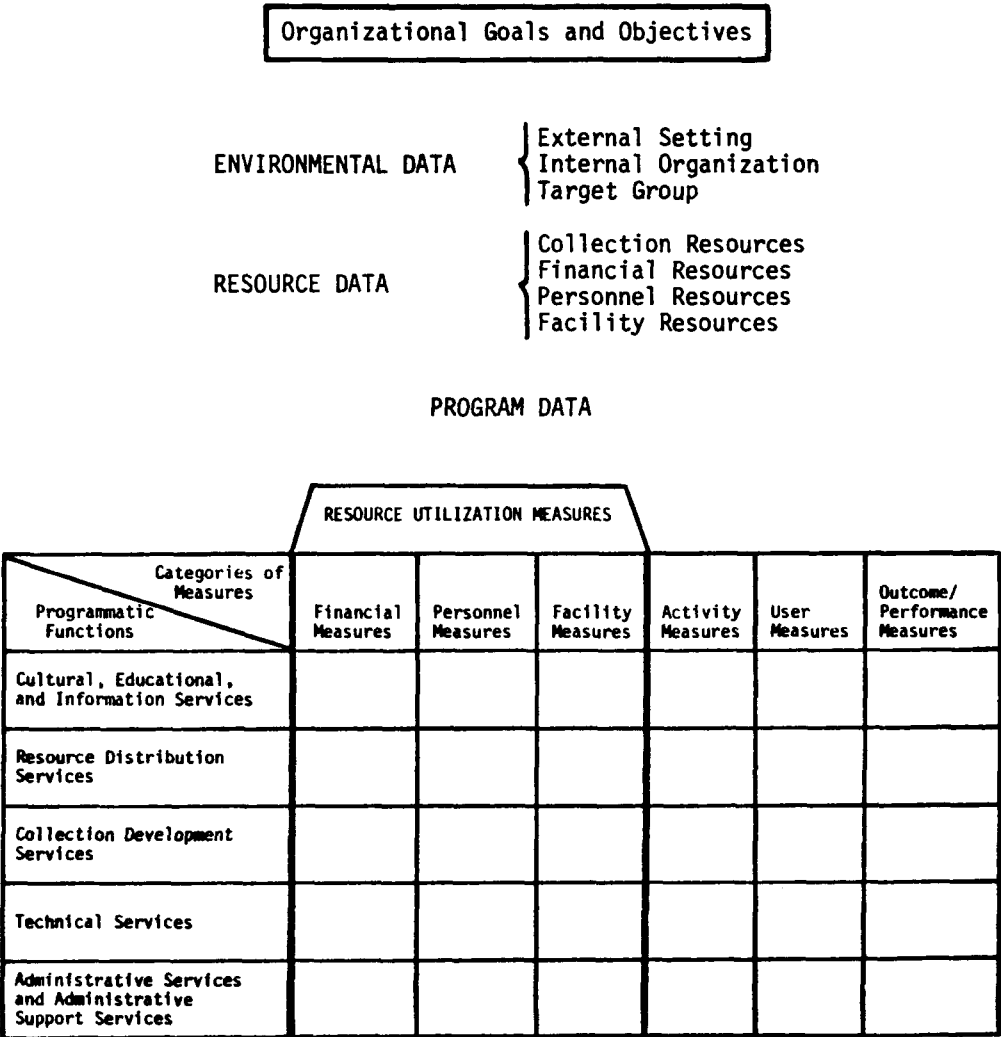
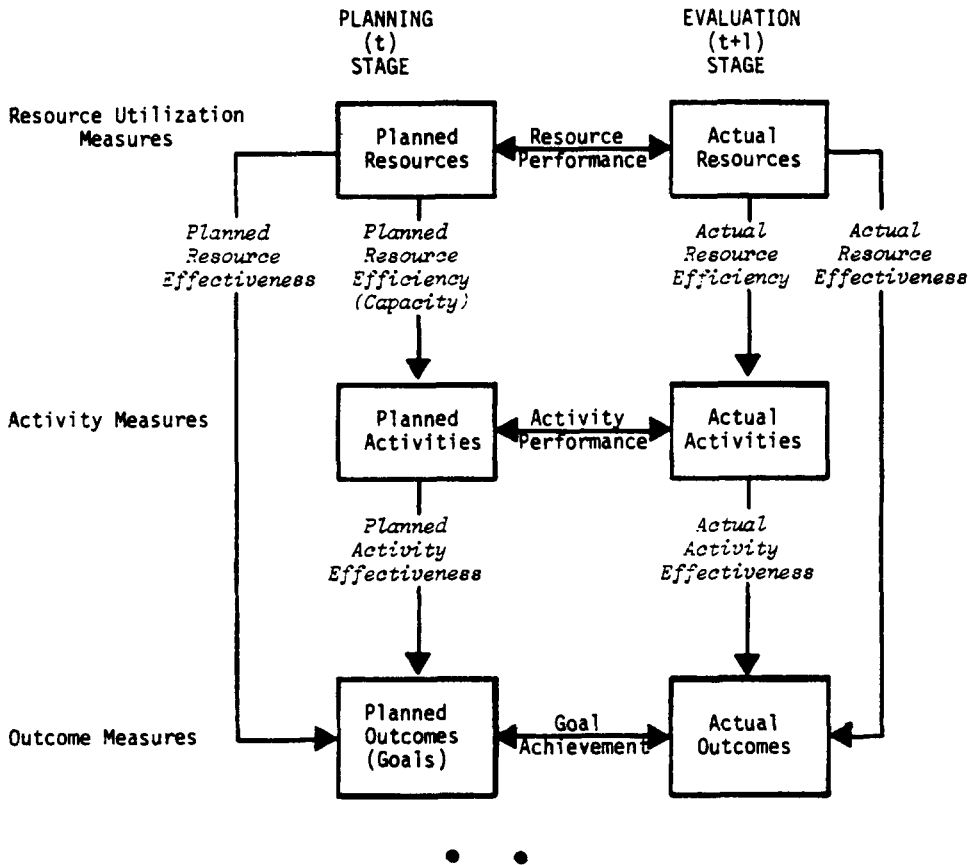


Figure 3. Planning and Evaluation.



results of these decisions against anticipated results.

Figure 3 looks at one way of conceptualizing this process. Tracing resources into activities and outcomes provides measures of resource-efficiency, resource-effectiveness, and activity effectiveness either on the basis of planned or actual results. On the other hand, mapping planned resources and planned activities against actual resources and activities provides measures of performance. Finally, the evaluation of outcomes (planned versus realized) offers a measure of goal achievement. The difficulties associated with interpretation of these measures are not trivial. Caution should accompany reflection on the implications of resource efficiency. Efficiency does not measure the quality of library services,

nor does it necessarily reflect upon performance. In recent years, the concentration on efficiency has led to an underemphasis on performance, effectiveness, and outcomes of the library.

In addition to the applications and uses associated with effectiveness and efficiency, several others could be made. The framework has been given significant flexibility, to allow for combination as well as examination of measures in isolation.

Conclusion

Conformity in definitions and language does not obscure the individuality of each library. Clearly, the demands for and uses of data are linked to the environment and setting of the individual library. Perhaps it is time to

examine the similarities in purpose and activities of all types of libraries, acknowledging still the important differences. The framework presented in this paper is one way of addressing the commonalities among libraries; it is not, however, the only way. Without a common language and common understandings—which can only evolve with cooperation, patience, and good will—we cannot effectively and efficiently address our common problems.

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Automating the Vertical File Index

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■ The Boys Town Center's Library Services Division maintains a substantial collection of ephemeral research materials. Extensive subject indexing was required for optimum use of timely data in the file. Through cooperative efforts with a computer programmer, an online indexing system was implemented on a local minicomputer. The user-oriented system has improved reference services and serves as a prototype for an online catalog.

VERTICAL FILE COLLECTIONS are a rich source of timely data, hard-to-find facts, and valuable information of limited distribution. Many library users are unaware of a vertical file's potential simply because it is cumbersome to use. Typically, the collection is arranged by broad subject categories with few or no cross references. Author and title access is virtually nonexistent. Current data are frequently obscured from clients, rendering their searches incomplete and perhaps inaccurate.

The Library Services Division at the Boys Town Center for the Study of Youth Development was no exception. Until 1977, a vertical file collection of approximately 1,000 items was minimally maintained in main entry order. A card file of secondary authors and titles provided limited access to the collection. The collection contained

timely social science data in unpublished reports, reprints, legislation, ephemeral pamphlets, government documents, and bibliographies, yet few clients could use the collection without relying upon the memory of a library staff member. As the collection grew, the librarians realized a more comprehensive indexing system providing multiple access points to authors, titles, series, and subjects was required to maintain quality reference services.

The library has had a history of using computers to deliver optimum services since its inception in 1975. A specialized collection of 6,000 monographs, 450 journals, and 10,000 microforms in the core areas of psychology, sociology, criminology, and social work is augmented by several automated systems. Extensive interlibrary loan services are provided with the assistance of the OCLC database; reference searches are

conducted on the BRS, Lockheed, SDC, and New York Times databases; OCLC catalog subscription tapes are used to generate a COM catalog; and a journal routing system is operating on the Center's own minicomputer. The latter system was coded by several programmers in the Center's Research Computing Division and provides a current awareness service to all Center staff. This collaborative effort was so successful that the concept of an automated vertical file indexing system was exciting to both librarians and programmers. Discussion of specifications began immediately to determine the feasibility of implementing such a system.

Library literature provided no information on designing a vertical file indexing system. The standard handbook on vertical file operations (1) provided guidance in organizing the collection, but offered no assistance in automation efforts. Several articles on indexing newspaper and clipping files were informative (2, 3, 4, 5), but ultimately such systems as Lockheed's DIALOG information retrieval system were looked to for system parameters. Computer science literature provided the programmer with technical documentation on file structures which could be interpreted for a vertical file system.

The original requirements for an automated, vertical-file indexing program included the following:

- 1) The system must be accessible to any Center staff member from any terminal accessing the in-house minicomputer 24 hours a day, 7 days a week.
- 2) Access must be provided through four searchable fields: author, title, subject, series.
- 3) All searchable fields must be repeatable in any record.
- 4) A complete bibliographic entry must also include two nonindexed fields: publication information and notes.
- 5) Modes of access to the database must include querying the file,

inputting a record, editing a record, deleting a record.

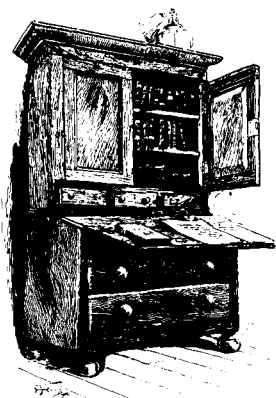
- 6) Additional features should include writing the results of a successful search on to disk storage for line printing; expanding an index online to scan for relevant access points; modifying a print format for abbreviated or full record display.
- 7) Boolean operators (AND, OR, NOT) must be provided for all searches.
- 8) Truncated searches must be accommodated on all dimensions.
- 9) File space must accommodate a collection size of 5,000 items (regular weeding would eliminate wasteful storage).
- 10) A "help" function must be available to provide the novice user with summary information on commands and their uses.
- 11) Online thesaurus access for subject searches would be investigated by both the librarians and by the programmer/analyst.
- 12) An archive database file must be maintained for easy restoration should a malfunction occur.

These specifications were submitted and accepted by the Research Computing Division in the summer of 1977. File design began immediately with a one-year deadline for a fully operational system and complete documentation. Fortunately, the deadline was met with two weeks to spare.

Collection Reorganization

While the programmer/analyst was working on systems design, the library staff was faced with several organizational problems concerning the physical arrangement of the collection, creating a subject indexing system, and developing input specifications for the database records.

At the outset, the vertical file collection included 1,000 items. Systematic collection development plans called for an annual increase of approximately 700 documents. At that time, the collec-



tion was shelved in manila file folders arranged alphabetically by main entry and was accessed through an author/title card file. Automation plans necessitated a change in physical organization. The computer would automatically provide accession numbers for all records, numbers which would also serve as shelf numbers. As a result, the retrospective file was physically reprocessed title-by-title as new records were input. Documents were placed in new end-tab folders and shelved in accession number order. This arrangement precluded collection browsing, but the new system would provide this capability online. Arrangement by number has made reshelving easier and quicker for support staff. It has also eliminated the sometimes difficult task of identifying the main entry of a document for retrieval.

Since the computer program would provide online browsing, indexing had to be as complete and comprehensible as possible. The programmer/analyst agreed that all searchable fields would be repeatable within a record. Consequently, any variant authors, titles, or series could be entered on a record, eliminating the need for cross references. Since several staff members were creating records for database inclusion, input specifications became a necessity to guarantee consistency. The librarian for Automated Services began work on this manual immediately, analyzing the collection to determine the types of documents held. An input manual, arranged alphabetically by the type of material indexed or by the topic of a

special problem, evolved slowly and proved to be a valuable tool. Once the programmer/analyst requested sample data for test phases, records were input just as they would appear in the final database. The input manual is maintained online in a text editor file. As changes and additions need to be made, old manual copies are discarded and updated manuals are run on the line printer for all staff involved in the project (6).

Probably the biggest challenge of the project was subject indexing. Subject access had never been attempted with the old file, rendering the collection virtually useless for quick-reference requests. The COM catalog was indexed with Library of Congress subject headings, access points which were too general and limiting for specialized social science information. Center researchers preferred descriptors used in the online literature search services, and the public services staff recommended use of a similar thesaurus for the vertical file system. The librarians decided that optimum reference service should be provided by a locally developed thesaurus. The librarian for Public Services took charge of identifying the most useful terms in *ERIC*, *Psychological Abstracts*, *Sociological Abstracts*, and other more specialized thesauri. Local terms were added when the standard thesauri did not provide adequate depth or scope.

Subject indexing proceeded very slowly. One hundred sample documents were used for the creation of input specifications, for system tests, and for the creation of a sample subject authority list. Thesaurus construction began on a title-by-title basis, that is, terms were established only when needed. Consequently, the thesaurus structure of broad term-narrow term-related term was created piecemeal; "use for" notes, narrow terms, and scope notes were added when needed, but the authority list lacked a comprehensive endemic structure. The actual structuring of the thesaurus is currently being completed by the reference librarian.

The System

Throughout programming operations, library staff worked closely with the Research Computing Division, meeting informally as often as three times a week. Communication lines were always open, and technical consultation proved to be enjoyable as well as productive. As a result of such cooperative efforts, the Library Services Division now has a sophisticated, user-oriented database.

The vertical file system is coded entirely in BASIC-PLUS-2 on a PDP-11/70 minicomputer under the RSTS/E operating system, and uses the RMS-11 package for B-tree file structure. The RMS-11 data structure cut programming time in half and offers rapid retrieval and efficient storage of up to 65,535 records. The online system consists of five components: INIT, PROC, DELCON, QUERY, and EXPAND. Only the latter two programs are available to users.

INIT is a program run exclusively by the computing staff. It is a simple program which initializes all files and indices in the database. PROC and DELCON are available only to computing staff and to the librarian for Automated Services. PROC is the program by which ASCII data files, created by library staff with a text editor program, enter the database. PROC indexes the pertinent fields, allocates space in the database for the bibliographic elements, and assigns an accession number. Conversely, DELCON is the means by which records are deleted from the vertical file database and converted back into ASCII files for further editing. Security measures are built into all programs to insure against database corruption.

An example of a record created with the text editor appears in Figure 1a. Note that field tags are abbreviated for convenience. A positive or negative number request must be indicated to the computer. Positive-number documents are shelved in the vertical file collection; negative-number documents

Figure 1a. Example of Record Created with Text Editor.

```
*do +
*au Chestnut, Robert W.
*ti Comparing "facts" with findings: empirical
research on television advertising to children
*pu Washington, D. C.: Journal Supplement
Abstract Service of the APA, 1979,
*se JSAS MS.1878
*no Bibliography: pp 20-24
*su Television viewing
*su Children
*su Television advertising
*su Consumer attitudes
```

Figure 1b. Record in Its Final Form.

```
Accession #: 1750
AUTHOR
>Chestnut, Robert W.

TITLE
>Comparing "facts" with findings: empirical
research on television advertising to children

PUBLICATION
>Washington, D. C.: Journal Supplement
Abstract Service of the APA, 1979,

SERIES
>JSAS MS.1878

NOTES
>Bibliography: pp 20-24

SUBJECT
>Television viewing
>Children
>Television advertising
>Consumer attitudes
```

are shelved elsewhere in the library and are explained in the notes field.

The same record, once PROC'ed into the database, appears in its fuller form in Figure 1b. Field tags are clearly spelled out, making user interpretation much easier. Variant authors, titles, or series are delineated by start-of-field markers.

QUERY is the most important component of the vertical file system. This interactive program can be accessed by any user to search the database. QUERY contains a "help" file which displays brief information on the ten available commands for the novice user:

Author=<search argument>
Title=<search argument>
Subject=<search argument>
Series=<search argument>
the searchable dimensions

Expand=<index>=<argument>
a function designed to provide the user with a listing of 12 lexically consecutive index terms in a specified index at a specified beginning point

Print=<set number>
Write=<set number>=<filename>
functions to display search results online or to write the same search results onto disk for line-printing

Combine=<set number> [and/or/not] <set number>
means by which a search is refined with Boolean operators

Modify=<print format number>
a user can customize search results by selecting the length of bibliographic citations

Quit to terminate a search session

All commands may be abbreviated to the first two letters.

Since the "help" file primarily serves as a memory prompt, more detailed instructions are available in a user's manual (7).

A truncation feature of QUERY is particularly helpful to users unfamiliar with name entries or to users who might require a general subject search. Since the vertical file database is not free-text searchable, search fields are indexed on the first 25 characters of the element. A user can truncate any search argument from 1 to 25 characters. Thus, an author search for Joseph B. Smith could be conducted in several ways:

```
au=Smith, Joseph B.  
au=Smith?  
au=smith, j?  
au=smi?  
au=smith, joseph?
```

Note that capitalization is ignored in all search keys. Another means of determining the proper entry form of the author's name is to expand that index at the appropriate point:

```
ex=au=smith
```

This command would result in an on-line listing of 12 lexically consecutive index terms starting at "Smith" in the author index.

The expand function has proven quite useful in the absence of an online thesaurus. Additionally, the other publicly available program, EXPAND, allows the user to list out the entire contents of any of the four indexes online or offline. The program prints out each indexed element and a count of the times the term has been entered into the database. Not only has EXPAND provided a quick listing for users (especially helpful for subject listings) but it has proven exceptionally useful to library staff for authority work and quality control. Once a month, the librarian for Automated Services runs EXPAND for all four indices to check for typographical errors and incorrect entries. It has also provided the reference librarian with a means of monitoring the distribution of subject term usage.

Sample Search

An example of a search and record printout is shown in Figure 2. The user logs on to QUERY (a), MODIFIES the print format to option 5 (for complete records to be displayed) (b), and proceeds with the search. The user requests an EXPANSION of the author index (c) to determine the proper form of the name James Garbarino. An AUTHOR search is then initiated (d), which results in the creation of a set of 66 documents authored by Garbarino. The user then searches the truncated SUBJECT term "hospital?" (e) and learns that the database contains 6 records indexed by "hospital programs." A COMBINE command (f) creates the logical product of sets 1 AND 2. The user learns that 3 documents about hospital programs authored by Garbarino are in the vertical file collection. Finally, the user PRINTS set number three (g) to view the relevant documents. The QUIT command (h) logs the user out of QUERY.

Figure 2. Sample search and record printout.

(a) run query	Document: 1065
Q U E R Y : Document Information Retrieval	Author
(b) ? mo=5	>Garbarino, James
(c) ? ex=au=garbarino	Title
GARBARINO, ANNE C.	>Changing hospital policies and practices concerning childbirth: applying a developmental perspective to the task of preventing child abuse
GARBARINO, JAMES	Publication
GARMEZY, NORMAN	>(February 1979)
GARRETT, BEATRICE L.	Notes
GASSER, RITA D.	>Draft
GAYLIN, WILLARD	Subject
GEDA, CAROLYN L.	>BTC79
GELB, JOEL	>Birth
GELETA, NICK	>Neonates
GELFAND, DONALD E.	>Parent child relationship
GELLER, DANIEL M.	>Family centered childbirth
GELLER, JANET A.	>Hospital programs
(d) ? au=garbarino, james	>Child abuse prevention
Set1 66 GARBARINO, JAMES	>Child neglect prevention
(e) ? su=hospital?	Document: 1127
Set2 6 HOSPITAL PROGRAMS	Author
(f) ? co=1 and 2	>Garbarino, James
Set3 3	Title
(g) ? pr=3	>Family centered childbirth: selecting a hospital
Document: 237	Publication
Author	>Boys Town, NE: Boys Town Center for the Study of Youth Development, 1978
>Garbarino, James	Notes
Title	>2 copies
>Becoming a family: a survey of metropolitan Omaha hospital policies and practices affecting parent-child relationships	>A more detailed version of this paper is shelved in VF 237
Publication	Subject
>Boys Town, Neb.: Boys Town Center for the Study of Youth Development, 1978	>BTC78
Notes	>Family centered childbirth
>3 copies	>Hospital programs
Subject	>Parent child relationship
>BTC78	>Omaha, NE
>Child abuse prevention	>Neonates
>Program description	>Hospital programs
>Program evaluation	>Family centered childbirth
>Omaha, NE	
>Parent child relationship	
>Neonates	
>Hospital programs	
>Family centered childbirth	
	(h) ? quit

The vertical file indexing system is proprietary software, not available for purchase or exchange.

Discussion

The vertical file system has been well received by Center staff. Library reference staff members have substantially increased the depth of their services by having multiple access points to the vertical file collection. Since the entire reference staff has participated in thesaurus construction and record input, they are quite familiar with the contents and use of the database.

The cooperative efforts in automating the vertical file not only got the job done faster but also improved the morale of the entire library staff. Similarly, users are very receptive to the new system and appreciate the increased services it offers. This is encouraging, for the vertical file system was designed as a prototype for an online catalog which is currently under development. It is hoped that user receptivity to the vertical file system will smooth the transition from a COM to an online catalog. The new online catalog system will improve services even more, for the present vertical file database will be merged with records from the OCLC tapes to form one integrated file. Users will access one program for information on the library's entire holdings.

Analysis and design of a vertical file system has been challenging and instructive. The enthusiasm of research computing staff for innovative projects facilitated cooperation, and library staff involvement increased morale and improved everyone's technical skills. But above all else, the project confirmed the librarians' conviction that computers, when programmed well, can only improve the quality of user services.

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Word Processing Equipment for Information Centers

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■ Access to a word processing system has been an asset to a small, highly specialized information service in a consulting firm. The system's software can accommodate catalog card production, bulletin production, printouts of technical service data, and specialized bibliography printouts. It provides a computerized database of all internally cataloged and indexed materials which can be accessed using "free-text" searching.

THE Energy Economics Group of Arthur D. Little, Inc., has a specialized information center and library collection which serves the needs of approximately 18 professionals. The collection has been undergoing an extensive reorganization, primarily to provide documentation of the 140 serial titles and over 2,000 books, documents, and reports which it houses. Not only the incoming materials needed to be cataloged, but also the existing collection which had grown for more than six years without a formal cataloging procedure.

The only options available for reproducing catalog cards were typing them all in the information center or sending the work out to one of several firms to be photocopied or computer generated. The costs for sending work out (\$3.00-\$7.00 per) card set, plus any attendant pre-preparation on a computer coding

sheet, are considerable. When the Energy Economics Group began efforts to acquire Word Processor Systems (WPS) equipment to meet its normal secretarial needs, the author reviewed the trade literature of some of the more sophisticated units to assess the potential application to the information center operations. It was decided that any of the WPS could serve a broader range of uses than the traditional secretarial applications for which they are primarily intended. None of the systems would perform the wide range of functions expected from an automated library system, but all offered some capability of automating the most time-consuming clerical tasks of a small collection. All will automatically reproduce catalog cards, tables or reports in a uniform format, after an unformatted data set is typed for each record.

Because the information center was not part of the decision-making process, a full analysis of the best system for a library was not done. It is recommended that a library not limit its

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reviews to word processors if it will be the sole user of automation equipment. The cost of leasing a WPS at about \$700/month or purchasing one for \$12,000-\$24,000 may approach the cost of some much more versatile computer software designed especially for library use. Software might prove a better investment if the library has access to a computer.

The most complex tasks for which the word processor is used are catalog card formatting and card production. It is also used to compile and print a weekly information center bulletin to announce all new materials, journal articles, government documents, company reports, and books.

Initially, the primary advantage to the information center appeared to be the execution of uniform, less expensive, and time-saving catalog card production. A large volume of original cataloging would be processed, but the input of new items would, eventually, be only about 20-40 entries per week. The number of entries could then be easily handled on a "time-available" basis. This proved to be the case but, with further use, the benefits have been extended. While WPS are not to be equated with large computer systems or as a substitute for custom, online database packages for libraries, they do have a place in some small operations. The following is an overview of the function of such technology in one routine library operation. This is not intended as an instruction manual but is designed to familiarize the potential user with the basic elements of the system and center's use of it.

Software

The Digital Equipment Corporation (DEC, WS-81) word processor which the Energy Economics Group leased uses a WPS-8 operating system diskette; it is a "stand-alone" system. This software is designed as a text editing package for formal report production. However, it has an added feature designed to print multiple copies of a letter or

table, allowing the user to include variable information in some parts of the output: i.e., one may wish to send several clients copies of the same letter in which only the address will be different. By viewing a catalog card or bibliography as a table, the same feature is used to format cataloging information in a conventional way while varying the data for each entry. Another feature allows the information center to select appropriate entries by subject for the weekly bulletin. The section of the software package which does formatting and data selection is called "List Processing."

INPUT

This program allows the cataloging elements to be entered in a "list" format on a second disk called a "data disk." The arrangement of the "list" and the fields that were specified are shown in Figure 1. Sample data has been entered to show how the input would look on the display screen.

Once the blank "list" of fields was determined the catalog data could be entered. The routine is designed to allow the cataloger/subject specialist to input directly at the terminal while indexing journal articles, books, and so forth. The terminal (VT 100) has a cathode ray tube (CRT) which permits viewing of the data during input. The columns "Field" and "Example of Data Entered..." show exactly what the record looks like on the screen. The fields were generated on the data disk in a continuous list with spaces for typing in the data.

The extra title fields were added to accommodate a unique WPS software design feature which affected the output. A trial with output of the final card (see Figure 3) revealed that separate fields needed to be included for each line of the title which fell adjacent to a potential field in the call number fields on the card. This insured that the title would be indented line by line (as shown in Fig. 3), rather than justifying at the left hand margin of the card

Figure 1. Input.

Field Name*	Field	Example of Data Entered in the Field
call letters	(cl)	TP
call number	(cn)	690
call author	(ca)	U8
call year	(cyr)	
call volume	(cvol)	
author	(author)	U.S.DOE.EIA.
title entry	(title)	Determinants of refinery plant size in the United States.
title entry 1	(title 1)	Springfield, Va., Oct., 1978.
title entry 2	(title 2)	
title entry 3	(title 3)	60p. (DOE/EIA-0102/45) (AM/EI/78-13)
abstract	(ab)	Oil import program, entitlements, pricing policy, and taxation shown to be significant determinants.
subject headings & tracings	(sh)	1. Refining industry-Economics 2. Refining industry-construction.
Week number & year	(no/yr)	2/80
number of cards	(nc)	4
subject code	(sc)	c

*This column does not appear on the screen.

where it would interfere with the call number. The user's manual for the WPS instructs the user in avoiding such margin problems and carriage return features. Also, the DEC-WPS are backed up by customer service representatives to give assistance when needed.

An option which was pursued without much success was to gain Digital's interest in modifying or creating alternative WPS software for library-type applications. Although a demand had not yet been created for such revisions, the potential for WPS library software packages will mature in time.

OUTPUT

After input, each record is ready for manipulation for printout in any number of desired formats. It is during the output generation that the "List Processing" option section of the software is invoked. For example, to generate cards, a format instruction is designated and a series of specifications are executed to print the desired number of cards for each record (see Figure 2). This involves a Boolean logic statement: i.e., IF (nc) = 4 then process record; or if we wish to segregate this week's output from other weeks', IF (nc) = 4 and (no/yr) = 2/80 then process record. All of the records with 4 in the

(nc) field and with week 2/80 are grouped to form a document. Once the document is formed, the print instruction is applied to make 4 cards of each record using a pre-coded format on the size paper that has been specified, in this case catalog card size (see Figure 3). This is continued until all cards are duplicated the desired number of times.

The information center has "canned" formats for bibliographies and bulletins. The selection of records for bulletin production is much the same but in this case we selected subject codes, (sc), so that, for example, all of the "Natural Gas" entries are segregated from "Crude Oil." Instructions are given to print on standard paper. Only one hard copy of the bulletin is made with the WPS printer. It is then sent out to be photocopied for distribution.

Free-Text Searching

A bonus feature was the system's capability to search and retrieve *anything* that had been entered. Because the computer is small (PDP-8), these searches are not fast by "online search" standards. When a disk is full (approximately 325 entries), the search takes about 10 minutes. Only one disk may be searched at a time. For example, if a

Figure 2. List Processing Form Showing Layout of Fields.

(cl)	no.y	nc	sc
(cn)	(author)		
(ca)	(title)		
(year)	(title 1)		
(y.no.)	(title 2)		
	(title 3)		
(ab)			
(sh)			

Figure 3. Finished Catalog Card as It is Printed Out in "Card" Format.

TP	2/80 4 c
690	U.S. DOE. EIA.
U8	Determinants of refinery plant size in the United States. Springfield, Va., Oct., 1978. 60 p. (DOE/EIA-0102/45) (AM/EI/78-13)
Oil import program, entitlements, pricing policy, and taxation shown to be significant determinants.	
1. Refining industry—Economics 2. Refining industry—Construction	

user supplies a government report number but has no author or other bibliographic information the information center cannot determine whether it has the report from the card catalog because entries are not made for report numbers. About 75% of the cataloged items are government documents which often have two report series numbers and sometimes a contract number. Since the Energy Economics Group rarely (once every three months) requests a document solely by document number, creating up to 60 extra cards per week to cover this unique request seemed less effective than relying on an occasional, slow, free-text search. Report number entries were standardized, and all report numbers in the record entry were included to ensure that retrieval would be dependable. A "free-text" search on each disk determines whether the report is in the systems; if it is, the citation will show on the CRT screen.

The search mode can also be used to generate printed subject bibliographies. This is a potential selling tool to be included with proposals as an example

of the library's collection. Citations can be searched online while the searcher performs other library tasks. The machine makes a noise that indicates that it is searching and then stops when it has found a record. There is a time saving in producing a bibliography like this rather than retyping all the references with the attendant editing and formatting.

Because the WPS was acquired after 1020 items had been cataloged without the means to produce cards, the information center staff was under pressure to begin a massive "catch-up" as soon as possible. Once the backlog is eliminated refinements can be made in the use of "List Processing." There is also potential for applying the software to many more of the library's operations. For example:

- Generating letters on a regular basis to acquire annual publications.
- Printing regular listings of serials, holdings, and order information.
- Maintaining a telephone directory of agencies and contacts for the statistical data the library is often asked to acquire by phone. (A new "sorting" system's disk has been acquired which will facilitate the alphabetizing of entries.)

Since the information center did not have an option concerning the type of word processing system to be leased, it had to "debug" the system to accommodate its unconventional needs. In the firm's consulting operations, time on leased equipment, which can be charged to a case, always takes precedence over overhead activities, such as the library. Given the information center's limited use of the word processor, the peculiarities of the DEC system do not pose a burden at this time. However, it is recommended that if a library is to be a major user and is included in the selection process, then an evaluation of all equipment and software should be made. The advantages and disadvantages that were encountered in the use of DEC equipment are listed in the Appendix.

Word processing technology is still in its infancy, yet it is proving to be a powerful tool for office activities. As more libraries gain access to WPS equipment and share their experiences there are certain to be evaluations to determine the best WPS for given operations. Special librarians, in particular, are in an advantageous position to fully explore the potential of this equipment and to seek unique applications. Our volume of clerical tasks and the labor intensive nature of our operations should make access to the use of WPS very cost effective on a shared basis with other departments.

Acknowledgments

The author appreciates the enthusiasm and assistance of Sandra Alston, assistant librarian, Energy Economics Library, who spent patient hours learning the DEC list processing techniques and working with the author to adapt the system to our library's activities. Thanks are also due to Meredith Wright and Joan Long of Union Carbide Corporation, Parma (Ohio) Technical Center, Technical Information Service, who, during my four years with them, provided inspiration to pursue new technologies and ideas. Their excellent training and thoughtful approaches to library problems is still with me and, I hope, well reflected in this work.

Appendix. Advantages and Disadvantages Encountered in the Use of DEC Word Processing Equipment.

ADVANTAGES	DISADVANTAGES
<ol style="list-style-type: none"> 1. Automated free-text searching. 2. Database which stores data in compact form and can be used to print cards or book catalog in any format. 3. Prints in various sizes and pitch of type; Prints on any size paper or card stock; letter quality printing. 4. Corrections, editing, manipulating and formatting data are very simple and rapid. If errors are found on cards, correction takes only a few minutes. Generation of a new set of cards is also very rapid. 5. If the library determines that it can store only X years of cards in a card file then the disk is practical to keep after the cards are discarded. 6. Cloth or plastic ribbon can be used. 7. Multiple weights of continuous feed card stock are available; be sure to look for stock which has the correct pin spacing for your equipment and cards which need only side "bursting" (tops and bottoms are unattached). 	<ol style="list-style-type: none"> 1. Slowness of online searching; about 10 minutes/300-400 citations. 2. Disks have a life expectancy of 20 hours in machine use, cost \$7 each, and hold about 325 entries; to protect against failure or wearing out, back-up copies should be made of every disk. 3. Printer is very noisy and hoods are several hundred dollars; print wheels cost \$12-\$16 and are plastic with a very short life (a few days with heavy use). Printer is mechanical rather than thermal and requires more repair than other parts of the WPS. 4. Output is easy but time-consuming; about 3 hours for 70 main entries plus tracings (average 6 tracings). The user does not have the option of making any part of the operation more efficient by reprogramming in the conventional sense. The system's disk is the program for this type of WPS and one must operate within its limits. 5. Given the limited disk life, one would only store little-used files in this manner; archival use only. 6. Plastic ribbons are expensive (\$12-\$15) and can only be used once; the cloth ribbon (\$8) gives a copy which is too faint to photocopy clearly.

* * *

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sla news

CHAPTERS & DIVISIONS

Alabama

A breakfast meeting was held April 18 during the Alabama Library Association meeting in Birmingham. Bob Schremser, Alabama Public Library Service, described the activities of the Service within the past year. New officers were elected for 1980/81.

Baltimore

The annual business meeting and election of officers was held on May 21 in Essex, Maryland. The program which followed included a panel discussion on the five-year master plan for Maryland libraries being developed by the Maryland State Department of Education.

Central Ohio

Crime prevention was the topic of discussion at the May 5 meeting. Police officer Bill Lawson addressed the members and showed a film on the subject.

Results of the voting on candidates for office for 1980/81 were announced at a May 15 Chapter meeting.

Eastern Canada

The annual meeting was held on May 14. Mel Bernstein, the dinner speaker, gave a talk on personal financial planning.

The 13th edition of the Chapter's *Directory of Special Libraries in the Montreal Area*, which includes listings of over 250 libraries and information centers, is available for \$10.00. Checks payable to the Eastern Canada Chapter should be sent to: Marie José Péan, Bank National — Library, 500 Place d'Armes-15th, Montreal, PQ H2Y 2W3, Canada.

Illinois

A Chapter meeting and Interlibrary Cooperation and Networking Committee Program was held Sep 9 to discuss "Library Systems—Here and Now." The Committee has been studying the structure of systems within

ILLINET and legislation which would offer full and not just affiliate membership to all libraries, including special libraries.

Insurance Division

Copies of the Division's new publication, *Union List of Insurance Periodicals* are now available to contributing libraries for \$3.50 each and to other Division members for \$10.00. This publication is not available for purchase outside of the Division.

Long Island

On July 22, members visited the Plum Island Animal Disease Center, a research facility for the study of contagious foreign diseases among animals which is under the auspices of the U.S. Department of Agriculture. The visit included a tour of the island and library and the viewing of a film on safety.

New York City Women's Caucus

The Women's Caucus met for the third time on April 33 at the Catalyst Library. Members discussed plans for strengthening the network. These include the publication of the Caucus' new newsletter and helping other Chapters organize similar groups.

North Carolina

On Sep 26 members toured Burlington Industries Information Services in Greensboro. Invited speakers at the dinner meeting that followed were: Alan Metter, president, Data-Search; Eva Metzger, Carolina Library Services; and Mary Ellen Templeton, Spectrum Information Services, who discussed "Facts for Free: Experiences of Three North Carolina Private Information Brokers."

MEMBERS IN THE NEWS

Beryl L. Anderson, chief, Library Documentation Centre, National Library of Canada . . . received the Award for Special Librarianship in Canada, 1979/80, by the Canadian Association of Special Libraries and Information Services, a division of the Canadian Library Association.

Patricia W. Berger, chief, Library and Information Services Division, National Bureau of Statistics . . . appointed to serve on the White House Conference on Library and Information Services Ad Hoc Committee on Monitoring and Follow-Up Activities.

Marianne Cooper, instructor, Graduate School of Library and Information Studies, Queens College, C.C.N.Y., . . . awarded the Doctor of Library Science degree by Columbia University and promoted to assistant professor at Queens College.

Jacqueline B. Davis, archivist, Texas Chapter, SLA . . . appointed director, Information Services, Integrated Circuits Division, Motorola, Inc., Austin, Tex.

Laura S. Drasgow, formerly editor, Research Publications, Inc., Woodbridge, Conn. . . now corporate librarian, Barnes Group, Inc., Associated Spring, Conn.

Elizabeth Bole Eddison, chairman and treasurer, Warner-Eddison, Inc., Cambridge, Mass. . . . elected president of the firm.

Carol Hansen Fenichel, assistant professor, University of Kentucky . . . appointed director of library services, Joseph W. England Library, Philadelphia College of Pharmacy and Science.

Dorothy A. Fisk, U.S. General Accounting Office, Washington, D.C. . . . now director, Army Library Management Office, Headquarters, Department of the Army, Washington, D.C.

Bernice Frank, Burroughs Corporation . . . appointed placement coordinator, Michigan Association of Law Libraries.

Sarah (Sally) Garrett, reference librarian, New Mexico State University Library, Las

Cruces, New Mexico . . . elected president, New Mexico Library Association.

Francis Gates, law librarian and professor of law, Columbia University . . . elected president, 1980/81, American Association of Law Libraries.

Charlotte Georgi, chief librarian, UCLA Graduate School of Management . . . received a special award for distinguished contribution at the school's June graduation ceremonies. She has also been appointed Librarian for Business Management History and Bibliography, UCLA Library.

Stanley W. Hess, associate librarian for photographs and slides, Cleveland Museum of Art . . . has joined the staff of the Art Reference Library, The William Rockhill Nelson Gallery of Art, Atkins Museum of Fine Arts, Kansas City, Mo.

Roger F. Jacobs, librarian, U.S. Supreme Court . . . elected vice president/president elect, 1980/81, American Association of Law Libraries.

Dianne N. Karr, research librarian, University of Arizona Computing Center, Tucson, Ariz. . . . now professional services librarian, Computing Associates International, Tucson, Ariz.

Mel Kavin, Kater Crafts Bookbinders, Pico Rivera, Calif. . . . elected president, Library Binding Institute.

Mohammed A. S. Khan, library consultant, U.S. Department of Health, Education and Welfare . . . appointed lecturer, King Abdulaziz University, Jeddah, Saudi Arabia.

Michael E. D. Koenig, formerly information systems engineer, Metrek, a division of the MITRE Corporation . . . appointed associate professor of library service, School of Library Service, Columbia University, N.Y.

Dorothy Kramer, head librarian, Agricultural and Technical Institute, Ohio State University . . . now information transfer specialist, U.S. Fish and Wildlife Service-Power Plant Team.

George I. Lewicky, director of indexing services, H. W. Wilson Company . . . elected president, 1980/81, American Society of Indexers.

STAFF DEVELOPMENT

Beam, Henry H. / A Framework for Personal Development. *Human Resource Management* 19(no. 2):2-8 (Summer 1980).

Most personal development plans fail to produce tangible results for two reasons: 1) without external monitoring, it is easy to procrastinate, and 2) the personal development objectives are rarely developed in a systematic fashion and, hence, lack real meaning to the individual. Most people who are successful and satisfied with their lives have a clearly formulated set of individual aspirations and a carefully prepared set of personal development plans that tell how and why they plan to accomplish them, whereas those who are frustrated believe that organizationally established goals will somehow be sufficient to provide them with a sense of personal worth and achievement. Five steps involved in creating a cohesive personal development plan are presented and explained. They involve a conscious effort on the part of each person to match intrinsic talents and interests with opportunities to find work that brings both satisfaction and success.

Bunker, Barbara Benedict and Bender, Lisa Richer. / How Women Compete: a Guide for Managers. *Management Review* 69(no. 8):55-61 (Aug 1980).

Women and men manage competition differently. In spite of high motivation, declared interest, and a supportive structure, women frequently withdraw from competitive situations. Studies have shown that in a comparison of all-female and all-male groups, the all-male groups developed very competitive cultures with highly differentiated status systems, while the all-female groups were characterized by a concern for fairness and an attempt to equalize relationships. This inability to be comfortable with differences in performance or contribution on the part of women tends to create problems, especially when groups are organized for work. The authors describe various patterns of behavior learned in childhood which make competition difficult for most women and suggest that managers become aware of these and help both men and women explore the usefulness of competitive processes for some situations and the dysfunctionality of them for others.

Golembiewski, Robert T., Fox, Ronald G., and Proehl, Carl W. / Flextime: The Supervisor's Verdict. *The Wharton Magazine* 4(no. 4):42-47 (Summer 1980).

Supervisors of employees on flextime arrangements, i.e., those which permit employees to

determine their starting and stopping times independently every day, given core hours and other appropriate policies, as opposed to "staggering hours," policies which require employees to make an initial choice of workhours and then abide by it, were studied in an effort to determine the effect of flextime on such factors as communications, control, and the supervisor's own work schedule. Both the literature and a study of 43 supervisors showed that while flextime has positive and negative effects, most supervisors were able to handle the problems and preferred it to traditional arrangements. Abuses of flextime were no more prevalent than with other systems, and there were positive effects on productivity and morale which most supervisors felt outweighed the problems encountered.

Levinson, Harry. / Criteria for Choosing Chief Executives. *Harvard Business Review* 58(no. 4):113-120 (Jul-Aug 1980).

The choice of a chief executive is usually a difficult one since no person has all the qualities of an ideal leader. Moreover, psychologists, personnel people, and executives do not agree on what the ideal characteristics of a candidate for top management are. The author, a well-known psychologist, offers a list of 20 dimensions of leaders' personalities under the three general headings of thinking, feelings and interrelationships, and outward behavior characteristics, with scales of descriptive measures; for example, under perseverance at the lower end of the scale is "loses interest fast"; at the other end, "keeps looking for ways around obstacles." The chart is not intended to be all-inclusive but rather a way of calling attention to and examining dimensions of personality that relate to success.

Lazer, Robert I. / Performance Appraisal: What Does the Future Hold? *Personnel Administrator* 25(no. 7):69-73 (Jul 1980).

Studies show that early performance appraisal systems evaluated the characteristics of the person; in the 1950s companies began to use work-related and results-oriented factors in evaluation. With the trend toward Management-By-Objectives (MBO) in the 60s, appraisal systems became objective-setting in nature. Many deficiencies in these systems are pointed out, among them multiple uses of the program, lack of management support, subjectivity, and lack of job-relatedness. An ideal system must yield reliable and valid data, must be based on observable

and measurable elements in the job, and must be standardized in form and administration. In the future, appraisal programs will be fully integrated into an overall corporate Human Resource Planning system and, thus, will aid the company to achieve its objectives while at the same time assisting the individual to achieve personal recognition and reward.

Louis, Meryl Reis. / Surprise and Sense-Making: What Newcomers Experience in Entering Unfamiliar Organizational Settings. *Administrative Science Quarterly* 25(no. 2):226-251 (Jun 1980).

Research on organizational entry shows that current practices do not adequately ease the transition of new members into work organizations and frequently result in voluntary turnover. A new perspective on organizational entry is presented. It identifies key features of the newcomer's entry experiences, including surprise, contrast, and change, and describes sense-making processes by which individuals cope with their entry experiences. The implications drawn from this new perspective for research and practical implications for supervisors, co-workers, and the newcomers themselves are discussed.

Miller, Ernest C. / "Hire in Haste, Repent in Leisure"—The Team Selection Process at Graphic Controls. *Organizational Dynamics* 8(no. 4):3-26 (Spring 1980).

Graphic Controls, a company which makes and sells products used with electronic equipment in the United States and ten other countries, has had a history of a work climate characterized by honest feedback, openness, and a genuine concern for each individual's best interests, with no taint of paternalism. Its use of consensus management in selecting the company's president was merely an extension of well-established practices. The selection process, which emphasizes openness, objectivity, team selection, and the participation of the candidates in defining the job to be filled and in establishing the criteria to be applied, represents an evolution of the development of past selection procedures. The seven steps in the process are discussed along with an evaluation of the process by each of the individuals interviewed for the position. Most of those interviewed and those involved in the process felt that, although time-consuming and more costly than traditional procedures, it is humanistic, fair, and beneficial to both the company and the individual candidates.

Nelson, John G. / Burn Out—Business's Most Costly Expense. *Personnel Administrator* 25(no. 8):81-87 (Aug 1980).

Although burn out frequently hits people in self-imposed, high-intensity situations at the time

of mid-life or mid-career crises, it can happen at any time. It can be compared to a normal grief reaction in that life forces are diverted from the normal range of problem solving and life-sustaining functions. It often centers on crises involving life's disappointments, guilt, and regret. Personnel managers must be aware of burn out in employees and attempt to create a climate of working conditions which raise the level of self-worth and morale. The author suggests several ways in which employers can deal with burn out. The time spent in dealing with the problem will contribute to the development of the employee in a way that will pay off many fold.

Waterman, Robert H., Peters, Thomas J. and Phillips, Julien R. / Structure Is Not Organization. *Business Horizons* 23(no. 3):14-26 (Jun 1980).

Organizational problems, particularly those involving change, cannot be solved by restructuring the organization or by invoking both structure and strategy as tools for improving organizations. The authors claim that effective organizational change is really the relationship between structures, strategy, systems, style, skills, staff, and what they define as superordinate goals. Their theory, the 7-Ss, is graphically presented by a series of lines and circles which convey ideas regarding the multiplicity of factors influencing an organization's ability to change, interconnectedness of the variables, and no implied hierarchy. Each of the seven variables is described, and its importance in the total framework of effective organization is stressed.

Witkin, Arthur A. / Commonly Overlooked Dimensions of Employee Selection. *Personnel Journal* 59(no. 7):573-75, 588 (Jul 1980).

Employee selection can be systemized to a far greater degree than is commonly believed by understanding some frequently overlooked facts about personnel selection. One of these is that the most important indicator of how an employee will perform in the future is how he or she performed in the past. Another is that while evaluation of the résumé or application, interviewing, testing, and reference checking are all part of the process, no one of these should be given disproportionate weight. Another is that the employer should look for those factors which could inhibit success during the interview rather than consider it a meeting of minds to arrive at a hiring decision. Selection mistakes can be caused by biases or dated assumptions that stem from faulty knowledge about what to look for when selecting employees. The proper use of psychological testing as one means of determining those who will be most successful in certain kinds of positions is also discussed.

Lucille Whalen

The Use of Mobile Storage Systems in Talking Book Libraries for the Blind

The Library of Congress' National Library Service for the Blind and Physically Handicapped (NLS) is a program that currently reaches 56 regional libraries and nearly 200 subregional (local) libraries. It is estimated that there are as many as 7.6 million handicapped persons eligible. At a modest budget of about \$26 million annually, 600,000 readers are served through the program. About 22,000 readers borrow braille, over 500,000 borrow materials in recorded formats, and an additional 38,000 borrow large-type materials. Over 13,000,000 items circulate annually to readers in the United States and its territories, as well as to American citizens living abroad.

In order to cut costs and save energy, libraries engaged in the NLS program are seeking new ways to reduce space requirements while enlarging the valuable service to the handicapped. Innovative space conservation methods recently introduced for talking book libraries are increasing stack capacity by about 100% in areas where conventional shelving was formerly used. When you consider that there is presently over 1,000,000 lineal feet of stack space required for talking books, cassettes, discs, and braille, it provides some idea of the extent of one of the most rewarding programs being carried out by the government.

Space is Costly

The cost of space is a paramount consideration in the handling, filing, and storing of such bulky and heavy materials as inch-wide talking book containers, discs, open

reel tapes and cassette tapes, all of which must be kept in multiple quantities running up to 30 copies.

The Florida Regional Library for the Blind and Physically Handicapped in Daytona Beach, under the State of Florida, Department of Education, Division of Blind Services, serves as a model for providing the finest service while employing space conservation methods through the use of high-density mobile filing/storage systems.

As an overview of how costs are controlled in Daytona Beach and the potential that exists in the other libraries, some 5,000 square feet (sf) of floor space is allocated for mobile shelving requiring only one aisle per bay—about one half the space required for fixed-in-place shelves that must provide non-productive multiple aisles.

The High-Density Mobile System

The Daytona Beach mobile installation converted from conventional stationary shelving to a Spacesaver electric mobile system. The mobile system currently consists of 32 double-sided 24-inch wide carriages, 42 feet long and 84 inches high. Each carriage has a capacity of over 15,000 pounds. Open space was set aside for additional mobile carriages, as well as replacement of the remaining non-moveable shelving.

Because of the increased capacity within the space available, it was possible to avoid stacking materials above the top shelf (as previously required), making it easier and safer for clerks to handle material. The electric motorized carriages are mounted on





Program at Daytona Beach library requires massive handling of materials through the mails. Running out of space with old shelving system meant that incoming materials piled up.

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high-precision steel wheels that glide sideways across steel tracks to compact together, requiring only one aisle per bay of eight carriages. They are controlled by dual levers on the outside facing at each end of the carriage to permit quick access from either of the main traffic aisles. One or more (all eight) can be moved simultaneously by pushing the lever right or left to open the desired (single) access aisle.

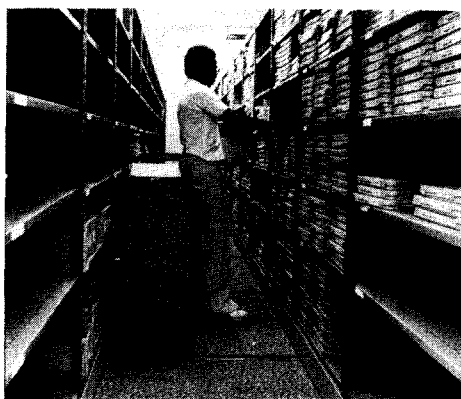
As a safety measure, the system includes passive failsafe flooring that is flush with the tracks and carpeted for sure footing. Sensors in the flooring will deactivate the bay of carriages by the weight of anyone standing in the open aisle. This prevents another person from moving the carriages until the aisle is cleared.

For each bay of carriages there is a panel of two-color safety lights mounted on the outside face panel at both ends. Although the carriages will not move when someone is standing on the flooring in the aisle, the sequenced light arrangement will indicate that the aisle is being used and also the position of the person in the aisle.

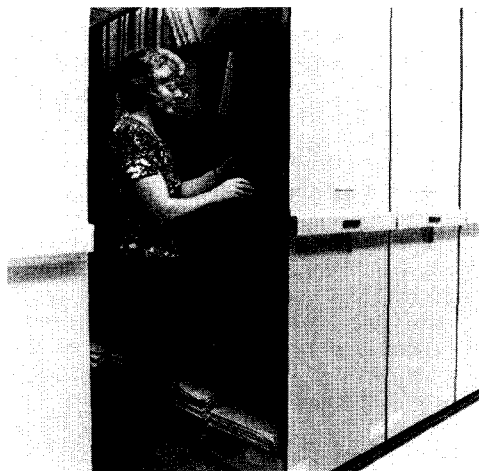
Labels in braille and large print on the face of each carriage identify what is on the shelving and make it possible for clerks in the library, who have some sight but are legally blind, to participate in the library operation.

Return on Investment Savings

Daytona Beach is the largest and first complete installation of its kind utilizing mobile shelving. The shelving has saved



While standing in aisle the weight of clerk activates sensors in flooring preventing any carriage movement.



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5,000 sf of floor space for the library's collection. Based on the Daytona model, if all 56 regional libraries in the NLS program converted to mobile shelving, it would result in a total reduction of space of about 280,000 sf. In the Daytona case, building construction costs for a warehouse pre-engineered building came to about \$15.00 per sf, or a savings of \$75,000. The rapid payback is based on a typical return on investment (ROI) of 40% compared to the floor space cost of new construction. Further, there are the rising annual costs for utilities—energy (\$2.50 per sf) and maintenance (\$1.00 per sf). So, in addition to the savings on new construction, there is a further ROI of \$17,500 annually on these overhead costs—resulting in the mobile system paying for itself in a relatively few years.

By applying this kind of analysis to all 56 regional libraries in the program, a reduction of 280,000 sf times the \$3.50 energy maintenance rate could result in a total savings of about \$980,000 *annually*—most important in view of the need to control costs and conserve energy while at the same time extending this valuable service.

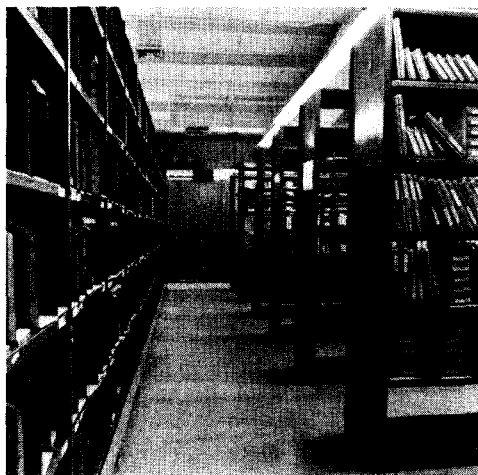
Where new construction might be planned in other regional libraries, the same 40% return on investment would apply—with some per square foot building costs considerably higher than in Daytona Beach. While the 200 sub-regional libraries for the blind (most within large public libraries) handle only limited quantities of the bulky audio and braille materials, it is apparent that mobile shelving could be effective in reducing costs even for these smaller units.

Massive Program

According to Donald John Weber, director of the Daytona Beach installation, each year over 1,200 new titles are released by the Library of Congress for recorded and brailled books—all in multiple. Over 14,000 residents are served yearly in the State of Florida, with about 2,000 new people added each year.

"When you consider that about 65,000 pieces a year are added to this installation," stated Webber, "it is mandatory that we have the space to accommodate them."

"It would have been disastrous without the availability of a high density mobile system. There just wasn't enough funds to



Old fixed-in-place shelving at right that requires many non-productive aisles of wasted space. On left is end section of new mobile system.

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double our building space to accommodate fixed-in-place shelving where 50% of the square footage would have to be in wasted aisle space. And even more important, we could not have provided the service so badly needed by Florida's blind and handicapped." Materials are supplied to the Dayton facility by The Library of Congress, with monies allocated by the State of Florida and some contribution by the Florida Lions Foundation in its program for the blind.

Photographs courtesy of Hill and Knowlton, Inc.

REVIEWS

The Professional Librarian's Reader in Library Automation and Technology. Professional Librarian Series. Introduction by Susan K. Martin. White Plains, N.Y., Knowledge Industry Publications, Inc., 1980. 201 p. \$24.50 hardcover; \$17.50 pbk. ISBN 0-914236-59-8; 0-914236-57-1 (pbk.)

This is a useful collection of chapters from a number of books in the "Professional Librarian Series" which have appeared since 1977. Of its thirteen chapters, ten are on various aspects of library automation, two discuss microforms, and the final chapter covers book theft security systems. A selected bibliography of 103 items rounds out the collection. There is, unfortunately, no index. This would have been useful because there is a wealth of data in the book, some of it hard to find in such condensed and convenient form. Although the book is brief, few superfluous words have been included. It is called a "Reader", but it could equally well have been termed "The Professional Librarian's Reference Book in Library Automation and Technology."

The five chapters on "Networking and On-line Services" include general and specific information on the current status of networking and its history. The only criticism one might make is that the term "BALLOTS" should have been replaced by "RLIN" since this change took place in 1979. An updating paragraph would have been appropriate. The bibliographic database chapters have been divided between "producers" and "distributors" and are very thorough. Only two omissions are worth mentioning here: one is the ERIC database and the other is some notice of the dramatic rise in the number of databases in the humanities since 1977. Again, both of these could have been included in an added paragraph or two. The chapter on what is involved in getting database services into libraries is excellent.

The eight chapters on "Technologies and Applications" include two on microcomputers: the first describes their features and the second discusses whether to use a computer for one or many operations in a library. The remaining chapters cover computer-supported catalogs of various kinds, as well as circulation systems and criteria for their use in computerized form.

Microforms are considered in their traditional role, as storage-space savers, and in their newer, more innovative role as replacements for card catalogs and some reference tools. The last chapter describes technology designed to solve the vanishing book situation which is commonplace in most libraries and highly aggravating to librarians as well as users. So far, no system has proved to be 100% successful.

This book is available in both hard and soft cover. It is probably of greater archival significance than the volumes from which the chapters were drawn. The rapid and constant advances occurring in all of the areas covered suggest that volumes like this, which gather in the most important features of a five-year period, might be of great value to the library which wants to "keep up" but does not need summaries and evaluations of all the latest technological information as it occurs.

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Preserving Library Materials: A Manual, by Susan G. Swartzburg. Metuchen, N.J., Scarecrow Press, 1980. 293 p. \$12.50. LC 80-11742; ISBN 0-8108-1302-5.

This concise introduction to the field of library preservation is intended as a manual for the general staff of a library that does not have a special preservation office. Its discussions of collection maintenance range from housekeeping to the installation of environmental controls. The chapters on the conservation needs of various media found in library collection (books, prints, photographs, and so on) are by design very basic, while the chapters on planning for disasters and preventive maintenance are quite substantive.

The significance of the book is that it is written by a librarian, as opposed to a specialist in the conservation field, and reflects the first-hand point of view of a librarian. Interspersed throughout the account are comments about the author's own experiences as a librarian at Yale and Rutgers.

The thesis of the book is to fix responsibility for preserving collections with the librarian. For this reason, librarians have a duty to educate themselves to administer preservation programs. Susan Swartzburg

suggests that library schools have lagged behind in making preservation courses a part of the training of library administrators. She warns that the librarian who is not concerned with collection management may be letting his or her credentials get out-of-date: "If the librarian cannot do it properly, we will soon find that a new group of professionals, the Conservation Administrators, have replaced us in the management of library collections."

Readers who find their appetites whetted for more information about preservation will be pleased to discover an extensive, well organized bibliography included in the book.

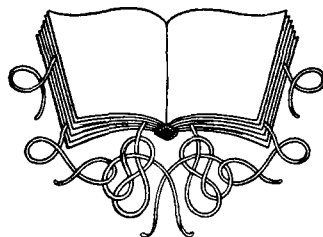
Ann Russell
New England Document
Conservation Center
Andover, Mass.

The Future of the Catalog: the Library's Choices, by S. Michael Malinconico and Paul J. Fasana. Professional Librarian Series. White Plains, N.Y., Knowledge Industry Publications, 1979. v, 134p. \$24.50 LC79-16619; ISBN 0-914236-32-6.

This book covers the basics of current topics involving the catalog. It is more descriptive of economic, social and political matters than intellectual, which is in keeping with present concerns. Controversial matters are described dispassionately, in fact, impartially to a commendable degree. The book is factual and, as such, is a suitable reference text on catalogs and cataloging.

The first five chapters are equivalent to a topographical survey. The reader who wants a quick review of the present is well served. The authors review the problems of the catalog and potential solutions being considered as of late 1978, even to the inclusion of a cost study of a hypothetical library. Topics related to efficiency and effectiveness are thus not forgotten. Yet, the reader who wants to know how things got this way, what problems were presented for solution, and what alternatives might have been available, will find only hints of older and subsurface discussion.

The sixth chapter, however, includes evidence of controversies surrounding the implementation of the decision by the Library of Congress to "close" (freeze, change the nature of) its catalog and then adopt the *Anglo-American Cataloguing Code*, second edition (AACR-2). The authors have



done a masterly job of presenting the problems and examining the proposals critically. This chapter alone is worth the price of the book. The decisions involved and what they entail are set down in black and white. The problems of the future do not appear to be any more amenable to solution than those of the past.

The final chapter is an epilogue to the effect that libraries are unlikely to be ready for the day the Library of Congress closes its catalog. It remains to be seen what will happen, since that day is almost upon us.

This book is recommended for all concerned with libraries. The value of this work lies in its clear message on the folly of planning without seriously considering all possible consequences.

Phyllis A. Richmond
Case Western Reserve University
Cleveland, Ohio

The Emergence of Maps in Libraries, by **Walter W. Ristow**. Hamden, Conn., Linnet Books, 1980. \$27.50. ISBN 0-208-0184-7.

This classic compilation of periodical articles by the *eminence grise* of the map library world is a valuable contribution to the literature of map librarianship. Dr. Ristow is far too modest in his introduction when he says that he "participated" in the "evolution and maturing of map librarianship"; he molded, formed, and pushed it along, and has certainly done more than make "some few contributions" to the literature. For many years Dr. Ristow has been the preeminent figure, and one of the best and most prolific writers in the field of map librarianship.

What a pleasure to see one's favorites, such as "The Emergence of Maps in Libraries," and "The Greening of Map Librarianship," all under one cover, and how enjoyable to discover articles that had

been forgotten, or worse, missed. As the author states in his introduction, these papers "summarize much in the history of the development" of map librarianship. The articles are divided into seven subject parts—history and development; acquisition and procurement; technical processes; reference; map library education; memorials for map librarians and cartobibliographers; and international map librarianship. It is interesting to observe the changes in the field, and incidentally, in Dr. Ristow's writing style.

Dr. Ristow's writings are must reading for all map librarians, for all universities with library schools, and for any library with an interest in map collections, map librarianship, and map acquisitions.

Mary Larsgaard
Arthur Lakes Library
Colorado School of Mines
Golden, Colo.

What Else You Can Do with a Library Degree, edited by Betty-Carol Sellen. Syracuse, N.Y., Gaylord Professional Publications in association with Neal-Schuman Publishers, Inc., 1980. \$14.95. LC79-14852. ISBN 0-915794-40-3; ISBN 0-915794-46-2(pbk).

Betty-Carol Sellen has put together a collection of 52 contributed papers describing personal experiences in non-traditional library careers. The emphasis is on professionals who perform functions that they may not have anticipated and were not formally trained for, in areas such as marketing, sales, publishing, indexing, administration, government, consulting, and many others, both in industry and on a free-lance basis. A wide variety of opportunities are identified for people who are entering the library profession, or for those who are already working in librarianship or related areas.

The book is divided into four parts: a preface, a survey, the individual contributions by graduate librarians working in non-traditional jobs outside of the library, and an appendix. It begins with a survey by Betty-Carol Sellen of graduate librarians working outside of the library. The questionnaire and compilation of the responses are included. The author reviews the questionnaire, identifies and expands upon non-traditional opportunities for today's librarian, and questions the narrowness of the

traditional librarian's role. The individual experiences are described in four chapters. The first presents the experiences of those who have gone into independent, self-employed activities. Part two describes positions in information management, indexing, and research. Part three deals with various jobs in the book industry such as sales, editing, reviews, publishing, and criticism. Part four lists positions in communications, administration, arts, education, and government services.

The appendix has two sections. The first is a reprint of an article by Susan Klement proposing a graduate course in "Alternative Careers in Librarianship." The thirteen-week course would expose the library student to a varied selection of non-traditional areas: the special library, records management, information as a commodity, information brokerage, fees for service, running a business, and self-marketing. The second part of the appendix, by Sterling Albert and Gretchen Redfield, consists of a survey of graduate librarians working in traditional library jobs. The authors make an analysis of mobility and the lack of advancement by professionals.

The book is arranged logically. The personal experiences related give the reader insight into the characteristics and skills that have led individuals from traditional library programs into their present careers. They illustrate many of the alternatives available and show some of the qualities needed to enter the alternative job market. However, many of the personnel experiences lack an evaluation of cause and effect which could help readers to identify the skills and characteristics in their own career paths which would aid them in transferring to new fields. Also, there are no experiences from the emerging areas of database management and online searching.

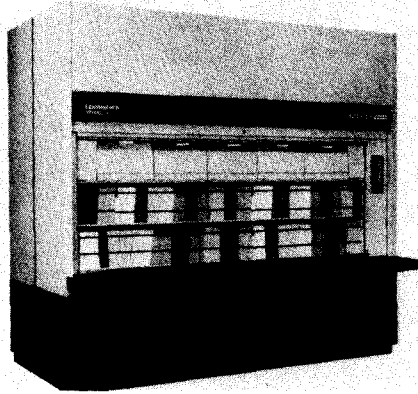
What Else You Can Do with a Library Degree is very timely in light of today's job market. It identifies a wide variety of options for people who want to familiarize themselves with the growing number of frameworks in which library degrees are being used. The book is recommended reading for students who are deciding whether to enter library school, graduates ready to enter the job market, and professional librarians considering alternative careers.

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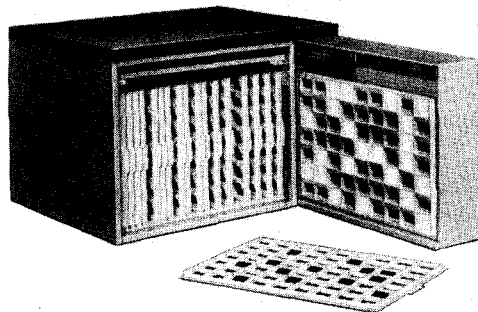


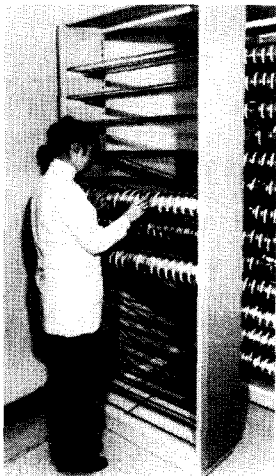
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PUBS

(80-052) **Online Information Retrieval 1976-1979: An International Bibliography.** J.L. Hall and A. Dewe. Aslib Bibliography 10. London, Aslib, 1980. 230 p. ISBN 0-85142-127-X.

References the current literature on online retrieval. Approximately 900 items including survey results, research reports, proceedings, and journal articles are listed alphabetically by author. Contains author and report number, and general indexes plus supplementary references.

(80-053) **Handbook for AACR2: Explaining and Illustrating Anglo-American Cataloging Rules.** 2nd ed. Maxwell, Margaret F. Chicago, Ill., American Library Association, 1980. 476 p. \$20.00 pbk. LC 80-17667; ISBN 0-8389-0301-0

Explains the AACR 2 cataloging rules by comparing and distinguishing them from the rules for AACR1. Samples of title pages are included to show how the new rules are applied.

(80-054) **Choosing an Automated Library System: A Planning Guide.** Matthews, Joseph R. Chicago, Illinois, American Library Association, 1980. 128p. \$11.00 cloth bound. LC 80-17882; ISBN 0-8389-0310-X.

Describes a plan and a procedure for selecting, contracting, installing, and implementing an appropriate automated system for small and medium-sized libraries. Includes a glossary of computer-related terms and an annotated bibliography.

(80-055) **The Emergence of Maps in Libraries.** Ristow, Walter W. Linnet Books (U.S.A.)/Mansell Publishing (U.K.), 1980. \$27.50. LC 80-12924; ISBN 0-208-01841-7.

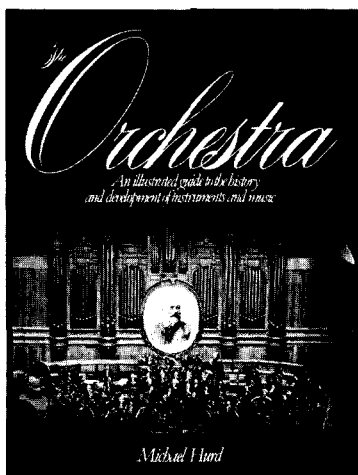
Traces the history and development of map librarianship and the acceptance of maps as valuable reference materials. Describes acquisitions procedures, technical processes, bibliographic services, and map library education. Also included are sections on international map librarianship and memorials to the work of distinguished librarians and cartobiographers.

(80-056) **Viewdata and Videotext, 1980-81: A Worldwide Report.** Transcript of Viewdata '80, first world conference on viewdata, videotex, and teletext, London, March 26-28, 1980. White Plains, N.Y., Knowledge Industry Publications, Inc., 1980. 633 p., illus. \$75.00/soft bound. LC 80-18234; ISBN 0-914236-77-6.

Authorities on videotext developments in Canada, France, the U.K., U.S., Japan, Germany, and other countries discuss the techniques and services that are available; their applications for business, education and training; markets; electronic mailing; and publishing.

(80-057) **What an Institution Can Do to Survey Its Conservation Needs.** Cunha, George. New York, New York Library Association, Resources and Technical Services Section, 1979. 25p., loose-leaf. ISBN 0-931658-02-0.

Based on a paper presented at a conservation seminar sponsored by the New York Library Association in 1977, this publication includes a bibliography and list of sources of supplies and information on library conservation. Available for \$2.50 from the New York Library Association, 60 E. 42nd St., Suite 1242, New York, N.Y. 10017 (212/687-6625).



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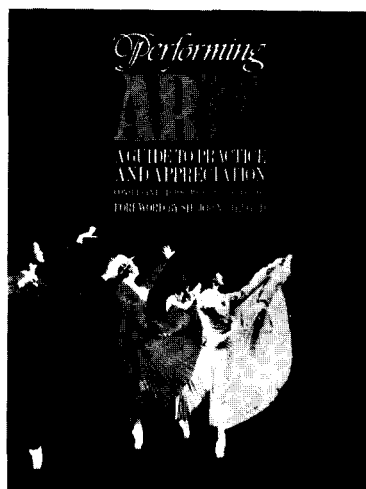
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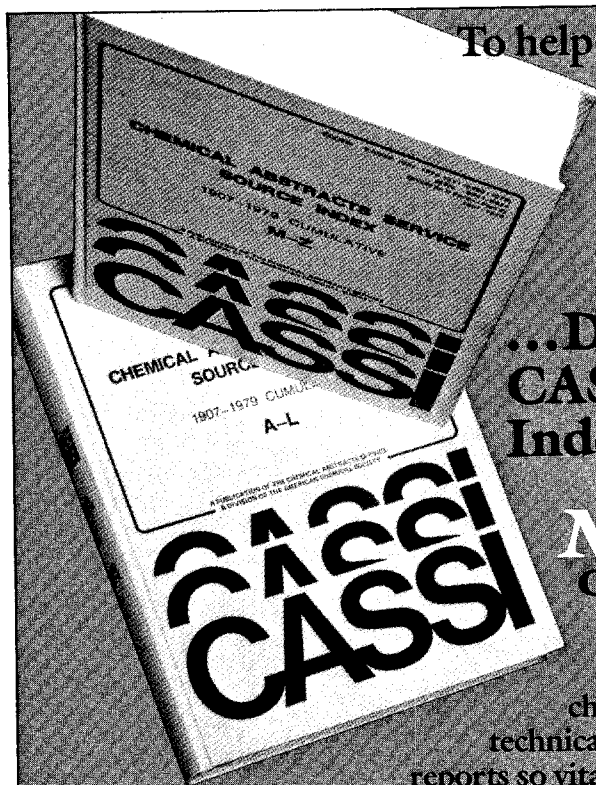
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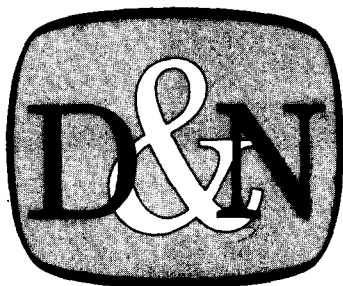
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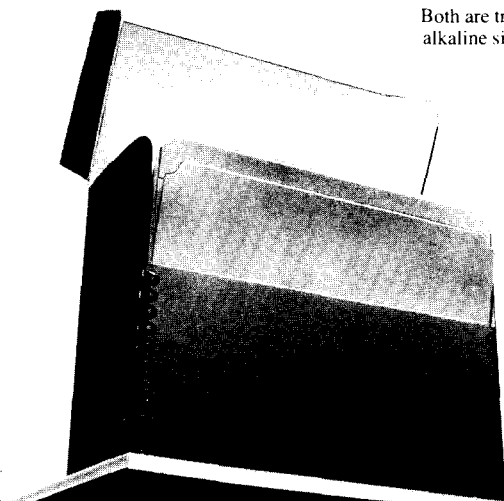
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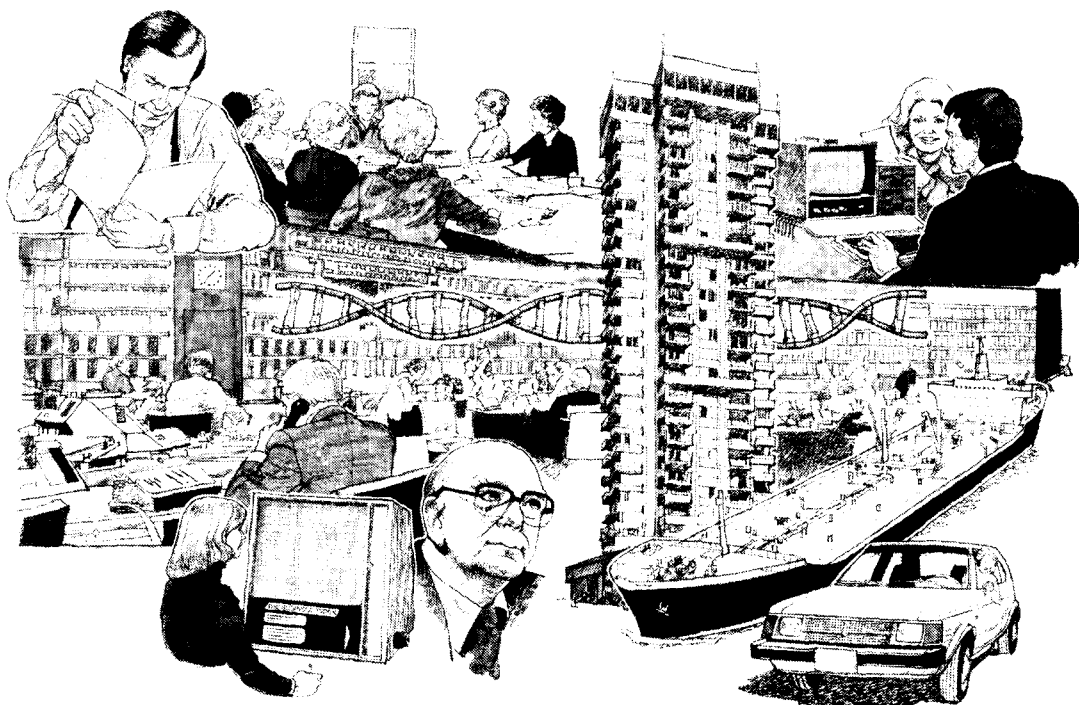
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James K. Webster, Editor

paper/32 pages/1980
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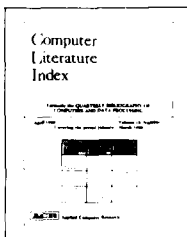
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Joyce R. Russell, Editor

1980/soft cover/8½" x 11"/104 p.
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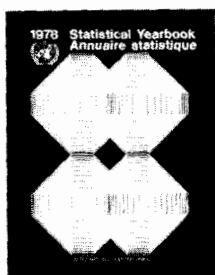
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