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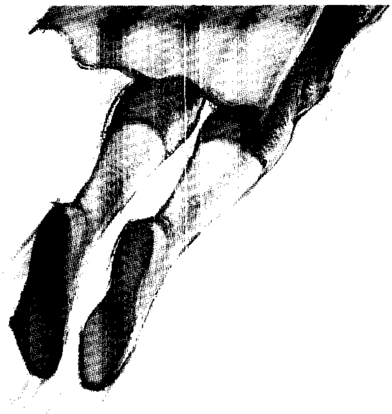

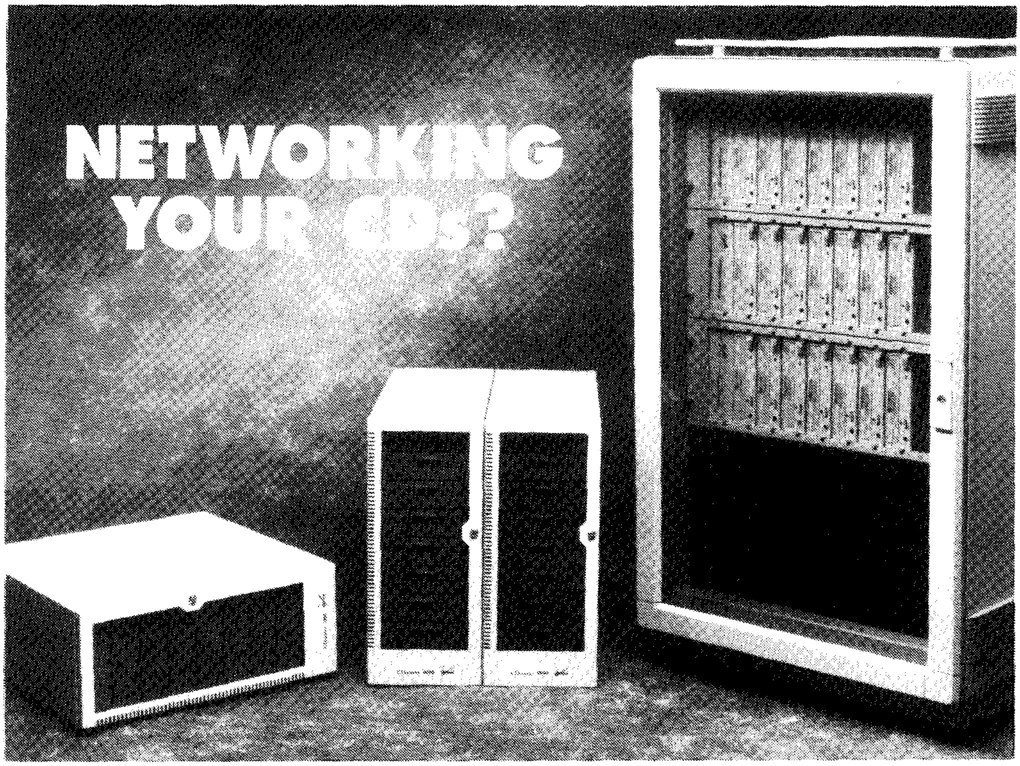
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Randy M. Bauer

is President of Leadership Training Associates, a management development firm. Mr. Bauer's seminars on leadership, motivation, communication and effective supervision have been attended by over 110,000 people across the U.S. and Canada.

After receiving his MBA from Kent State University, Mr. Bauer spent over ten years as a trainer, educational coordinator and organizational development consultant. He was recently honored to be included in the current edition of *"Who's Who in the World."*

Marianne Hartzell

is Executive Director of the Michigan Library Association. As chief administrative officer of a 2,000 member professional association, Ms. Hartzell has extensive management experience. Her major responsibilities include strategic and long-range planning, budget administration and program development. She has served as President of the International Council of Library Association Executives and is currently on the Library of Michigan Board of Trustees and the Advisory Board of the Michigan Occupational Information System.

Michael E.D. Koenig, Ph.D.

is Dean of the Rosary College, Graduate School of Library and Information Science. With over 25 years experience as an information systems executive and educator, he has held a variety of positions in both corporate and academic arenas.

Prior to his current position, Dr. Koenig served as Vice President, Data Management for Tradenet, Inc. where he investigated the feasibility of a worldwide network for the sale, purchase, trade, and countertrade of manufactured goods and services. During the 1970s he held senior management positions with the Institute for Scientific Information, Swets North America and Pfizer, Inc.

Dr. Koenig earned both an MLS and MBA from the University of Chicago, and received his Ph.D. in information science from Drexel University in 1981.

Arlene Farber Sirkin

is President of the Washington Resource Consulting Group, Inc., a marketing/management consulting firm that helps clients maximize their resources through seminars, research and consulting. Her career spans over twenty years in the non-profit, government and business sectors, specializing in strategic and marketing planning, market research and customer satisfaction.

Ms. Sirkin holds an MBA in marketing from the Wharton School and received her MLS from Columbia University. She is a frequent keynote speaker or seminar leader at association, university, and continuing education conferences throughout the U. S., Canada, and Europe.

José-Marie Griffiths, Ph.D.

is Professor and Director of the Graduate School of Library and Information Science at the University of Tennessee. Dr. Griffiths is also UT/Martin Marietta Energy Systems, Inc. Collaborating Scientist in Information Science.

Dr. Griffiths has a degree in physics and a Ph.D. in information science from the University of London. Dr. Griffiths has performed research and consulting into applications of technologies to libraries and information services for the past 20 years. She has developed automation and new technology projects at the national, statewide, regional, and local levels, and has also consulted with vendors of information systems and services.

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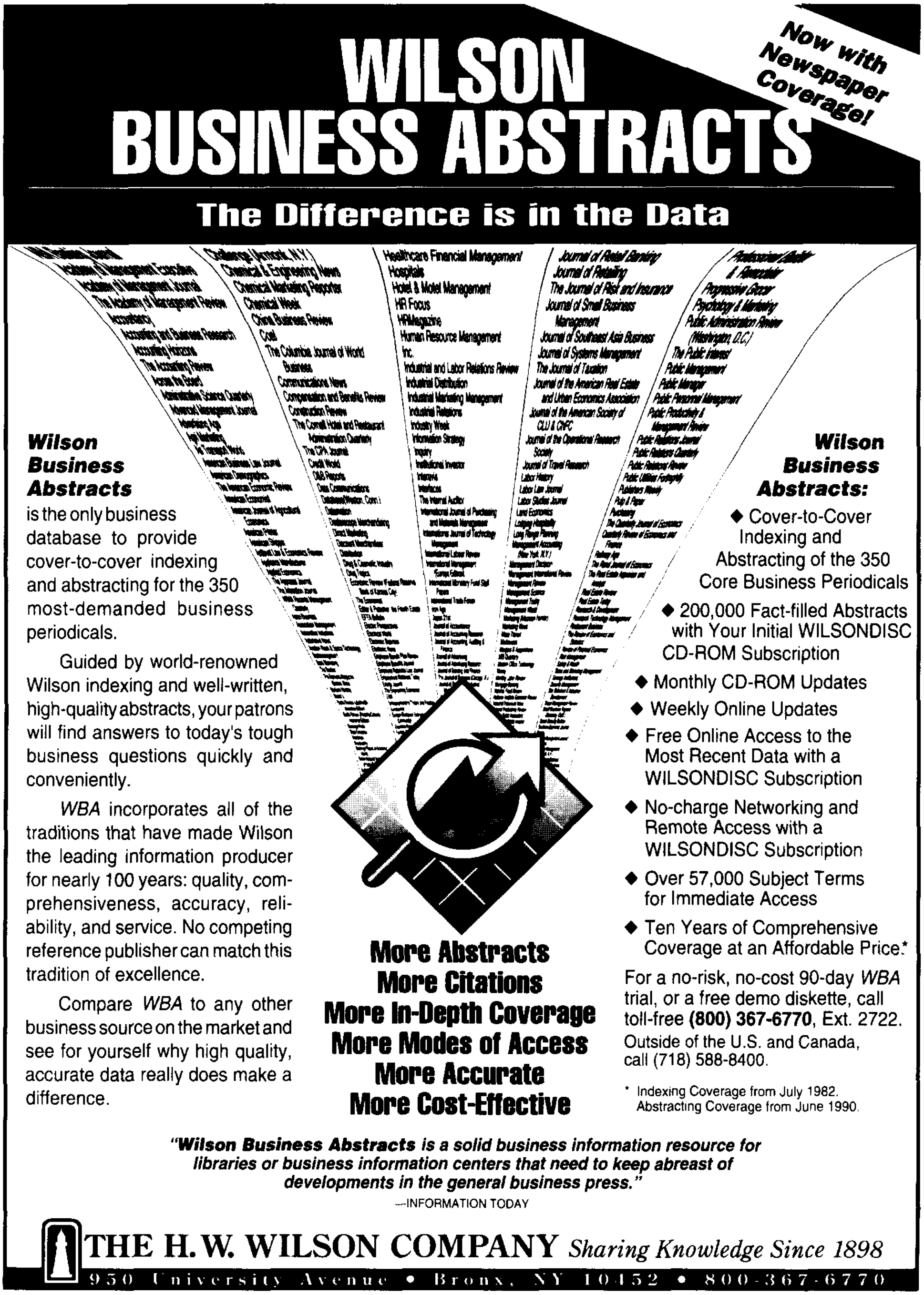
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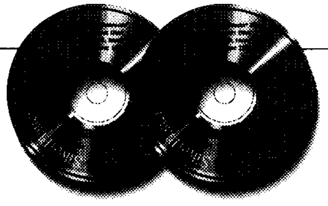

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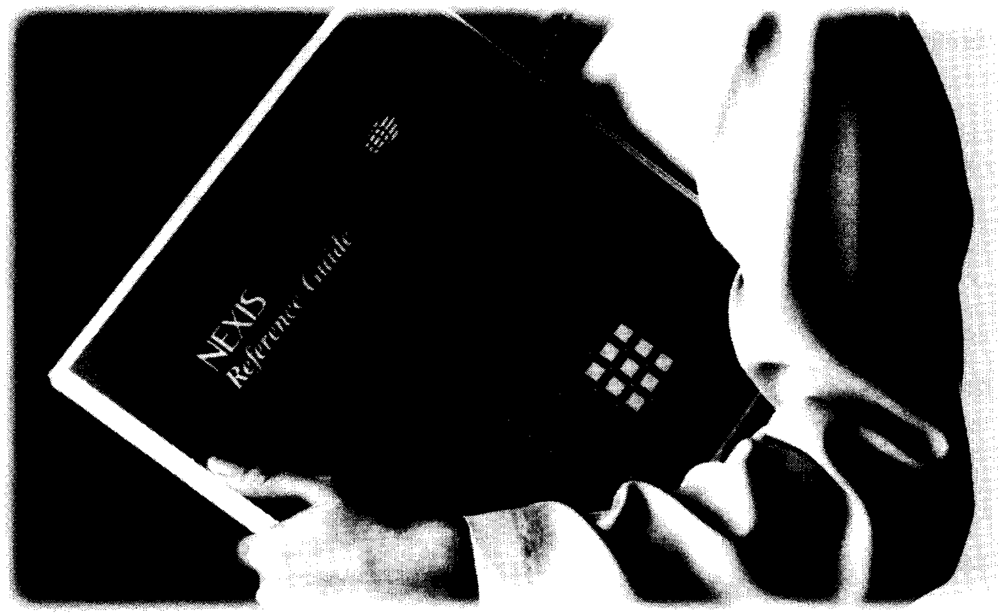

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Effective Team Building and Personality Types

by Vivienne Monty

■ Special libraries are often managed by a small staff complement. These staff, by necessity, must function as a cohesive team. Effective and functional teams, in turn, must be developed and fostered. Application of personality profiles/tests are frequently used in businesses for team building. Profiles such as the Myers-Briggs Type Inventory or Action Profiling specifically enable library managers to create and encourage a more effective team environment.

Introduction

Contemporary library managers must create and sustain an environment which fosters organizational development. They must also foster an environment which enhances individual and group effectiveness. This is particularly critical in a special library setting where staff complements are often small and the achievement of a smooth team environment is vital for organizational effectiveness. To achieve some of this, staff are often sent at great expense to various workshops and seminars.

All too often, however, seminars and workshops only regurgitate what is already known. More frustratingly, people leave sessions with enthusiasm and promise themselves that they will go straight back to work and start applying the useful ideas they have learned. Unfortunately, everyday pressures and emergencies shortly put an end to their efforts, and participants promise themselves to try out these methods sometime, but not at the present.

Why do most workshops and seminars fail to achieve their aims, especially when, on the whole, they are fairly good sessions? The reasons are quite simple. The techniques which are taught seek to change the way in which people operate. They attempt to overturn natural management styles. They also work with individuals and not with the teams with whom these individuals work. The resulting tools that are provided run contrary to the "real" self and often the team as a whole. How can anyone become committed to such changes? Not surprisingly, library administrators and educators are beginning to ask why training does not work.[1]

A.J. Anderson posed the question, "Do people change their management styles and practices as a result of taking courses and attending workshops?" He considered the work of physiologists (Kretschmer and Sheldon), psychologists (Freud and Jung) and a philosopher (Spranger), all of whom categorized human beings into personality types in one way or another. The 'characterologists' examined by Anderson all concluded that modifications must lie within the boundaries of one's original type or nature.[2] This is a conclusion which rests uneasily with many North American educational and psychological values.

There are a few forms of personal analyses and team building methods that have proved themselves in numerous organizations throughout the world. None of the proven methods seeks to change people, but all work with existing character types. These analyses can be used for two major purposes: to help individuals to make the most of what they have naturally, and to be employed for team effectiveness.

Personality profiles or psychological inventories can make an important contribution to this dual objective. The increased self-awareness which is the result of well-administered inventories or profiles enables individuals to build on strengths and anticipate where difficulties may arise. When members of a work group participate in the exercise, the shared knowledge contributes to team-building.[3]

Psychological inventories and profiles are not tests. A trait is not right or wrong, and an inventory is not a judgment. Nor is a profile a sentence which confines a person to a particular set of responses. Rather, knowledge of personal traits will enable participants to build on strengths and compensate for weaknesses. One can manage a weakness, not by changing one's self, but by using other people's strengths as props, intellectual controls, or systems. An inventory can give confidence in strong areas; it may confirm a dim awareness of a strength which hasn't been used fully. In these systems, which are mostly based on Jungian principles, "there is no 'good' or 'bad', no 'right' or 'wrong,' only differences to be identified, valued, and even appreciated."[4] Organizational development and training programs which help participants develop an accurate self-awareness are more likely to have a continuing effect than those which ignore the reality of adult personalities.

Background to and Application of Tests

Personality tests, in the business sector where most special libraries are found, exist in greater and greater numbers. Companies have become aware that mere warm bodies filling positions is not enough. Rather, they must hire the "right" person, and employees must perform in order to maintain productivity and the competitive edge. Thus, tests are being used increasingly for hiring staff and in team-building amongst current staff.[5] A few libraries have followed this lead to date. In a recent article, Linda Rome enumerated how some libraries have successfully applied the Myers-Briggs Type Inventory to create a better team environment. Such experiments are rare, however, despite their success in the few libraries that have applied them.[6]

Before any tests are considered or applied, the function and use of each type must be carefully considered. Experts warn that job performance is a multiplicative function of ability and motivation. Personality variables are valid only when used in conjunction with ability tests.[7] This is particularly important to librarianship in that it is a female-dominated profession. Generally, female managers exhibit important differences in their working styles compared to most male managers.[8]

There are definite pros and cons to personality tests, and they should be used in addition to other factors and not merely as a means to an end. Some of the common problems with personality tests that many businesses have identified are:

- Personality is difficult to measure and define;
- Performance on the job is more than a personality. Motivation is a critical factor,[9] as are the workplace environment, job descriptions, etc.;
- There are many ways to do the same job. Assigning a person to a job by personality type would, in some ways, preclude how the job is carried out; and
- Using tests assumes that neither the job nor the personalities change, when both actually change constantly. Professional jobs require numerous and varied skills at different times.[10]

Another key problem with the application of various personality tests is that managers and staff often do not understand the results obtained, nor do they understand the differences between the mapping of scores in terms of those tests which are normative and those which are ipsative. Little is known or understood about what to do with the results and how to use the results appropriately. For example, the Myers-Briggs Type Inventory (MBTI) is a normative type test while the Gordon Personality Profile (GPP) is ipsative.

Normative test scales are independent and can usually be treated as "measures of different qualities, on ipsative test scales they are not."[11] On ipsative scales one cannot compare individuals. Normative scales measure like qualities amongst people and thus can be used for comparative purposes. On ipsative scales, respondents can measure only their individual scores over time and these scores are not comparable to others. Ipsative scales are based on self-appraisal type inventories employing forced-choice or a ranked scale format. Thus, team building in this type of scale is much harder. Ipsative scales force individuals to answer to choices which could be incorrect or which do not reveal various characteristics some claim.

On the positive side, many companies find that applying tests such as MBTI promotes mutual understanding if they are not used as weapons.[12] If they are used as weapons, conflicts arise in lieu of the desired results. Tests, when well-used, make staff aware of each others' styles so they can work better together. They also improve communications and productivity. Indeed, these tests must be doing something right. In 1986, 1.5 million people took the MBTI in the United States. Of these test administrations, 40% were business related. Corporations such as Apple, AT&T, Citicorp, Exxon, GE, Honeywell and 3M have all used personality profile tests for management development.

It is often argued that people of different personality types have difficulty working together. Through personality testing and the sharing of results, people become aware of their own personality traits and other types amongst their co-workers. As a consequence, their communications and productivity usually improve. Knight Ridder's *Charlotte Observer* used MBTI as a basis for team-building in a fractious newsroom with positive results.[13] As Rome says, "Comfort comes from being with people similar to us; growth comes from the differences of an alternative approach. Different styles can be uncomfortable, but often are essential to good management."[14]

Transamerica Corporation offers a one-week course on MBTI at considerable cost, but has found the investment invaluable. "We've used the theory to help us change our corporate culture; it has turned out to be one of the most meaningful things we've done," one company executive said.[15] The company has used MBTI to avoid placing people in positions of potential conflict with each other. Personality tests make "people aware of which types they are and their co-workers are, and voila, communication improves and with it productivity."[16] Group feedback is vital and managers gain a composite of a team or work group to help in their decision making.[17]

In libraries we are constantly changing our organizations[18] to respond to technology and other advances. Personality trait assessments are powerful tools for such organizational change. Finally, by pointing out how people respond to change, the MBTI can help suggest strategies for managing transitions in libraries.[19] Personality trait assessments provide managers with 'additional' information once the manager decides what skills he or she is looking for.[20] Many claim that hiring failures have been reduced and promotions have been more successful as a result of using the tests.[21] In other companies, high performance was directly related to the use of tests for decision making.[22] One critical factor to remember in all this is that team-building sessions will be of little value if the library or organization does not create an environment which is conducive to teamwork.[23] Most experts recommend incentives based on the performance of the team as a whole to encourage people to work together.

Increasingly, effective team building is becoming a critical management tool as was recently outlined in an article on "Management's new gurus." In each type of new approach, the management of well-organized teams is stressed. They must be effective and it is vital that people work together harmoniously. Time and effort must be devoted to fostering and developing vigorous teams. Too often present teams are dysfunctional and libraries are not immune to this dysfunction.[24]

Commonly Used Tests

The personality profiles and inventories commonly used in libraries and other organizational development programs are often self-reporting instruments such as FIRO-B, Thomas Kilman, the Myers-Briggs Type Inventory (MBTI), and Action Profiling. Some of these instruments are also used for personal counseling in other settings. In the library environment, the instruments are generally used in a group setting under the direction of a consultant or facilitator who guides an open discussion to explore the results.[25] The MBTI, rooted in the Jungian type theory,[26] is probably the most common of these basic preferences for collecting information and making decisions. Myers-Briggs assessments derive from self-reports of common behavior or reactions. This instrument can be self-administered and self-scored. It can be both quick and inexpensive to carry out, and can be conducted independently, although having a good facilitator is always advised.

Action Profiles, on the other hand, are derived from natural movements displayed during an informal two hour discussion. The assessment is conducted by a certified movement analyst using a videotape. The same analyst prepares a verbal and graphic profile for discussion with the individual in a personal interview. Action Profiling is based on a consultative process, and thus is time-intensive and expensive. Both methods assess cognitive styles rather than personality. Action Profiling is more concerned with interpersonal traits and reveals more about the motivations which result in different perceptual and judgmental processes.

Action Profiling

Action Profiling "provides a logical systematic rationale for a whole host of behavioral and personality phenomena which otherwise complicates and obscures the communication and the action."[27] The information derived aids in making the best use of individuals' capacities. A multifaceted system based upon complex analysis, action profiling helps clarify how people, individually and collectively, undertake action. This knowledge helps explain why people with different decision-making styles may experience conflict even though they recognize common objectives. Disagreement often results from the way a decision is made and carried out rather than from the decision itself.

Action Profiling assumes a three part framework for decision-making and problem-solving: considering what is to be done; deciding on a course of action; and implementing that action.[28] In Action Profiling nomenclature, these three stages are:

• Attending, the analytical components including investigating and exploring;

• Intending, the planning phase including determining and evaluating; and

• Committing, which includes timing and anticipation. [See table in appendix].

These stages are analyzed in terms of three overall factors: dynamism (the number of non-routine cycles of decision-making a person initiates simultaneously); adaptability (the willingness to alter basic attitudes to fit in with a situation); and identifying (the readiness to respond and associate with the organizational environment). At each stage in the decision-making process, individuals are either private or communicative about the process they use.

What makes this management analysis tool so very different and usable is, above all, the context in which personal style is placed. No two people are identical. The percentage breakdown in each attending, intending, and committing stage varies. Within these stages, each person is either stronger or weaker at investigating, exploring, and so on. Also, at each stage, people are more private or communicative about the process of their thinking. Understanding the interplay of these complex style variations increases mutual understanding. For example, one person knowing that he or she is a high "intender" with a particular strength in "determining" is a formidable opponent to anyone who has qualities which allow himself or herself to shift goals easily. A person with a highly flexible style cannot win unless he or she is willing to let blood. Knowing this can help avoid frustrating and non-productive situations.

Also, a high "attender" who needs to study and think for longer periods can totally frustrate a high "committer" whose very nature is action.

Knowing this, the former can be allowed to develop plans and alternatives while the latter is asked to carry them out.

While action profiling is not inexpensive, it has been used most effectively in both Canada and the United States to create well-functioning teams from dysfunctional groups. It has also been used to help individuals understand what areas they function in best and how to avoid potentially disruptive situations.

Myers/Briggs Type Inventory

The MBTI is a much simpler analysis tool than Action Profiling. It is primarily concerned with the cognitive process rather than with the interpersonal traits [29] or value function found in Action Profiling. It is rooted in Jungian theory. It is a personality inventory designed to identify basic preferences for information collection, making decisions and relating both to the outer world of people and things and to the inner world of ideas and concepts. Barbara Webb's article, "Typecasting: Life with Myers-Briggs," includes an extensive discussion on the 16 different personality types, how they work, and how different types interrelate.[30] In Myers-Briggs, sensing types think in terms of specifics and detail, while intuitives think in terms of context. Thinkers decide things logically and objectively, while feelers make decisions on subjective grounds. Extroverts are oriented to the outer world of people and things while introverts are oriented toward the inner world of ideas and feelings. Perceiving types tend to be flexible and postpone closure, whereas judging types want to get things settled.[31] "Put more simply, the most successful business compromises and decisions capitalize on the strengths of all types: the practicality of the Sensors, the systematic attention of the Thinkers, the human considerations of the Feelers, and the flexibility for growth and improvement provided by the Intuitives."[32] [See table in appendix.]

MBTI is far less detailed in analysis but much cheaper to administer. Individuals usually work on traits in groups together and without a facilitator. To the extent that MBTI and Action Profiling could be measured in comparison, MBTI usually validated the results of the Action Profile method.

Conclusion

Effective people are those who know themselves as well as the demands of the organization or situation. They also adapt their strategies to meet those needs. MBTI and Action Profiling both offer a potential role in developing the self-awareness that is an important prerequisite for professional development. And both offer a viable and useful team-building method for the libraries of the future.

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Appendix—Comparison of Typologies

In both systems, the terminology needs to be understood in context. This chart displays some of the similarities and differences in the two typologies.

[MYERS-BRIGGS]		[ACTION PROFILE]	
ORIENTATION		INTERACTION	
Extrovert	Introvert	Sharing	Private
INFORMATION GATHERING		ATTENDING/ANALYZING	
Sensing	Intuition	Investigating	Exploring
DECIDING		INTENDING/PLANNING	
Thinking	Feeling	Determining	Evaluating
JUDGING		COMMITTING/ACTING	
Judging	Perceiving	Timing	Anticipation

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AT&T Bell Laboratories Creates a Quality Team to Study Technical Reports

by Laurie McFadden

■ The AT&T Library Network maintains a Technical Reports Service within its Document Supply Service to provide university, corporate and government technical reports to the AT&T community. The Service received 16,229 unique document requests in 1989 and 10,452 unique document requests in 1991. In January of 1991, a Quality or Process Management Team was established to make improvements to the service and to understand reasons for the significant decrease in demand for the service.

Introduction

Quality improvement initiatives have been a major thrust throughout all of AT&T. The study of the alerting and dissemination of technical reports was one of the first quality initiatives undertaken by the AT&T Library Network. The Technical Reports Service was selected to be studied for quality improvement opportunities due to the following factors:

- Declining demand for the service;
- Mounting pressure to reduce the costs of library services;
- Mounting pressure to increase the speed of technical reports document delivery;
- Staffing changes (The system was becoming too complex for adequate training);
- Spacing constraints (The service was running out of room to store every announced item);
- There were a number of problems in accessing the database on LINUS, such as:
  - Inconsistent indexing. For example, a Carnegie Mellon Report could be under the subject heading "Carnegie" or "CMU."
  - Inconsistent Cataloging. Some reports were not cataloged as technical reports but were added to a separate books database.
  - Typing errors and inadequate records.
  - Lack of maintenance of the database. Older records were never purged from the database.

Clearly, the service was in need of streamlining, cost reduction, and improvement. At one of the first meetings, the team listed all of its issues and concerns regarding the service. When we easily came up with 39 issues and concerns, we felt overwhelmed by the task at hand. Many times we floundered, were unclear of our direction, and simply felt the service could not be "fixed." I believe three factors led to the success of the team: the strong sense of commitment and teamwork from each member; the unique contribution from each member because the team members were from several library departments; and the continual support provided by a quality expert who was available to the team as a consultant. The consultant was an in-house quality expert who was always able to pick the team up and put us back on track when we became frustrated and unclear as to the next steps in the process. After just a year, each member of the team began to feel really good about the quality process as we realized that we could boast the following accomplishments:

- Eliminated one full-time position;
- Began ordering "on-demand" to better meet business conditions;
- Eliminated the cost of microfiche copiers;
- Expanded access to technical reports by providing access to the entire NTIS database;
- Expanded access to corporate and university technical reports with enhanced searching capabilities;
- Enhanced ability to track circulation and usage;
- Enhanced the announcing of technical reports in alerting publications and cataloging of technical reports;
- Established electronic service with our vendors for ordering and status reports;
- Negotiated high-volume discounts with vendors.

Background

Before I outline the quality process, I will provide a brief background of the Technical Reports Service prior to the implementation of improvements as a result of the quality process. Each month, Defense Technical Information Center (DTIC) and National Technical Information Service (NTIS) sent a tape of selected new government reports based upon an automatic subject profile that each vendor set up with AT&T Bell Laboratories. The information from these tapes was republished in internally-produced alerting publications and the corresponding microfiche copies were sent to the technical reports service for document delivery and storage. In addition, the information from the tape was entered into a database of technical reports that was made available to library customers via an electronic library system called LINUS.

Access to university and corporate technical reports was much less systematic. The bulk of the announced university technical reports came from a special subscription from Semiconductor Research Corporation (SRC). Other universities and corporations sent new technical reports directly to the technical reports service where they were reviewed for inclusion into an alerting publication and LINUS.

In addition, government, university, and corporate technical reports were ordered "on demand," as requested by library customers. The Technical Reports Service staff would locate, order, and either copy or loan a requested document. These reports were also added to the technical reports database and made available for end-user searching and ordering.

The Quality Process at AT&T Bell Laboratories

Quality is a major strategic thrust throughout all areas of AT&T. It is a long, systematic process of work redesign, analysis, and eventual improvement. The foundation of AT&T's Quality Policy is the belief that:

> Rules alone do not guarantee success, but the absence of established and defined principles or the lack of commitment to them almost certainly guarantees failure. AT&T's Quality Policy defines one overriding principle in support of a corporate quality environment, challenging us to 'consistently provide products and services that meet the quality expectations of our customers.' Managers and employees are encouraged to meet this challenge by focusing work efforts on improving customer satisfaction and operating processes more efficiently.
>
> This challenge applies at every functional level of business—everyone has customers and suppliers. Effective process quality management demands that customer requirements guide day-to-day work activities. [1]

The Quality Process at AT&T is driven by the belief that the quality process is a continuously repeating cycle. Several methodologies were created to provide a structured approach to managing and improving quality steps. The Technical Reports Service team used the seven-step Process Quality Management & Improvement (PQMI) methodology as a guideline for action. The seven steps of the PQMI Process are: (1) Establish Process Management Responsibilities; (2) Define Process and Identify Customer Requirements; (3) Define and Establish Measures; (4) Assess Conformance to Customer Requirements; (5) Investigate Process to Identify Improvement Opportunities; (6) Rank Improvement Opportunities and Set Objectives; and (7) Improve Process Quality. As I outline the technical reports quality efforts throughout this paper, I will show how the PQMI process functioned as a road map to guide the team to success.

The Technical Reports Service Quality Team

Step One: Establish Process Management Responsibilities

Team members were selected from various library departments and included representatives from Document Supply, Cataloging, Alerting, Internal Documents, and Copyright. The team first met on January 17, 1991 to establish ground rules, establish the members of the team and the role of the team leader, and identify the Process Owner. The Process Owner has the authority to make changes in the process. The team defined its statement of purpose as "Acquiring, alerting, maintaining and disseminating technical reports to the AT&T Library Network customer."

Step Two: Define Process and Identify Customer Requirements

The team designed a customer supplier model to identify the suppliers to the technical reports process, customer/supplier relationships, and the boundaries of the process.

The PQMI Guidelines book describes the customer/supplier model as "the foundation of the process quality management and improvement methodology, providing a framework for establishing and maintaining effective relations with customers and suppliers. The model begins with customer requirements and stresses active measures of customer satisfaction to provide ongoing feedback for process improvement."[2] [See Figure 1, p.11]

As you can see by the model, the technical reports process was complex. The team knew from the model that it needed to reduce the complexity of the service by reducing the number of suppliers and/or achieving better customer/supplier relationships.

A block diagram was created in order to further understand the process. According to the PQMI Guidelines, "The block diagram provides a macro-level view of the process as it currently operates. The diagram traces the various paths that materials and information can take between input from suppliers and final outputs. The diagram includes individual boxes or blocks representing activities performed by individual organizations/groups and connecting lines representing the hand-off points or interfaces between activities."[3] [See Figure 2, p.13]

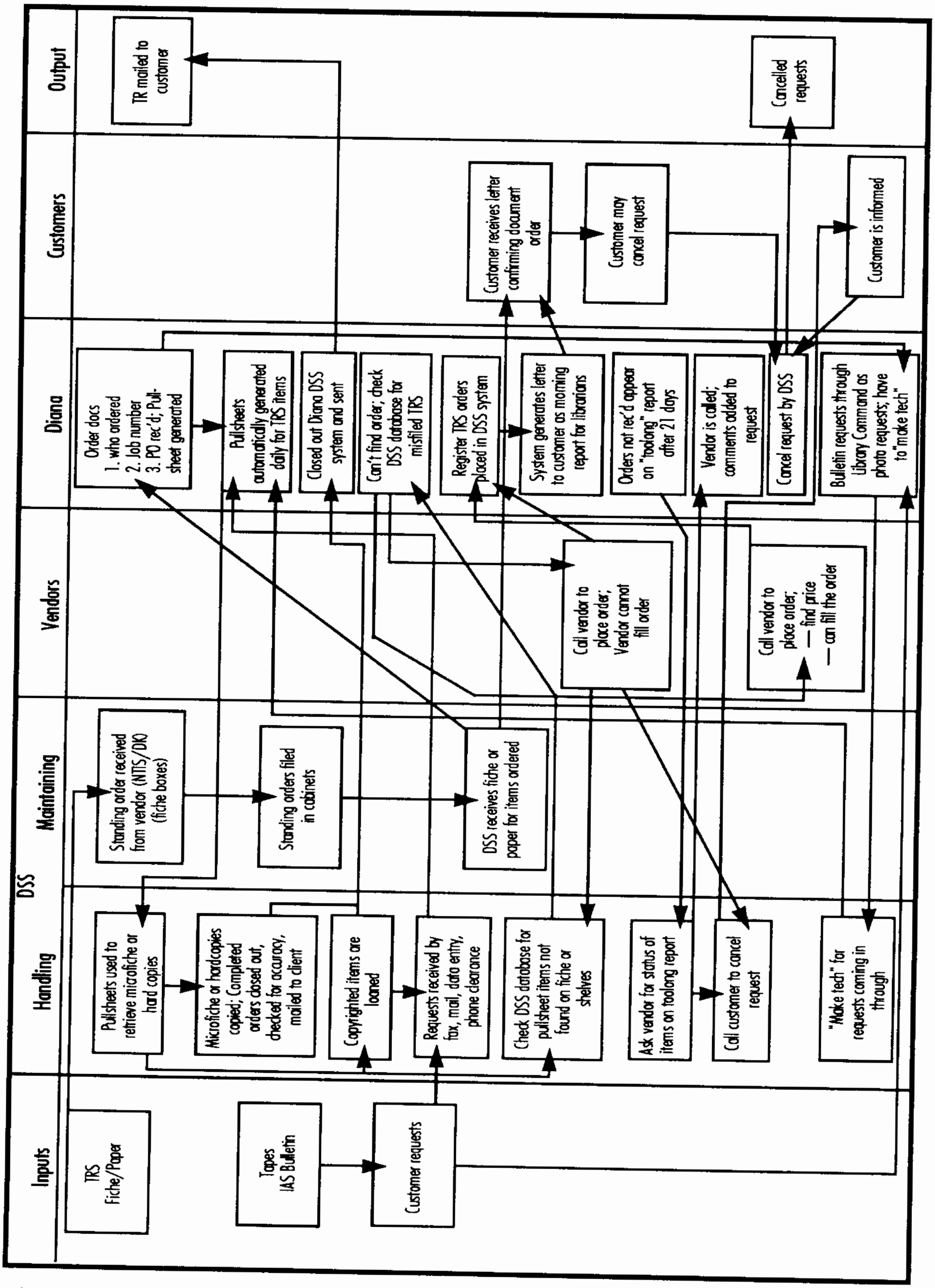
The block diagram showed that the technical reports process took too many paths, had too many hand-off points, and needed to be streamlined.

Identify Customer Requirements

Customer requirements drive the quality process. Customer requirements were collected in four ways: (1) three focus groups were conducted in three different AT&T Bell Laboratories locations; (2) a phone survey was conducted of customers who used the service 10 or more times in 1990 and stopped using the service in 1991 to determine their reason for discontinuing use of the service; (3) a survey was inserted in all alerting publications to determine technical reports alerting needs; and (4) a survey was distributed to all technical reports customers over the last two years.

Customers of the Technical Reports Service required the following:

- To be alerted to all technical reports published;



Inputs
Handling
DSS
Maintaining
Vendors
Diana
Customers
Output
TRS Fiche/Paper
Tapes IAS Bulletin
Customer requests
Pullsheets used to retrieve microfiche or hard copies
Microfiche or hardcopies copied; Completed orders closed out, checked for accuracy, mailed to client
Copyrighted items are loaned
Requests received by fax, mail, data entry, phone clearance
Check DSS database for pullsheet items not found on fiche or shelves
Ask vendor for status of items on toolong report
Call customer to cancel request
"Make tech" for requests coming in through
Standing order received from vendor (NTIS/DK) (fiche boxes)
Standing orders filed in cabinets
DSS receives fiche or paper for items ordered
Call vendor to place order; Vendor cannot fill order
Call vendor to place order; — find price — can fill the order
Order docs 1. who ordered 2. Job number 3. PO rec'd; Pull-sheet generated
Pullsheets automatically generated daily for TRS items
Closed out Diana DSS system and sent
Can't find order; check DSS database for misfiled TRS
Register TRS orders placed in DSS system
System generates letter to customer as morning report for librarians
Orders not rec'd appear on "toolong" report after 21 days
Vendor is called; comments added to request
Cancel request by DSS
Bulletin requests through Library Command as photo requests; have to "make tech"
Customer receives letter confirming document order
Customer may cancel request
Customer is informed
TR mailed to customer
Cancelled requests

Figure 1

- To have a faster document response time;
- To have a cheaper technical reports document;
- To have easy access to technical reports;
- To have the document citation accompany the request;
- To have the ability to receive the full text of technical reports electronically.

Step Three: Define and Establish Measures

Measures are needed to determine how well customer requirements are met and to provide a framework to evaluate the success of changes implemented as a result of the quality process. Measures were put in place to determine vendor response time, in-house document copying response time, number of microfiche frames copied per month, number of documents copied per month, average vendor document costs, and the date alerting tape was received vs. the corresponding microfiche shipment.

The team believed that receipt of the tape used to announce technical reports from NTIS and DTIC was received before receipt of the corresponding microfiche shipments used to fill the requests. The team began to log the date of tape receipt and microfiche shipments and determined that microfiche shipments lagged about one month behind tape shipments. As a result of the lag time between tape and microfiche shipments, customers were waiting at least one month for a document upon request. Microfiche shipments from DTIC were further delayed because they went through another department in Whippany, NJ because the technical reports service in Warren, NJ did not hold the government contracts. As a result, a separate user account was established with DTIC for the service in Warren, NJ.

Measures were also put in place to determine how well the collection was maintained. When the technical reports collection was compared to the book collection, it was discovered that duplicate copies of reports existed in both collections and many documents cited in the technical reports database were missing. The reports in the technical reports database were not cataloged by a standard library cataloging system; thus, it was very difficult to locate an item in the database. Most of the titles in the technical reports database did not circulate and of those that circulated, 77% were requested only one or two times.

The team also studied how much it cost to operate the service. In 1991, the service maintained an operating budget of $165,000 that included the costs of one and one-half staff personnel, tape leases, vendor supplied documents, and lease of two high-speed Tameran microfiche copiers.

Step Four: Assess Conformance to Customer Requirements

The process was not conforming to customer requirements because it failed to provide customers with easy access to technical reports, timely documents, and inexpensive documents.

In addition, The AT&T Library Network operates on a charge-back basis. Each department is required to recover 100% of its costs. The service was not recovering its costs. Customer comments such as, "There's a cultural shift away from using these...we are going to very fast, product focused research and there will not be reports out there," challenges the team to improve service quality and make it cost-effective, despite predicted declining demand.

Step Five: Investigate Process to Identify Improvement Opportunities

The team began to investigate a pilot program between NTIS and another major corporation. In this pilot, library customers have greater access to technical reports because the entire NTIS database is mounted on an internal library system and document requests are sent directly to NTIS for hard copy document fulfillment. The team investigated several cost-cutting scenarios and decided to pursue a pilot with NTIS that was similar to the one at the other corporation, except that DTIC was also selected as a vendor because it could fulfill some document requests significantly cheaper than NTIS. The technical reports service would cease to store and collect microfiche copies of government documents.

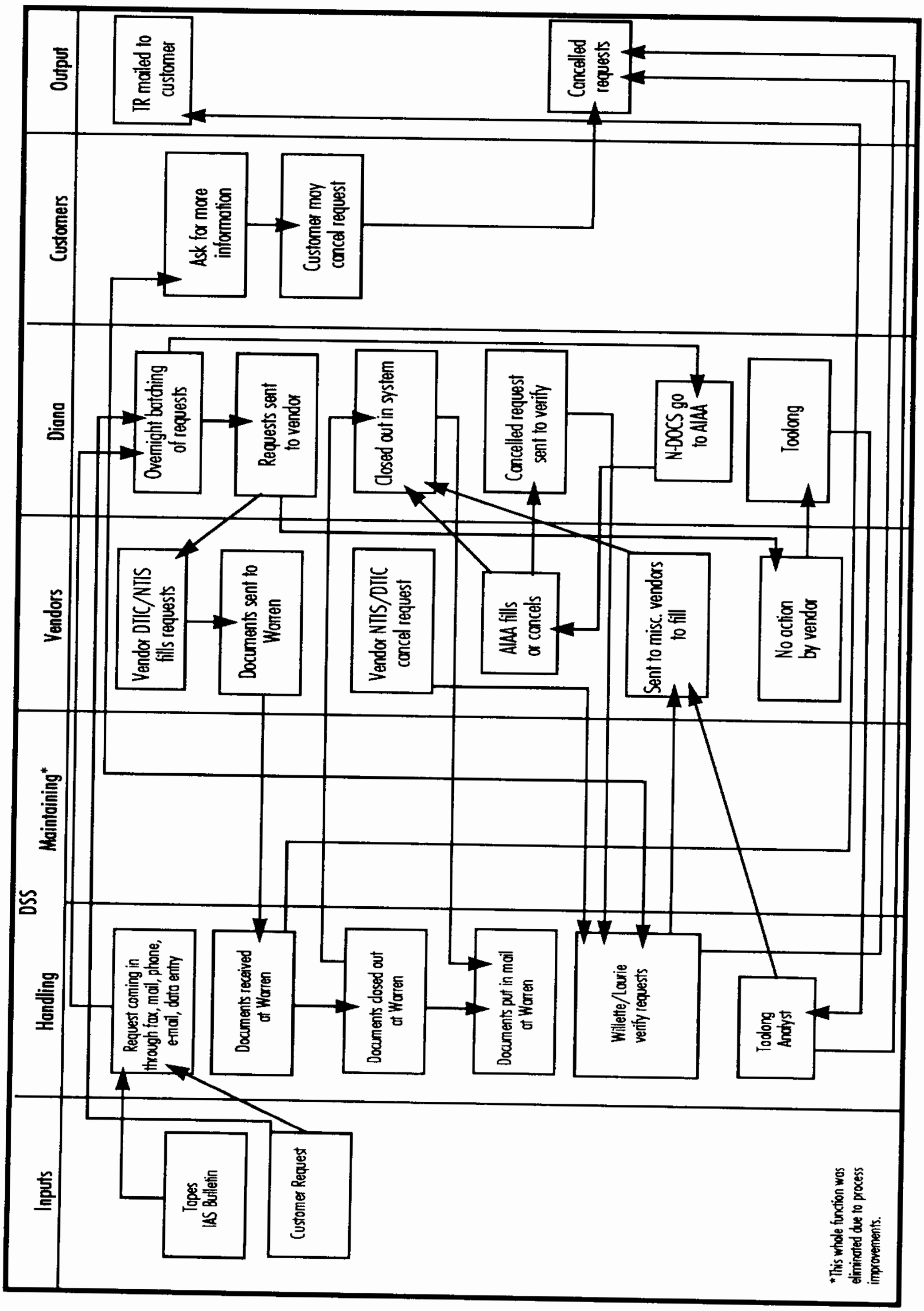

Inputs
Handling
DSS
Maintaining*
Vendors
Diana
Customers
Output
Tapes
IAS Bulletin
Customer Request
Request coming in through fax, mail, phone, e-mail, data entry
Documents received at Warren
Documents closed out at Warren
Documents put in mail at Warren
Willette/Laurie verify requests
Toolong Analyst
Vendor DTIC/NTIS fills requests
Documents sent to Warren
Vendor NTIS/DTIC cancel request
AIAA fills or cancels
Sent to misc. vendors to fill
No action by vendor
Overnight batching of requests
Requests sent to vendor
Closed out in system
Cancelled request sent to verify
N-DOCS go to AIAA
Toolong
Ask for more information
Customer may cancel request
TR mailed to customer
Cancelled requests
*This whole function was eliminated due to process improvements.

Figure 2

The NTIS database would replace the present technical reports database, giving customers access to more records. In addition, response time from vendors would be decreased because NTIS would be delivering hard copies of documents via overnight mail and orders would be transmitted electronically via ATTMail, a commercially available electronic mailing system, so vendors could process orders sooner. In order to facilitate the order check-in process, the vendor would affix a unique bar code to each request. With this system, the vendor bar code would be wanded by a bar code reader in Warren, NJ and the order would automatically be marked complete in the internal photocopy tracking system.

Each corporate and university report record would be examined to see if it should be retained and recataloged according to standard Dewey classification or discarded. The university and corporate reports that were retained were added to the books database because some of them were already in that database. By cataloging these reports as books, better statistics could be gathered on circulation history and a weeding policy could be developed.

After working on the collection maintenance issues, the team focused on the issues involved with acquiring the collection. In addition to the government reports, customers wanted to know what was being published by universities and other corporations. The team compiled a matrix of what is available, costs, and accessibility. In compiling the matrix, employment was contacted for the names of schools the company recruits from, customers were contacted, and request history was studied. The matrix showed that this information would be difficult to disseminate due to lack of standardization of these reports, lack of vendors or suppliers for these reports, and lack of electronic access to these reports. The team agreed that access and reporting of corporate and university technical reports is a gray area where little is known. The team will continue to work on obtaining access to these reports.

Finally, a survey of all alerting bulletin subscribers was conducted in order to revamp the *New Reports* bulletin of technical reports. As a result of the survey, technical reports were announced by subject areas and expanded to be included in other alerting publications.

Step Six: Rank Improvement Opportunities and Set Objectives

The team set the following improvement opportunity objectives:

Improvement Opportunity	Time Table
Negotiate NTIS tape agreement ---	Completed 10/91
Stop microfiche ordering ----------	Completed 12/91
Give vendors our requirements ----	Completed 12/91
Revamp Alerting Bulletins ---------	Completed 4/92
Mount NTIS tape on LINUS ------	Completed 4/92
Catalog University & Corporate Reports as Books -------	Completed 4/92
Discard Microfiche Collection ----	Completed 5/92

Step Seven: Improve Process Quality

After over a year of bimonthly meetings, and a lot of hard work and perseverance, the team reached the last step of the process. The PQMI book describes the purpose for this step in the process as:

> The methodology is a cycle: you manage the process and improve the process and, when you *come to the beginning again*, you repeat the cycle of activities to bring the process to a *new* level of performance.[4]

Coincidentally, the block diagram was redone to document the new process on April 9, 1992—exactly one year after the first block diagram was done. The new block diagram showed the process was streamlined as the number of steps in the process was reduced from 31 to 24. In addition, the entire column devoted to maintaining the process was eliminated.

Conclusion

The team encountered a number of challenges on the way to achieving its accomplishments. Electronic mail to vendors often did not go through. Bar codes from DTIC were not immediately machine readable. Early on, we discovered that NTIS could not adequately fill the NASA documents in its database. Many of the NASA documents in the NTIS database were what NTIS called "Mother/Daughter" documents in which a paper would be cited (daughter), and the entire conference proceeding (mother) would be sent. NTIS was not able to fill document requests for individual papers. Since our customers did not want the entire proceedings or "mother," another vendor, American Institute of Aeronautics and Astronautics, (AIAA) was brought in to fill orders for NASA documents. The team will be monitoring this closely to ensure that the shift in vendor strategy will not affect the NTIS volume discount.

The number of document requests for technical reports continued to decline in 1992, but as a result of the new system, we were not wedded to expensive equipment or staff and could adjust to the decline without effect on the internal operation.

One of the biggest challenges that lies ahead is gaining access to university and corporate reports. A new vendor, Research Access, has emerged for university technical reports, and we are currently working with the company to receive new report announcements in electronic form and as a document supplier.

Finally, perhaps the biggest challenge of all lies within AT&T Bell Laboratories. We must make our customers aware that document supply is a complex, expensive business that adds value to the technical community. A misconception of document supply and library services exists with some customers at AT&T Bell Laboratories. Many believe that information should be free or available at very low costs. One customer commented in a recent customer survey, "I can say that a clerk ought to be able to locate, photocopy and mail a technical report in less than ten minutes." That belief is fine as long as you can easily locate the report. Other comments such as, "My organization is actively discouraging the use of any LINUS services. It has become dangerous politically to use it," illustrate the resistance to pay for library services.

The technical reports service process management team has much work to do to change customer perception of the service. The team believes that better access to university reports will greatly enhance the value of the service to AT&T Bell Laboratories' customers. Two advertisements were distributed to the entire AT&T Bell Laboratories community to inform customers of the availability of university reports from Research Access, and a letter was written to Research Access to request that additional schools be added to its database. Some schools were contacted directly for electronic access to their technical reports. The team is also investigating new charge-back systems such as one where the customer will be billed actual document costs plus a handling fee vs. paying a flat document fee.

The technical reports service process management team has emerged as both a model of the success of quality efforts and as a pioneer in the area of technical reports acquisition and dissemination.

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LIFENET/INTERNET and the Health Science Librarian

by Lois Weinstein

■ The Medical Library Center of New York, a cooperative library agency for the health sciences, developed a program to offer an electronic communications system (LIFENET) with access to the Internet for its members. Information on documentation and training as well as statistics on the subsequent use of the system and of the Internet are discussed in the article. Specific examples of how health science librarians are using the system include bibliographic verification, reference, research on integrated library systems, production of duplicate journal lists, and professional activities such as electronic mail and discussion groups (listservs).

Introduction

A revolution is coming not unlike that which took place in libraries in the early '70s. Prior to that revolution, most literature searching in health science libraries was done manually and a complete author search could take as much as three days to complete. After the introduction of automated on-line searching, the time to complete such a search was reduced to mere minutes. From terminals to PCs, from card catalogs to on-line public access catalogs (OPACs), from one database to hundreds, from reference books published on paper to those published in electronic form, from searches put together by cutting and pasting with scissors and glue to automated cutting and pasting by means of word processing, the role of automation in libraries has expanded. Health science librarians have adapted to these changes and grown as professionals. The latest expansion involves a system now called the Internet. It is revolutionary in that, as never before, we can truly experience a "library without walls." Once again, it will change how librarians practice their profession and will have a profound effect on the library of the future. This article will show how a group of health science librarians are using the Internet and how they have grown professionally.

History and Background

According to Bruce Sterling, the Internet was the 1964 brainchild of the RAND Corporation's Paul Baran, who proposed an electronic communications network that would have no central authority and would operate from day one even though all the links were not established. All the nodes on this network would be equal, with each node being able to originate, pass, and receive messages. The system was first tested by the National Physical Laboratory in Great Britain in 1968 and shortly afterward the Pentagon decided to fund a larger project. In 1969 the first node was established at UCLA and since then the Internet has grown by leaps and bounds. Scientists and engineers in universities and in the military were the first to jump on the bandwagon in order to share data and exchange ideas.[1] Today the Internet is open to all who want access, although there may be a cost for such access. It is used most heavily for electronic mail, discussion groups, access to online library catalogs, long distance computing, and file transfers of data and programs.[2] Based on these capabilities, the Internet holds many opportunities for health science librarians in the management of a cost-efficient information services operation.

The Medical Library Center of New York (MLCNY) is a not-for-profit, independent organization chartered in 1959. It was established to facilitate access to health science information via the coordination of union lists, promotion of technical services standards, and maintenance of a central repository collection of serials and government documents for resource sharing. It is a cooperative library agency that coordinates the mutual resource sharing activities of its members. While MLCNY members do have telefacsimile and vehicular delivery systems for resource sharing, there was no electronic communication system such as electronic mail (e-mail) linking all the members.

In January of 1992, MLCNY administration learned of a way that the members could evaluate Internet access and its capabilities. One of the librarians, Carolyn Reid, Associate Director of the Cornell Medical Library (a member institution), informed MLCNY administration about a system called LIFENET. This system was created by the National Aeronautical and Space Administration (NASA) in 1987 as part of an ongoing project that would provide the life sciences community with an effective method of exchanging ideas and information. LIFENET links to existing electronic communication networks such as NSFnet, Internet, and BITNET[3,4] and serves as a primary network for scientists, technicians, researchers, and bioengineers who are not already part of a network. LIFENET was "discovered" by a health science librarian in 1990. Greg Pratt, the outreach librarian to NASA from the Houston Academy of Medicine—Texas Medical Center Library, learned about LIFENET while working at a NASA site. He applied for and received access to the system and subsequently informed his colleagues at the Academy about it. Marlene Englander, at that time an Academy colleague and secretary of the Executive Board of the Hospital Libraries section of the Medical Library Association (MLA), proposed using the system as a cost-effective means of electronic communications for the members of that Board. Englander requested permission from the LIFENET administration for access to the system. The plan was approved by NASA officials and codes were assigned to the Section Board members. LIFENET continues to be used by them for e-mail and the posting of committee minutes and news.

MLCNY administration contacted LIFENET administration at the Johnson Space Center in Houston, TX, where the system is maintained, and requested access for a limited number of personnel at all MLCNY member institutions. In February 1992, this permission was granted and the registration of the members began.* NASA assesses no charges for using LIFENET. Additionally, we decided that there would be no MLCNY charges associated with start-up or passwords in order to eliminate as many barriers as possible in introducing the members to the LIFENET system and to the Internet. Therefore, the only charges that are incurred for using LIFENET are for the local SprintNet phone connection.

The Training Process

The LIFENET system is not difficult to use since it is in menu format (see Figure 1), but having a comprehensive manual was essential for the training program and, later, for giving assistance over the phone. The booklet that is distributed by NASA to explain the system was not detailed enough for those librarians whose only experience with on-line systems was DOCLINE and MEDLINE. Additionally, this booklet had no information on the Internet. The MLCNY LIFENET manual was created by downloading screens of information to a hard disk of a computer and word processing the results. Information on the Internet and its resources was added. Finally, a descriptive table of contents was added to assist in locating information (see Figure 2).

Training sessions were divided into Novice and Experienced classes. Novice classes were for those who had little computer experience and Experienced classes were for those who had used electronic mail and were more comfortable with on-line systems. Each class was three or more hours in length and consisted of two hours of lecture and at least one hour of hands-on training. The number of students in each class was kept to less than five to ensure that each student would have the opportunity to log in and try various functions.

The topics covered in the Novice class included the logon and logoff process, how to change the two passwords (The NASA administration is very security-conscious and requires two passwords that must be changed on a regular basis), how to read the bulletin boards, search the user directories and create a distribution list, read and dispose of e-mail messages, store non-LIFENET e-mail addresses and send mail to both LIFENET and non-LIFENET users. The Experienced class covered these topics in a less intense manner and included topics on the Internet such as the history of the Internet, etiquette on the Internet, what is available on the Internet that might be of relevance to health science librarians (for example, on-line catalogs, discussion lists, gophers, bulletin boards) and how to access this information.

Classes were held at MLCNY headquarters and at various members' locations. MLA Continuing Education credits were approved and promoted as an added incentive for class attendance. Forty-one individuals took the Novice class and 45 individuals took the Experienced class. Several individuals took both classes although only one MLA certificate for CE credits was issued.

In August 1992, NASA announced that they were suspending the issuance of LIFENET codes until a policy on membership requirements could be developed and approved. The policy was completed and implemented as of January 1, 1993 and the issuing of LIFENET codes is being prioritized. Those who work in the space program receive the highest priority. LIFENET is only one way to access the Internet; there are many others.[5,6,7] However, LIFENET is currently the only way for the health science librarians of MLCNY to access the Internet for the cost of a local phone call.

Statistics

LIFENET codes are assigned to individuals and not to institutions due to strict NASA security regulations. Individuals from 62 of the 68 MLCNY member institutions applied for LIFENET codes between February 1992 and August 1992. Eighty-four codes were issued to individuals, while 22 individuals who applied for codes were not able to get them due to the timing of their requests. Individuals in four member institutions never applied for codes.

The following statistics were obtained in a March 1993 survey of MLCNY members who applied for LIFENET codes (including members who applied for LIFENET codes and already had access to the Internet through their institutional system). Eighty-eight surveys were distributed and 58 were returned for a 66% rate of response.

Table 1 analyzes the access activity for the survey respondents for LIFENET and the Internet. Table 2 analyzes the members' usage of the LIFENET and Internet systems.

Internet Benefits for Health Science Librarians

Bibliographic verification

The Internet offers a communication link to a multitude of library systems that have online public access catalogs (OPACs).[8] This access offers a low-cost method of verifying citations and locating holding institutions for monographs. By doing the verification on the OPACs of MLCNY members, the librarian can then use the National Library of Medicine's DOCLINE system to order the material. This procedure reduces the amount of time needed to receive the material since an exact match is made within the consortium.

Reference Resources

Many OPACs also have full-text databases, such as the *CIA World Fact Book* on the Rutgers Library system, that are used to respond to queries from the patrons. The community freenets offer helpful information on local government, businesses, events and services to medical students, interns and others who are moving to those communities.[9,10] For hospital administrators who need the most current information on the status of the Clinton health plan, the librarian can subscribe to White House press releases.[10] Listservs (which are electronic discussion groups) cover many topics of interest to health science librarians. There are Listservs on medical librarianship (MEDLIB-L),[11] serials (SERIALST), government documents (GOVDOC-L), reference questions (STUMPERS-L), and many on health science topics.[12]

Research

The Internet can be used to explore various integrated library systems to understand the benefits and disadvantages of each should the opportunity to purchase such a system arise. Merril Schindler, Assistant Director at Mount Sinai Medical Center's Levy Library, used this approach during a recent investigation to identify an appropriate system for her institution. Using the Internet to access a variety of on-line catalogs eliminated the time that would have been necessary to visit the institutions and allowed the investigation to take place in a more relaxed atmosphere. An added benefit occurred when, using several computers, the on-line catalogs were accessed at the same time for exactly the same search. This allowed comparison of response times, user interfaces, indexing, and retrieval results.

Patrons doing research can be assisted by demonstrating various data banks and in obtaining information from these data banks on a regular basis. For example, Francine Tidona, Chief, Library Service of the Department of Veterans Affairs Medical Center in Brooklyn, knew that molecular biologists on the staff were investigating gene sequencing. She demonstrated the genetic sequence database provided by the National Center for Biotechnology Information (GENBANK) and accessed via LIFENET and the Internet. She has now become a much more active participant in the project by searching gene sequences and downloading the results.

DOCLINE

The National Library of Medicine distributed a message requesting that users access DOCLINE, their electronic interlibrary loan ordering system, by means of the Internet to save the government the money it was spending on communications charges. Ruth Hoffenberg, Library Director at Queens Hospital Center, implemented this procedure and finds that it works very well.

Duplicate Journal Lists

A non-member hospital librarian has been using LIFENET to publish a duplicate journal list. It is a cost-effective, timely way of reaching many institutions in order to list "wants" and "offers." Using this system can save the cost of purchasing missing items while insuring that a complete run is available for binding. It also offers a unique way to dispose of unneeded materials and saves the cost of distributing the lists in the mail.

Professional Activities

Most health science libraries have small staffs and may only have one professional librarian. Due to time and budget constraints, that professional may not be able to interact with other library professionals on a frequent basis. The Internet overcomes this problem through the use of e-mail and discussion groups such as MEDLIB-L.[11] It is common to see the following types of messages on MEDLIB-L: requests for information that a librarian has been unable to locate for a patron, surveys for input on equipment purchases or library procedures, debates on government policies regarding information access or delivery, meeting notices, and results of those meetings.

The Internet can save time in arranging and publicizing meetings through the use of electronic mail and distribution lists because no manual processing of memos or envelopes is necessary. Patricia Gallagher, Acting Director of Beth Israel Medical Center Library in New York, routinely sends out such messages to announce meetings of the New York/New Jersey MLA chapter's microcomputer users group.

Problems

The problems that developed with this project were mostly human ones. LIFENET users forgot their passwords, how to log on, change their passwords, dispose of mail, send mail, and how to use other functions of the system. These questions were usually answered over the phone and did not require a site visit. A frustrating problem for those who use the system regularly is that it occasionally disconnects and the user has to log back in. The most serious problem was that persons who had acquired a code and did not use it for one year were dropped from the system by LIFENET administrators. Members who had LIFENET codes and were dropped due to lack of use have now come to understand the value of e-mail and the Internet. Although they can reapply for a code, the new NASA policy prioritizing access means that they may have to wait a long time and, even then, may not be granted one.

Conclusion

LIFENET has given The Medical Library Center of New York access to a national electronic communications system at a very minimal cost. It has provided a unique opportunity for health science librarians to experiment with electronic mail and access to the vast treasures on the Internet. In turn, they have been able to provide "just-in-time" access to databases, catalogs, and texts rather than purchasing these materials "just-in-case." The system has also given the health science librarians a unique low-cost way to grow as professionals and to experience the front edge of the revolution that is sweeping the nation.

* *I wish to thank R. Heyer, G. Varsos, and K. Wiker, all of NASA, for giving us this opportunity and for their assistance and encouragement.*

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Figure 1

Sample Menus (General and Mail Menus)

LIFENET Top Menu

```
 1 About LIFENET
 2 LIFENET Mail System        (0 new, 0 unread)
 3 User Directories
 4 Send and Receive Files
 5 Access Other Systems
 6 Bulletin Boards
 7 LifeLines, A Discussion & Comment System
 8 Special Committee Activities

 H Help and User Profile
 Q Quit LIFENET

 22-APR-1992 08:07:10
   Enter Desired Option and press RETURN: 2
```

MAILSYSTEM 9-JUN-1992 14:01

For: LifeNet

1 Read Mail (0 new, 0 unread)
2 Send Mail 2E Send Mail Using Editor
3 Send Document Options
4 Create Distribution List
5 Modify Distribution List
6 Review Distribution List, Document
7 Nickname Menu
8 Create a Mail Address to Another Network

T=Return to top menu, P=Return to previous menu, Q=Quit LIFENET, H=Help

Enter Desired Option and press RETURN:

Figure 2

MLCNY LIFENET Manual - Table of Contents

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Table 1: Frequency of Access to LIFENET or the Internet

EMBED MSGraph \s * mergeformat

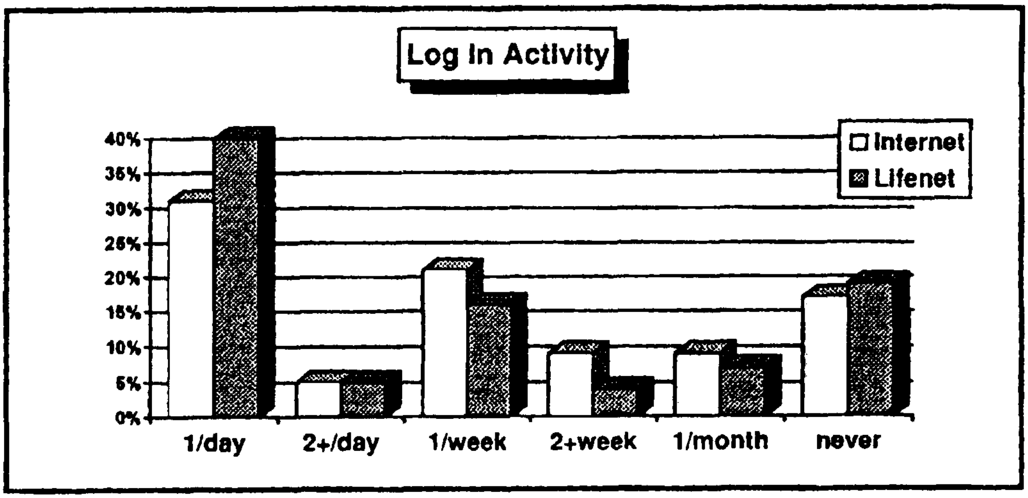

Table 2: Use of LIFENET or the Internet

Email	79%
Discussion Groups on the Internet	43%
Bulletin Boards on LIFENET	38%
On-line catalogs	35%
Bulletin Boards on the Internet (e.g. GENBANK)	26%
DOCLINE access	26%
Committee activities	19%
Database access (e.g. OCLC, Dialog)	12%
Discussion Groups on LIFENET	7%

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Activity Based Costing for Services: The Corporate Information Center

by Gene Danilenko

■ Activity based costing (ABC) has been used in manufacturing as a way to more accurately assign costs to products. Although product definition is more complex in services, ABC can also be used by information centers to provide better cost information. By allocating costs to activities that cause the expenses to vary, managers gain a better understanding of the true cost of a product, an insight to excess capacity, and a tool to use in total quality management/ continuous improvement.

Introduction

Activity based costing (ABC) has been used for several years by many manufacturing firms where there was a need for a more accurate way to assign costs, especially overhead, to products. Traditional accounting uses direct labor or machine hours to assign overhead costs to products. However, as labor diminished as a percentage of the cost of goods, the traditional accounting methods distorted the true costs of goods. Although labor is still the most important part of most service industries, many service organizations also lump many different types of costs into overhead, distorting the true product costs. Activity based costing is a method to accurately distribute these unassigned costs to the activities, and thus the products, that caused them.

Activity Based Costing (ABC): Definition

An activity based cost system is one that first traces costs to activities and then to products.[1] Activity based costing reveals the links between performing particular activities and the demands those activities make on an organization's resources.[2] Thus, ABC tries to determine the cause of a cost and then to assign that cost to the product that caused it. Using an ABC system allows a manager to analyze overhead and determine the activities that drive the costs.

When Activity Based Costing Should Be Used

ABC can be successfully used when an organization has a diversity of products, processes, and customers; significant overhead costs not easily assigned to individual products (That is, individual unit direct costs do not make up most of the cost); and individual products and customers placing demands on overhead resources not proportional to volume. (That is, products do not consume overhead resources equally).[3,4]

Most service organizations meet these conditions. The products are usually highly varied or custom, it is often difficult to determine which overhead costs are attributable to a particular product, and volume (usually measured as labor hours) is often not a good predictor of the demands placed on overhead.

Product Definition for Services

One problem service organizations may have in implementing ABC is defining their products. Manufacturers produce tangible items like clocks or balls. They make items that can be seen and felt. These items can be produced in advance and stockpiled. This is not the case for a service organization's product. The two basic characteristics of a service's products are intangibility and simultaneity.[5]

Intangibility means that the service product is not, for the most part, a material good. An example is an education product for end user searching (a class). The service product, knowledge or skill in searching, is purchased, but it is not a material good that can be held or traded. There may be material components to the product such as a workbook or reference guide, but those material aspects are not the entire product. The product also consists of the instructor's time and knowledge, the physical surroundings of the class area, and the paperwork handled by administrative staff.

Not only are service products intangible, but the production and consumption of a service product takes place at the same time at the same place (simultaneity). Referring to the above education example, the student/customer and the instructor are at the same place, and the service is rendered and consumed at the same time.

Two other characteristics of a service product are the involvement of the buyer in the production process and the fact that the product does not exist before purchase and cannot be produced for inventory.[6] The buyer is in direct contact with the production process and introduces hard-to-control uncertainty into the process. The buyer has substantial influence over the amount and type of resources consumed for the product, and the result is often a custom-designed product for every buyer.

Because of the complexity of the product concepts and the heterogeneous types of products offered by most service organizations, the products must be viewed as a series of activities that consume resources. Thus, similar products, such as information on a state-of-the-art technology and competitive information on a company, may consume different resources in differing amounts. Therefore, they should be treated as different products with different costs and prices.

The ABC System in Depth

The first step in using an ABC system is to identify the activities that are involved in each product or process. Activities can be divided into four categories: unit-level, batch-level, product-sustaining, or facility-level.[7] Unit-level activities are those that occur every time a single product unit is made. An example of a unit activity is the labor needed to complete one interlibrary loan request. Batch-level activities are associated with a group of products. The equipment set up to run a series of journal payment invoices (units) is a batch-level activity. Product-sustaining activities consume resources that allow products to be developed, produced, or sold. They provide the overall capability that enables the organization to make a product. In manufacturing, engineering change notices or product specifications are examples. In services, continuing education or the maintenance of needed tools (like computers) are examples. Facility-level activities are concerned with maintaining the production area, office area, or plant. A few examples are heat and light, management (managers), and space costs or facility depreciation.

Facility-level costs are common to many products, and it is often impossible to assign these costs to individual products. A pure ABC system would treat these costs as period expenses. That is, these would be fixed costs that would be expensed in the period that they occur. These costs represent a capacity decision by the organization to provide facilities for a particular level of service.[8] However, most companies that adopt ABC systems usually allocate the facility-level cost to individual products.[9]

Cost Drivers

After activities have been grouped by one of the four category levels, cost drivers that reflect a causal relationship between the resource consumption of activities and cost can be determined. That is, activities that cause costs to vary are cost drivers. Determining the cost drivers is often the most difficult and time-consuming task in establishing an ABC system. Good records of all the activities related to products are needed. The simplest method is to obtain the total cost of providing groups of products and divide by the number of units provided (the average activity cost). The problem with the average is that, for most services, the custom products result in varied activity times and resource usage. Thus, the less time-consuming products subsidize the ones with higher activity times. Averages only work when the products are basically identical at the unit level. Invoice processing is an example of an activity with units that are basically identical. Another method of obtaining cost driver information is to design a study to sample employee work activity at representative points in time. From these sample estimates, the time and resources involved in various overhead tasks can be determined. Combined with employee and other resource cost information, the sample can provide total cost information.[10]

When assigning costs from batch and product-sustaining activities back down to each unit, it is important to realize that the resources consumed by these activities do not vary at the unit level. They also cannot be controlled at the unit level. That is, the resources consumed at the batch level go up with the number of batches, not the number of units within the batches.[11] For example, there are costs associated with setting up and printing a new items acquisition list that are independent of the number of individual pieces announced. These costs vary with the number of lists produced, but not the number of items on the list.

Examples of Cost Drivers

To better illustrate how cost drivers relate to activities, a sample of some typical activities and their potential drivers is shown at the bottom of this page.

Often labor hours are used to explain cost behavior for activities such as accounts payable or personnel. However, the spent labor is a result of a demand on that activity and does not drive it.

The Corporate Information Center

Activity based costing can also be used in corporate information centers to help managers better understand the costs of their products. One main product category most information centers offer is answers to research questions. There is a tendency to group all of these requests together, even though there is great product and activity consumption variation among the different types of question/answer products. A prior art search on a product or process consumes different types of resources than a background search on a company and its officers. It is easy to assign the direct labor hours and direct online database charges to the individual product. However, how does the manager account for the electricity, computer maintenance, space costs, computer depreciation, or the cost of books or journals used in providing the product?

Using computer maintenance as an example, the cost of the maintenance may be determined to be based on the number of research questions answered. The total cost of maintenance is divided by the number of questions, and a maintenance cost per question is assigned to

Examples of Cost Drivers

Activities	Cost Driver
accounts payable	# of vendor invoices
personnel recruiting	# of new hires/# of openings
data processing	# of reports requested
special reports	programming hours
utilities	direct usage/occupied space
collection weeding	# of items examined

every question. The base used to divide the maintenance cost should be based on the total capacity to answer questions and not the expected number of questions. By using the expected number of questions to be answered instead of the total capacity, the cost of the excess capacity is charged to individual products. This will lead to overpricing of products and will cause future demand to drop. This, in turn, causes even greater unused capacity charges to be assigned to products. The products become more expensive, leading to a "death spiral" where eventually the product must be dropped or outsourced.

A more difficult problem pertains to the use of an information center's collection as a research question product. Books, journals, reports, and videotapes, etc. are treated as fixed period expenses, the costs of providing a certain level of service expensed during the period of purchase. Because of the expense of a collection and the continual need to justify continued purchases and storage costs, a method to assign costs to products is desirable. Unless the resource is used in a product, it becomes a cost of idle capacity. Several issues are involved in this process: the total cost of the initial purchase of the item, the capacity of the resource per year, the expected life of the resource, and the costs of the resource after the initial year.

The first issue is the most direct. The initial total cost of an item is the cost paid to the vendor, the cost to receive it, and the cost to process it so it is available for use. Add to this cost the cost to store it for the year. The item requires shelf space, and rent and utilities are required for that space. A cost of dollars per inch can easily be derived for storage space.

The next issue, the capacity of the resource, is much more difficult to determine. The judgment of professionals familiar with the information resource is necessary to evaluate how the resource is used. For example, new journals might be used for half an hour, on average, by customers browsing through the contents. Assuming a 10-hour day to accommodate personal flexible schedules, the capacity of that journal is 20 uses per day. Assume that this same journal is no longer browsed after the first year. It is only used to provide copies to answer specific research questions. Assuming five minutes per photocopy, the capacity of the journal issue becomes 120 uses per day.

The third issue, expected life of the resource, is also based on professional judgment. Some reference directories may have a life of one to two years. Some types of scientific information may have a life expectancy of one to 10 years or may be considered to have significant historical value and have a life expectancy of 100 years. Despite the uncertainty, some time frame must be assigned to indicate the expected usefulness and value of the resource.

Lastly, the cost of the resource past the initial year is based in part on the cost to store and provide access to the resource and also in part on the perceived value of the information in the resource. Because the information in the resource has no value until it is used in a product, and the perceived value of the information will vary with the customer of the end product, an objective measure is needed to determine the value of the activity of accessing this information resource. Exponentially depreciating the cost of the initial investment over the expected life of the information resource would be an objective measure of the remaining value of the materials. Depreciating the cost exponentially takes into consideration that current information is usually perceived as having the most value. Adding this value to storage costs and dividing by the capacity gives a cost per use of this resource.

Cost drivers for all other products can be assigned by a similar analysis. The important items to look for are the true causes for an activity that results in a cost. In addition, capacity for each activity needs to be determined in order to accurately reflect the cost per unit and avoid the death spiral.

The determination of the cost drivers can be extremely time-consuming. Intensive interviews and time tracking must be done, large amounts of records need to be reviewed, many assumptions need to be made where information is not available, and new methods to track different types of information may need to be developed. The benefits of establishing an

ABC system need to be weighed against the cost of establishing and maintaining the system.

Benefits and Implications for the Information Center

One benefit of an ABC analysis is identifying excess capacity. Managers purchase resources to acquire capacity to perform activities. A person hired to answer research questions may be able to complete 20 per week. If that person only has work for 16, there is an excess capacity of four questions, which may translate to about eight hours. By comparing usage versus capacity, managers can determine how much of the available resources are being used and the cost of the excess capacity. Because excess capacity implies flexibility, the excess allows the manager to use resources to meet other needs of the organization. An ABC analysis gives the manager a better understanding of how much capacity costs and how much individual resources are being used.

Another benefit of an ABC system is the information it provides on product costs. The ABC system can redefine how information center managers view the costs of their products. Rather than assuming most costs are overhead costs, ABC allows managers a means to calculate meaningful product costs. Because of this, ABC can be used as a tool for continuous improvement/total quality management. High cost activities will be more easily identified. These activities can then be analyzed for improvement, or barring improvement, outsourcing.

A final benefit of ABC is the information it provides to assist managers in budgeting, forecasting, and performance measurement. The system helps predict resource usage for upcoming fiscal cycles by providing an accurate model of the past.[12] Information center budgets are usually based on last year's cost rather than future activity. Since an ABC system gives managers costs of activities and helps identify where resources were used, the manager has a better basis for developing budgets based on future business levels.

Conclusion

Although defining products, activities, and cost drivers in an information center is difficult, an activity based costing system will provide value for both cost recovery and discretionary expense centers. The system provides a more accurate reflection of product costs by linking activities with demands on resources. The analysis also shows where excess capacity occurs so managers can shift excess resources to areas that need them. In addition, knowing a more accurate cost allows managers to price products accurately and pinpoint activities that have high costs and need improvement. Finally, an ABC system helps managers in forecasting and budgeting by allowing a more accurate analysis of past resource usage.

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Managing Information Resources in a Telecommuting Environment

by Blaise Glory

■ Organizations are implementing telecommuter programs which meet legal, personnel, and cost constraints. Before implementation of such a program, advantages and disadvantages to the organization and to the participating employees must be considered. Some advantages include lower costs, better recruitment and retention of employees, and better morale. Disadvantages include loss of management control and the need to change management styles.

In *Megatrends 2000*, the authors make a prediction that a significant percentage of people would work from their homes in the future, keeping in touch with the outside world through electronic means. While this has not yet happened on a major scale, there is evidence that confirms an increasing number of employees, including librarians, are relocating from their work sites to their homes or satellite offices while continuing to work for their organizations.

These workers are called "telecommuters," a term coined in the early 1980s, which means the telecommunication linkage of workers at home and/or alternative work sites with co-workers and management at an office site. An estimated seven million people telecommute, and this practice is becoming more prevalent because it is closer to home and more convenient for employees to work at an alternative site than at the main office.[1] Information flow from the organization to the employee and vice versa is maintained through a variety of electronic means, including telephones, facsimile machines, computers, modems, printers, and an extensive array of software. This paper will explore how the practice of telecommuting affects both employees and their parent library organizations.

Reasons for Telecommuting

There are several reasons why a library may choose to have some or all of its employees work from home/alternative work sites. One rationale relates to legal requirements. There are many local, state, and federal regulations requiring employers to implement various practices which will reduce harm to the environment. For example, as of November 1992, employers with 100 or more workers in cities with significant air pollution are required under federal law to reduce automobile commuting by 25%.[2] Moreover, the state of California has trip-reduction requirements which companies must comply with in order to reduce the amount of time it takes employees to get to work (thus spending less time in their cars).[3] For example, the first large-scale use of telecommuting by companies occurred in 1983 as an interim solution to traffic congestion during the Olympic Games in Los Angeles, CA.[4]

Libraries have found that one way to keep valued employees is by allowing them to telecommute. Employees often have life situations that can make a difference as to whether they remain with their organizations. Library management may decide that it is beneficial to both the library and the employee to work out a telecommuting arrangement. Consider the situation of an excellent employee who might need to leave the library in order to stay at home with a young child or an elderly parent, or to avoid a long and stressful commute.[5] If satisfactory arrangements can be worked out between the employer and employee about certain job issues, it might be possible to retain that employee.

In a poor economy, when libraries are struggling to contain costs in order to survive, and office space and services represent a major part of administrative overhead, anything that can be done to reduce this expense and still be efficient may be worth the effort. A telecommuting program allows libraries to reduce space needed for employees because the total work force does not need to utilize work space and equipment at the same time.

Advantages for Libraries

In addition to the advantages associated with telecommuting of retaining valued employees, complying with legal regulations, and saving on overhead expenses, research reveals other assets. Several studies have indicated that telecommuting programs have enhanced productivity by at least five percent and usually even higher percentages.[6] When J.C. Penney's used its mail-order business as a pilot project for telecommuting, customer satisfaction increased, as did employee satisfaction. Consequently, Penney's has expanded its program and made it a permanent project.[7] Similarly, Information Access Co. (IAC) implemented a telecommuting program which began as a way to retain skilled employees, but expanded to become an integral part of the corporate culture. IAC considers this program successful and vital to keeping employee morale high.[8]

Having a telecommuting program enables library management to recruit from a broader work force, such as the physically challenged or those lacking transportation. A telecommuting program would enable both groups to work at home and also helps employers to comply with regulations of the Americans with Disabilities Act.

Disadvantages to Libraries

The most important disadvantage management faces in undertaking a telecommuting program is that the management style of monitoring employee work must be altered.[9] That change could entail evaluating employee performance based upon results, rather than time spent accomplishing the work. With telecommuting, employee motivation and accountability may be more difficult and time-consuming unless employees are self-starters. Another drawback concerns the lack of or decreased interaction between employees and employer, as well as among employees.[10] In a telecommuting situation, it is not possible to walk across the hall or into another office to resolve a business issue or clarify an assignment. Some issues can be potentially disastrous if not handled carefully. While keeping employee morale and motivation high in an organization is difficult in the best of times, if an employee is out of the sight of the employer much of the time, it is even harder to maintain or increase morale because the employee may feel overlooked or ignored.

Confidentiality and security issues present additional challenges to library management contemplating a telecommuting program.[11] These problems could be exacerbated by the lack of organizational control over the workplace, coupled with the greater use of technological equipment.

Still another disadvantage in telecommuting is that library culture and workplace identity can be negatively impacted by having employees who do not participate in the central workplace setting every day. By the very nature of such a program, employees tend to be more independent and self-motivating, which in turn leads to the perception that they are not strictly "company men."

The high start-up costs for implementation of a telecommuting program can be a deterrent.[12] Studies show that the cost of equipping an employee's home or an alternate work site can be as high as $6,000–$10,000 per employee. In addition, for such a program to be successful, there must be similar and compatible equipment and software at the employee site and at the library site.

Advantages to Employees

Employees of organizations that have implemented telecommuting programs report that this practice eliminates long daily commutes and the attendant costs of parking and car maintenance. Working at home also allows for lower child care costs, either on a daily or irregular basis. Clothing costs can also be cut, as employees can dress more casually at home and have a less extensive wardrobe than is needed for working at the library work site.[13]

Many employees report that working at home in more comfortable surroundings and relaxed dress is much more conducive to productivity. Without other workers around them, constant telephone interruptions, and other distractions, employees find that they can achieve a greater amount of work in the same period of time that they would otherwise spend in the library.

Another favorable factor for telecommuting employees is that they have more control over their environment and comfort levels at home or at alternative work sites than is possible at the primary work site. They are able to adjust temperatures, eliminate noise pollution, and rearrange their work areas for maximum efficiency. This in turn leads to greater productivity on the employee's part.

Working in a telecommuting situation also allows employees to tailor their work schedules in order to meet personal goals and objectives. For example, one employee worked around college classes. Another was able to work as a volunteer in the community while still maintaining high productivity. Workers whose peak working hours are not those of a normal eight-to-five day also benefit from telecommuting. Consider an employee who works best from 4:00 a.m. to 9:00 a.m. A telecommuting program would allow that worker to do his/her best work, which in turn would benefit the library.[14]

Finally, employees report a reduction in overall stress, because less frustration and fewer minor irritations are experienced when working at home than in a typical library environment. Employees feel empowered because they have more say in how they are doing their jobs and in controlling the conditions around them.

Disadvantages to Employees

Overwhelmingly, the greatest single disadvantage for telecommuting employees is their sense of isolation.[15] The loss of an informal network of communications with the company is felt keenly by many employees who sense that they are left out of the communications loop on small, but important, daily happenings. By the very nature of telecommuting, those employees have the disadvantage of lack of opportunity to interact with other workers.

Reduction in salary and fringe benefits could occur as a result of telecommuting. Although many employees do not suffer a loss of benefits, others do if they are classified as "contract" or part-time workers. This is a growing issue for unions which have member organizations trying to cut costs by using home-based workers who are not paid on an equitable scale compared to on-site office workers.[16]

Finally, telecommuting employees can lose out on promotion opportunities. An "out-of-sight, out-of-mind" mentality can become the norm in a company, and this could mean that promotions are offered less quickly or not at all. Because it is much harder to evaluate telecommuting employees, there is potential for the abuse of performance appraisals and their rewards.[17]

Key Issues to Consider in Telecommuting

The single most important factor which must be kept in mind by organizations considering telecommuting is that both the employer and the employee must clearly understand their roles and duties in such a program. What work is to be done, how it is to be done, and when it should be communicated back to the office are all vital issues which need to be agreed upon before embarking on a telecommuting program. How work performance will be judged must be resolved at the start to avoid potential disagreements about evaluation.

It is also vital for libraries to implement and maintain a system of regular meetings or periodic office visits for any employee in a telecommuting program. The most successful programs provide a mixture of time spent at home and at the office, such as a schedule in which the employee works three days a week at home and spends the other two in the library. Some organizations have employees work 10 days at home and then spend 10 in the office for regular departmental meetings or for training. This allows the communication channels between employee and employer to remain open and helps prevent the sense of isolation often experienced by telecommuting employees.

Establishing a process of reporting or information exchange is another vital component of any successful telecommuting program. Successful programs usually have set times that are agreed upon by both the employer and the employee for reporting in or being reached in case of emergency situations. Many organizations have utilized electronic or voice mail capabilities to keep employees informed of important news or actions within the company. Whatever is decided, it is essential that a vehicle for consistent communication be established and followed for maximum benefit to both employer and employee.

It is generally acknowledged that a telecommuting program is not for all employees or types of positions. It is not suitable for some kinds of work, such as reference. Therefore, it is essential for libraries to identify which positions are most amenable to such a program. Typically, effective telecommuters are individuals who are self-starters, independent thinkers, and self-motivators. It is vital to the success of a telecommuting program that the right kind of employees and duties be matched to fit a telecommuting program.

Finally, the success of such a program will be dependent upon the organization's provision of appropriate equipment and software for the employees to perform the responsibilities their jobs entail away from the library. An organization cannot give employees old, outdated equipment to use at home and expect them to be productive. Instead, library management should make every effort to closely match the equipment placed in the employees' homes to that which is in the central site, so that maximum efficiency can be achieved. Careful consideration should also be given to how information is sent and received. In addition, any updates of equipment or software in the central site should also be provided for the employees' home equipment in order to stay at maximum efficiency. Any changes must also be communicated to employees so that they do not need to spend time trying to figure out what has been done to the system.

Summary

A telecommuting program such as the one discussed in this paper is a developing and increasing trend of library operations management. There are numerous advantages and disadvantages, both to the employees and to the organizations attempting to implement such programs. Results of pilot programs show that telecommuting is not suitable for every organization and every employee. However, if the program is carefully developed and managed, it will benefit both the participating employees and the organization.

Telecommuting is an exciting management prospect which offers unique opportunities to people and organizations looking for ways to better their working lives and to "do more with less." There are problems, as with any new concept, but the possibilities far outweigh the negatives. As technology advances and organizations change, the future of telecommuting holds great promise for our profession.

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Current Awareness Service for Special Libraries Using Microcomputer Based *Current Contents on Diskette*

by Robert S. Allen

■ **The intent of this paper is to demonstrate a method for developing and implementing a current awareness service to researchers using the *Current Contents on Diskette* software and data. Methods to plan, develop, test, and finally offer this service are given. Data collection and analysis are employed in the planning process. The benefits gained by integrating this service with complimentary services offered by libraries, especially document delivery, are examined. Substantial benefits to researchers, organizational administrators and the library are possible as a result of this service. A successful working model of this service currently in use at the Purdue University Physics Library and Earth & Atmospheric Sciences Library is discussed.**

Introduction

Providing a current awareness service or selective dissemination of information (SDI) is by no means a new idea. A discussion of the history of this subject and its influence on productivity in the corporate research environment was given by Mondschein.[1] Generally, current awareness services make researchers aware of new publications that may interest them.

This paper describes a simple method for providing a current awareness service to researchers served by a special library. Techniques for incorporating this service into a library's document delivery service are also presented. This method uses the microcomputer based *Current Contents on Diskette* software and data files [2,3,4,5] to provide weekly updates to participating researchers. This system operates by running a profile for each participating researcher against weekly updates of the database. The profile is created to extract citations to articles that match a researcher's interests. Extracted citations are forwarded to the researcher each week as a report via electronic mail. These reports are used by the researcher to request items of interest.

Using such a system, a special library can make researchers aware of a broad spectrum of information while providing access to the needed documents through local collections and document delivery services. Care should be taken to collect data regarding user expectations and current library use prior to applying this service. By using this data, improvements can be made in the benefits provided to users of special libraries and in the work flow of staff in the libraries employing this method. The key to building a successful service lies in careful planning. It is hoped that this paper will assist interested special librarians to build stronger libraries through service orientation and user involvement.

About Current Contents on Diskette

Current Contents on Diskette is produced by the Institute for Scientific Information (ISI). The diskette version contains the same book and journal coverage as the paper "Current Contents," and significantly improves upon the paper version, as it is searchable as a local computer database. This weekly product contains information from the tables of contents of books and journals. The journals are chosen based on "impact" to the scientific community and represent a core of literature in the disciplines covered. Some versions of *Current Contents on Diskette* are also available with abstracts. Subscribers to this product are sent diskettes on a weekly basis. *Current Contents on Diskette* is available in the following seven subject versions :

- Life Sciences J-1200 (covers 1,200 journal titles)*
- Life Sciences J-600 (covers 600 journal titles)
- Agriculture, Biology & Environmental Sciences*
- Physical, Chemical & Earth Sciences*
- Clinical Medicine *
- Engineering, Technology & Applied Sciences
- Social & Behavioral Sciences

Titles marked with a * are also available in a version which includes author-generated abstracts.

When a subscription is started, the subscriber is provided with the *Current Contents Search & Retrieval Program.* This software allows users to browse, search, view, and print or export. The browsing feature allows users to browse contents of journals or whole disciplines. The searching feature allows users to enter queries based on subject key words, authors of interest, journals of interest, etc. Results of searches can be printed directly or stored as a computer file in a variety of formats. A search strategy can be saved as a profile, thus eliminating the need to re-key the same strategy each week. A profile may contain pages of commands, but all that is necessary to execute these commands are two keystrokes. This software also has a built-in component which uses document delivery services available from ISI.

Current Contents on Diskette can be used on a stand-alone microcomputer or on a local area network. For use on a network, special licensing arrangements must be made with the publisher. Microcomputer versions are available for IBM, Macintosh, and NEC. Licensing agreements stipulate that illegal copies of software and data should not be made, and that conducting SDI searches cannot be done for a fee. There are other stipulations, and these should be examined before beginning to develop a service with this product.

Examining Computer Use By Researchers

As the heart of this service is microcomputer based, it is worthwhile to examine the current use of computers by potential library users. It is important to note that this examination covers all computer use of researchers, not just library-related use. There are a number of significant questions that must be answered. Is there a computer network in place in the organization? Do most researchers have microcomputers on their desks? If so, what type of microcomputers are used most—Macintosh or DOS-based? Are there variations in the size of disk drives used? Do all researchers have access to some type of electronic mail? Do some researchers presently use *Current Contents on Diskette* at their personal work stations? If so, what are their experiences with the product?

The best method to gather this information will vary from organization to organization. It might be helpful to conduct a survey of users. Another technique would be to seek out a computer support person if one is available in your organization. Though this information is important in planning, one should try not to get bogged down. If there are a large number of researchers supported by your library, it might be better to examine a sample of users rather than the entire population. For a group of 100 users, it might suffice to systematically sample every fifth person. This will give a representative picture of computer use without taking too much time.

Once the computer use of researchers has been examined, it is important to look at how the library computer equipment compares to that used by researchers. Typically, a microcomputer with some type of network access is present. The very minimum needed to begin providing this service is a microcomputer and printer. There are a number of variations possible. It is imperative to examine how you, as an information provider, can use computer equipment to communicate with library users. This service can be most easily provided if the special library has electronic mail capabilities within the organization. This need not be Internet access, but access to the user population through electronic mail will speed the mechanics of this service greatly.

Potential Improvements in Document Delivery

If a current awareness service is successful, there should be an increase in need for document delivery, as a typical document delivery service is driven by requests from researchers. It is essential to examine how researchers in your organization are currently finding out about items to request. Information-seeking behavior has been examined in some detail.[6,7,8] In most discussions of this topic, current awareness services offered by libraries play a minor role at best. The service described in this paper is intended to insert the library into a position of increased importance by assuming a much stronger role in driving researchers' information needs. A current awareness service is not intended to replace the way researchers currently find out about information, but it should enhance this process.

Another critical point to examine is the manner in which researchers currently make requests for document delivery. This requesting process might have a heavy impact on the work flow of the library staff. There are questions that should be answered. Does library staff spend much time interpreting requests? Are researchers using forms to request items? What improvement in forms might speed the process? How long does it take to fully process a typical document delivery request? What is the average cost of a document delivery request? How long is the turnaround time for the entire document delivery process?

When these questions have been answered, it is possible to use the data gathered to predict improvements that can be made by using an integrated current awareness/document delivery system. As mentioned earlier, *Current Contents on Diskette* provides a document delivery component built into the product. By using this component, it may be possible to greatly improve your present document delivery service. Just the process of examining data reflecting your current document delivery practices can be quite beneficial in improving the service and integrating it with current awareness. One should compare the data gathered regarding present document delivery with data that can be obtained by testing an integrated current awareness/document delivery service.

Planning to Start the Service

The initial planning steps are to answer the questions posed in the previous sections of this paper. Once a thorough understanding of computer use and document delivery in your organization is gained, a service model can be developed. Once this model has been developed, a sample population can be chosen to test it. Information gained from this test can be used to refine the model into a working service.

Testing a service model against a sample population is crucial. The sample population should be chosen to represent the entire user population. It is important to communicate to researchers in this sample that they are being used simply to test the method, and that there will probably be many refinements made to arrive at a working service.

Using data from the test sample, it is possible to predict fairly accurately what will be required to offer the service to the entire population. If the test data indicates that the service model cannot be offered with existing resources, extra support from the organization should be gained or the model should be changed. Important data to examine are staff time used, researcher time saved, researcher satisfaction, potential cost increases to the organization, potential cost savings to the organization, and equipment needs of the library.

Once the final service model is ready to be offered, it is time to start advertising. At the onset, the workload will be heaviest on upper level library staff. The process of setting up profiles is time-consuming and requires a thorough knowledge of researcher interests and software application. After profiles have been set up, the mechanics of the service can be transferred to the least expensive method of getting the job done. This is when care must be taken to ensure that time-saving measures are taken. Anything that can be automated should be automated if it saves time. See descriptions of "alias" and "macro" given later in this paper for examples of time-saving measures.

Description of a Working Service

The service described here has been offered to faculty members in the Physics Department and the Earth & Atmospheric Sciences Department at Purdue University since December 1991. The library system at Purdue University is decentralized, and has 15 departmental libraries. Due to their sizes and the research interests of the population served, the Physics Library and the Earth & Atmospheric Sciences Library are essentially special libraries in a university environment. Reaction to the service from participants has been extremely favorable. The core of this service is based on a collection of personalized researcher interest profiles. These profiles are run against weekly updates of the *Current Contents On Diskette for the Physical, Chemical and Earth Sciences* database, with some selectively run against the *Life Sciences 1200* version. Results from each weekly update are transferred to researchers by electronic mail.

Participants in this service do not currently receive abstracts. The number of citations received each week varies from around five to 50, depending on the participant's profile and what was published that week. Participants are encouraged to change their profiles as their interests change, but much attention is paid to setting the initial profile to satisfy researchers' information needs. Approximately 35 faculty members have individual profiles. A number of the profile results are sent to multiple recipients. As 35 out of approximately 100 members have chosen to participate, this service is being provided to approximately 35 percent of eligible researchers. The number of participants continues to grow. *Current Contents on Diskette* is available for public searching in the library, but faculty members do not routinely use the product.

Setting up the Profiles

The most complicated aspect of beginning this service is creating the individual researcher interest profiles. As each profile is personalized to an individual researcher, time must be allotted to schedule initial meetings and review sessions with researchers. A standard form was made to facilitate the creation of profiles. This form contains a simple explanation of the service, and a few sample profiles are provided to help researchers understand the method used in building profiles. Researchers provide their e-mail addresses and are invited to have copies of their results sent to others. The form also contains a short survey that gathers data on library use, information seeking in general, and use of electronic mail.

Profiles in this service are based on searching for specific authors and subject key words. The subject key words are not from a controlled vocabulary, but are true subject key words.

It takes 15 to 30 minutes for a researcher to complete the form. After it is complete, a short meeting is scheduled with a librarian to formalize the profile and discuss methods for refining the profile in the future. The profile is then entered and saved by the librarian and run against six weeks of the database. The results of the six-week interval allow the researcher to examine what will be received in a typical week and recommend adjustments to the profile. The process of entering and saving the profile takes only minutes, but the preliminary work necessary to create the profile often takes nearly an hour. Once these adjustments have been made, the researcher need only review the weekly results and then apply the document delivery services of the library.

Publicizing the service is important. Sending out the initial forms is prefaced by announcements at faculty meetings. After forms are sent and researchers who desire to participate respond, a second round of publicity is done via electronic mail. The electronic publicity method seems to reach people more directly, as it includes a sample of the type of report participants might receive each week. It is certainly cheaper than using paper.

Mechanics of the Service

Each participating researcher is assigned one floppy diskette, which contains the personalized profile and is also used to store the downloaded results of each weekly update. Diskettes are searched against the weekly database in an assembly line fashion. Results are saved in ASCII text format, which is a good choice for electronic mail. Researchers are given a choice between full or shorter format when beginning the service. Full format includes all fields contained in the *Current Contents on Diskette* records, while the short format is a bibliographic citation only. Most researchers prefer the short format. Once the parameters for saving a file are set, they remain the same for all following diskettes. Each resulting file has the same name which identifies the specific issue searched. Once all diskettes have been searched, they are once again used in assembly line fashion to e-mail results to participants, which is done by simply uploading an ASCII file to the participant's electronic address. Care was taken to assign an "alias" to each address to eliminate unnecessary keystrokes. This process makes each address no more than two characters in length. As some e-mail addresses can be 40 characters in length before alias creation, the time saved by eliminating excess keystrokes is significant. One alias can also be made for multiple recipients, which saves even more time. This means that an e-mail message, the weekly report in this case, can be sent to a list of many people with only a few keystrokes. Macros are also used to save key stroking time. A generic message is used as a subject heading for each weekly report. A subject heading is a short description of the message which can be viewed without viewing the entire message. Another generic message is used to inform researchers that no citations were found in a particular week. Using macros allows such often repeated messages to be assigned to one keystroke, thus saving time. Once the weekly update has been sent, the ASCII file is erased to eliminate confusion. If a researcher notifies the library of an impending trip, the files can be saved on diskette. This accumulation of files is then sent, assuring the researcher is kept up to date without cluttering the mailbox.

This process is repeated on a weekly basis. For approximately 40 researchers, the time spent mechanically performing the searching and mailing is less than two hours per week. The process described above is currently performed by a clerical worker who has very little library experience. It took about two hours to train this staff member to perform these tasks proficiently. Care was taken to assure minimal keystrokes and changes in mechanics. Experience has shown that this investment of two hours per week has had a very strong positive impact on both the library and participating researchers.

The costs incurred to provide this service were minimal, as existing computer hardware and personnel were used, and the only extra expenditure was for the subscription to *Current Contents on Diskette*. Personnel was relocated to do the mechanical searching and mailing.

Evaluation of the Service

A survey of this service was conducted to assess its success in fulfilling user needs and to plan for future enhancements of the service. The survey was sent to 38 service recipients via electronic mail. These recipients had participated in the service for the longest time period. Twenty-three responses were received for a response rate of 61 percent. The results of this evaluation are summarized below.

A. Has the service made you more aware of current literature in your field?
   Often = 82%
   Sometimes = 14%
   Never = 5%

B. Has the service caused you to use the library and its services to a greater extent?
   Often = 35%
   Sometimes = 61%
   Never = 4%

C. How pleased are you that this service is offered?
   Extremely = 96%
   Somewhat = 0%
   Not = 4%

D. How would you describe the amount of information that you receive each week?
   Too Much = 26%
   Just Right = 70%
   Too Little = 4%

E. Would you like to receive abstracts of the articles you are alerted to?
   Yes = 22%
   No = 78%

This evaluation was done during an interim period when classes were not in session, which may account for the partial return rate. From the results received, it is apparent that many participants feel that this service makes them more aware of current literature in their fields. Participants are almost unanimously pleased that this service is offered. Most respondents feel that the amount of information they currently receive is adequate, and do not want to have abstracts routed to them as part of their weekly report. This is an important finding in planning future enhancements to the service, as adding abstracts was being considered. This information allows us to predict the amount of extra time it would take to provide abstracts to the portion of participants who desire them. Overall, the evaluation shows that the service is successful as it now exists and provides information for future planning and enhancements.

Applying a Similar Method Elsewhere

The service model described above can be applied as is with a minimal amount of equipment. All that is necessary are a microcomputer with at least 512K RAM, a hard disk, and access to e-mail through a 2400 baud connection. Significant improvements can be made with a faster data transmission. The time spent e-mailing can be cut drastically if there is access to ethernet or other types of high-speed networks. This benefit is realized by the much greater data transmission speed allowed using high-speed networks.

If access to electronic mail is not available, either from the library or from the user, the service could be provided using conventional paper printouts. The time spent printing would be significantly more than the time spent e-mailing, but the printout can be used as a convenient method of requesting document delivery, as there is no need for the researcher to spend time filling out forms. The printed weekly update could be scanned by the researcher and articles of interest could be highlighted. Using e-mail, researchers should be encouraged to make printouts of citations to articles of interest. Allowing researchers to use the printouts as document delivery request forms may greatly streamline the entire process. This is certainly the case if there are problems in interpreting requests from patrons in the current document delivery system. Providing researchers with a means of making easily interpreted requests without filling out time-consuming forms can benefit both researchers and library staff.

Discussion

Starting such a service is labor-intensive for upper level library staff at the beginning. Planning and profile creation can be complex and can require a great deal of initial attention. Once the service is in place, much of the labor should be transferred to lower level staff or automated. Upper level staff will be required to make refinements in profiles as researcher interests change. There will be a continuing need for user education and publicity.

The impact of this type of service on the entire organization is significant. Administration will find it beneficial, as the service allows researchers to become more productive. Busy researchers can keep up-to-date without performing some of the time-consuming mechanics of information discovery and acquisition. Researchers will begin to rely on the current awareness service instead of browsing through print journals. Other forms of information gathering will be enhanced because of the time freed by this service. Such a service, as it covers many disciplines at once, benefits interdisciplinary researchers tremendously. A biophysicist can benefit by having the profile searched against literature in the life sciences and being alerted only to items that are of specific interest. This is literature not commonly encountered by physicists which would probably be overlooked otherwise. Those who participate in such a service may tend to be more productive researchers.[7]

The impact of this service on the library is noticeably positive. As researchers begin to rely on the library to alert them to interesting items, the library becomes a more high-profile and dynamic component, helping to fulfill the organization's research goals. Libraries may also see a revitalized need for many complimentary services, such as document delivery, that have been offered in the past but were perhaps underutilized. The library will make researchers aware of needed items and the library will ultimately supply those items. As researchers become more and more dependent on the library for this valuable service, the library's service will change from what many consider an archival function to one of a necessary component in the research process.

This public relations change will also affect individual library employees in a positive way. The process of creating and maintaining the research interest profile allows for personal contact with individual researchers, and allows the librarian a better chance to discover the true information needs of the organization. This should enhance the librarian's ability to develop collections,[9,10,11,12] learn of opportunities for user instruction, and become a much more active member of the research team in general. Personal experience has shown that this contact brings library matters to the attention of members of the organization who previously did not think much about the library in their daily lives at all. Receiving such an important ongoing service on a weekly basis causes researchers to regard the library as a supportive and respected partner in research.

This service is much cheaper than SDI services available from other sources. A rough comparison, based on receiving 25 citations weekly from SCISEARCH through Dialog versus the service described in this paper, shows that this service costs approximately five percent of the Dialog cost. Costs for this service were based on $12.00 per week in personnel time and $730.00 per year for a subscription to *Current Contents on Diskette*. Costs for the Dialog service were derived from the most recent prices available at the time of writing.[13] Subscribing to other subject portions of the *Current Contents* data files would increase the price of the service described in this paper.

In addition to the current awareness service, subscribing to *Current Contents on Diskette* allows a library to maintain a short run bibliographic database of interdisciplinary science literature. The Multi Issue searching function of *Current Contents on Diskette* allows profiles to be searched against six-week intervals of the database. Repeating the search nine times allows a researcher to discover what has been published in the past year on a subject. This process can be done rather quickly, and my experience has shown that this can be quite helpful as a precursor to a regular on-line literature search covering a much longer time span. Being able to find what has been published on a subject over the past year is also very helpful to students in the university environment.

Conclusion

The effect of a current awareness service is overwhelmingly positive. The cost of providing this service is much less than running SDI searches on commercially available databases. Adjustments may need to be made as expectations and needs of users develop. Once a current awareness service is begun, researchers will start to want and expect more from the services that are already in place. Increased demand may place stress on existing services. There will be more demands placed on librarians who do liaison work, as they will be responsible for creating and refining the profiles. There will also be greater demands placed on those who provide user instruction. Researchers will be discovering more publications and will expect access to them. This will increase the demand for existing interlibrary loan and document delivery services. Unforeseen changes in operations may need to be made. Personal experience has shown that even binding schedules may need adjustment. This was demonstrated by a researcher who seldom used the library in the past but suddenly wanted access to journal articles as a result of his participation in the current awareness service. He found that whenever he was alerted to items in certain journals, these journals were often at the bindery. It just happened that the alerting service coincided with the library's predetermined binding schedule. Though this problem was easily rectified, the situation is indicative of unforeseen adjustments that may be needed when a library begins increasing its business. But if successful libraries have anything in common with successful corporations, then increasing business is probably not such a bad thing to do.

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Robert S. Allen is Assistant Professor of Library Science and Head of the Physics and Earth & Atmospheric Sciences Libraries at Purdue University in West Lafayette, IN.

On the Scene

1994/95 Candidates for SLA Office

For President-Elect

JANE I. DYSART

• JANE I. DYSART is a principal of Dysart & Jones Associates, a newly formed consulting company specializing in library and information management and change processes. She is located in Toronto, Ontario, Canada. Prior to setting up this company early in 1993, Dysart spent 17 years as Manager, Information Resources, at Royal Bank of Canada.

Past Employment: Manager, Information Resources, Royal Bank of Canada (1975-93); Librarian, Canadian Standards Association (1974-76).

Education: BSc, University of Toronto (1972); MLS, University of Toronto (1974).

SLA Member Since: 1973.

SLA Chapter Activities: *Toronto Chapter*: Co-Chair, Senior Management Roundtable (1992-94); Representative to the National Summit on Information Policy (1988-92); Representative to Seneca College Advisory Council (1982-88); President-Elect, President, Past-President (1978-81); Program Chair (1975-77); Student Liaison (1974-75).

SLA Division Activities: *Library Management Division*: Fund Development (1993-94); Program Planning for 1993 Cincinnati Conference (1991-93); Nominating Committee (1989-90); *Business and Finance Division*: Awards Committee (1990-91); Membership (1979-80); *Information Technology Division*: member.

SLA Association-level Activities: Meckler Award for Innovations in Technology Committee (1991-93); Nominating Committee (1991-92); Instructor, SLA Continuing Education Program (1989-94); Director (1985-88); Chair, Long Range Planning Committee (1986-87); Chair, 76th Annual SLA Conference Program Planning Committee (1983-85); Chapter Cabinet Chair-Elect & Chair (1980-82); Joint Chapter/Division Cabinet Archives Study Committee (1978-79).

Other Professional Memberships: Editorial Board, *Database Magazine*; Canadian Library Association; Canadian Association of

Special Libraries and Information Services; ASIS, Program Co-Chair, 1990 Conference in Toronto, Seneca College of Applied Arts & Technology, Library Techniques Advisory Committee, member (1981-92).

Awards/Honors: Fellow of the Special Libraries Association (1989); Special Libraries Association, Toronto Chapter Member of the Year (1981).

Publications: Co-author of one book and author of 10 articles. Recently edited the Fall 1993 issue of *Special Libraries*, "Standing in the Future," for the Library Management Division. Publications include: *Business Online: A Canadian Guide*, published by John Wiley & Sons (1989); "CD-ROM products in Canada," in *CD-ROM Enduser* (August 1990); and "Banking and Finance Collections in Canada," in *Special Collections*, vol. 2, no. 3 (Spring 1983).

Other Professional Activities: Taught over 20 continuing education courses for the Special Libraries Association, Medical Library Association, University of Toronto Faculty of Library and Information Science, and Canadian Association of Special Libraries and Information Services. Taught semester courses for the Ryerson Polytechnical Institute Professional Development for Online Searchers program, the Special Libraries course for Seneca College Library Techniques program, as well as numerous lectures at the Faculty of Library and Information Science at the University of Toronto. Has spoken at many SLA Chapter and Division programs and numerous library conferences and functions, including: Online/CD-ROM, Computers in Libraries Canada, National Online, Toronto Association of Law Librarians, Canadian Association of Information Science, 4th International Conference of Geoscience Information, Concordia Library Studies Program, and McGill Online User's Group. Is a founding member of the Canadian Online Conference and is currently Program Chair for Computers in Libraries Canada. On behalf of the Quetico Foundation, participated in the development of the John B. Ridley Library at Quetico Park in 1985 and continues on the Foundation's Library Advisory Committee.


L. SUSAN HAYES

• **L. SUSAN HAYES** is Manager of Information Resources at Encore Computer Corp. in Ft. Lauderdale, FL.

Past Employment: Corporate Librarian, Encore Computer Corp. (1977-92); Reference Librarian and University Archivist, Florida Atlantic University (1973-77).

Education: BA, Albion College (1970), MSLS Wayne State University (1972), SLA Middle Management Institute (1987).

SLA Member Since: 1972.

SLA Chapter Activities: *Michigan Chapter*: student member; *Florida & Caribbean Chapter*: Chair, Government Relations Committee (1992-93); member, Nominating Committee (1992-93); Director (1989-92); Chair, Consultation Committee (1975-76; 1987-89); Secretary (1985-86); Chair, Nominating Committee (1978-79); President-Elect, President, Past-President (1976-79); Bulletin Editor (1976-77); Chair, Membership Committee (1974-75).

SLA Division Activities: *Sci-Tech* (1972-80): Chair, Special Projects (1978-79); *Engineering*: Anniversary Committee (1987-88); Chair-Elect, Chair, Past-Chair (1982-85); Chair, Nominating Committee (1979-82); *Library Management*: Career Guidance Committee (1991-92); *Information Technology*: member; *Business and Finance*: member.

SLA Association-level Activities: Director, SLA Board of Directors (1990-93); Secretary, SLA Board of Directors (1991-92); Chair, Strategic Planning Committee (1991-92); member, Strategic Planning Committee (1990-91); member, Special Committee to Review *Special Libraries* (1990); member, Professional Development Committee (1987-90); Career Advisory Service counselor (1986, 1987, 1989, 1991); Chair, Joint Cabinet Committee on Conference Publications (1983-84).

Other Professional Activities: Adjunct Professor, University of South Florida SLIS; USF SLIS regional advisory council (1992-); Florida State Library Networking Committee (1984-85); special libraries delegate to Florida Conference on Libraries (1979); member, Broward County Library Association, including Treasurer (1978-79); member, Association of Records Managers and Administrators; member, Toastmasters International; seminar speaker for SLA and other groups.

Awards/Honors: Florida & Caribbean Chapter Presidential Citation (1993).

Publications: editor, *Florida Online* newsletter (1982-83); numerous articles in Chapter and Division *Bulletins*; co-author of *Information Surfing* slide presentation.

For Treasurer

Donna A. Scheeder

• Donna A. Scheeder is the Senior Team Leader for Congressional Reference Services at the Congressional Research Service, Library of Congress, Washington, DC.

Past Employment: Congressional Reference Division, Library of Congress Resources Development Specialist (1975-79); Reference Librarian (1970-75); Reference Assistant (1969-70).

Education: BSFS, Georgetown University School of Foreign Service (1969).

SLA Member Since: 1977.

SLA Chapter Activities: *Washington, DC Chapter*: Past-President (1989-90); President (1988-89); First Vice-President/President-Elect (1987-88); Recording Secretary (1983-85); Chair, Scholarship Benefit (1983); Hospitality Chair (1981-82; 1985-87).

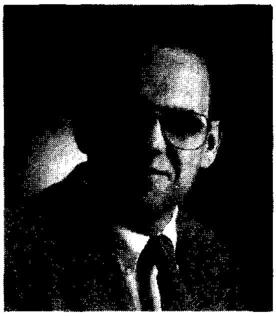
SLA Division Activities: *News Division*: Chair-Elect, Chair (1992-94); Chair, Bylaws Committee (1990-92); member, Awards Committee (1988-89); Chair, Washington, DC Group (1985-87); Chair, Social Science Legislative Reference Section (1980-82).

SLA Association-level Activities: member, International Relations Committee (1991-); Chair, Government Relations Committee (1987-); member, Nominating Committee (1986-87); member, Government Relations Committee (1985-87).

Other Professional Activities: member, Library of Congress Professional Association (1977-); guest lecturer, Investigative Reporters and Editors Conference, "Making the Most of Federal Libraries in the Washington, DC Area," (1993); guest lecturer, The Freedom Foundation, "Government Data On-Line," (1989-); appearances on behalf of SLA on Worldnet and the League of Women Voters radio show; member, Library Advisory Board, Duke Ellington School of the Arts (1984-86).

Publications: guest editor, *Special Libraries* 81(1) (Winter 1990); "The SLA Government Relations Program," *Special Libraries* 79(3) (Summer 1988).

Other Board Experience: member, District of Columbia Civilian Complaint Review Board (April 1992-); member, Board of Directors, Horizons Theater, (1991-); Advisory Neighborhood Commissioner, Capitol Hill (1990-92).



RICHARD E. WALLACE

• RICHARD E. WALLACE is Manager of the Technical Information Center at the A.E. Staley Manufacturing Company in Decatur, IL.

Past Employment: Manager, Information Services, Archer Daniels Midland Company, Decatur, IL (1971-85); Science Librarian, Case Western Reserve University, Cleveland, OH (1970-71); Assistant Supervisor, Library Systems, Deere & Company (1968-70); U.S. Army (1966-68); Engineering Research Reference Librarian, Deere & Company, Moline, IL (1965-66); Reader Services Librarian, Cuyahoga County Public Library, Cleveland, OH (1964-65).

Education: BS (mathematics), Michigan State University (1963); MS, (library science), Case Western Reserve University (1964); MBA, Illinois State University (1977).

SLA Member Since: 1963.

SLA Chapter Activities: *Illinois Chapter*: Board of Directors (1980-82).

SLA Division Activities: *Library Management Division*: Chair, Finance Committee (1989-91); Treasurer (1986-88); *Food, Agriculture & Nutrition Division*: Chair (1975-76); *Business & Finance, Chemistry, Solo Librarians, and Information Technology Divisions*: member.

Association-level Activities: Treasurer (1991-94); Committee on Committees (1988-89); 1982 Conference Program Committee (1980-82); Publisher Relations Committee (1976-80; 1982-84).

Other Professional Activities: Instructor, ILLINET/OCLC Users Group; Illinois Library Association; Illinois Heartland Online Users Group; Rolling Prairie Library System, Board of Directors (1980-84); American Library Association, Oberly Awards Committee (1977-79).

Awards/Honors: SLA Scholarship Award (1963); Phi Beta Mu.

Publications: Editor and contributor, *Food Science & Technology: A Bibliography* (National Agricultural Library, 1978); co-editor of March 1980 issue of *Illinois Libraries*.

For Chapter Cabinet Chair-Elect

SUSAN S. DIMATTIA

• SUSAN S. DIMATTIA is a Business Information Consultant specializing in market research, evaluation of and long-range planning for information centers, staff training and development, and special subject collection development. She is editor of *Corporate Library Update* and *Library Hotline.*

Past Employment: Business Reference Specialist, Suffolk Cooperative Library System, Bellport, NY (1973-74); Business Reference Librarian, Huntington Public Library, NY (1971-73); Head Librarian, Bank of New England, Boston, MA (1965-71).

Education: BA (English/Economics), Wilson College (1964); MLS (Special Library Administration), Simmons College Graduate School of Library and Information Science (1965); MBA (Marketing), University of Connecticut Graduate School of Business Administration (1981).

SLA Member Since: 1966.

SLA Chapter Activities: *Fairfield County Chapter*: Government Relations Chair (1991-94); Past-President and Long Range Planning Chair (1988-89); President (1987-88); President-Elect (1986-87); Public Relations Chair (1985-86); Career Guidance Chair (1984-85); Bulletin Editor (1982-84); Director (1982-83); *Long Island Chapter*: Bulletin Editor (1972-76); *Boston Chapter*: Treasurer (1971).

SLA Division Activities: *Business & Finance Division*: Nominating Committee Chair (1992-94); Past-Chair and Awards Committee Chair (1991-92); Chair (1990-91); Chair-Elect (1989-90); *Library Management Division*: Bulletin Editor (1987-89).

SLA Association-level Activities: Professional Development Committee (1992-94).

Other Professional Memberships and Activities: American Library Association: member and chair of several committees in the Library Administration and Management Association and the Reference and Adult Services Division since 1966; Public Information Office Advisory Committee (1992-94); Awards Committee (1992-94); President, Reference and Adult Services Division (1991-92); Speaker's Network (1991-); Presenter of SLA CE Course, "Adding Value to Corporate Library Services," (1991 & 1992 Annual Conferences); frequent speaker and workshop moderator at SLA Chapter and regional meetings, and instructor at graduate library schools.

Awards/Honors: Alumni Achievement Award, Simmons College Graduate School of Library and Information Science (1989).

Publications: Annual Business Books Roundup, March 15 issue, *Library Journal* (1977-); Guest Editor, *Special Libraries*, Spring 1990, special issue on empowerment; contributor, *Financial Analysts Handbook*, Business One Irwin (1988); Editor, *The Simmons Librarian*, quarterly newsletter of the Simmons College Graduate School of Library and Information Science Alumni Association (1972-78); reviews and articles have appeared in *Library Journal, The Journal of Education for Librarianship, RQ*, and other professional publications.

SANDY SPURLOCK

• SANDY SPURLOCK is Library Unit Supervisor at the Inhalation Toxicology Research Institute in Albuquerque, NM.

Past Employment: Librarian, Engineering Library, Honeywell, Inc., Defense Avionics Systems Division, Albuquerque, NM (1987-92); Science and Engineering Library Planning Coordinator, General Library, University of New Mexico, Albuquerque, NM (1984-87); Assistant Director for Academic, Clinical and Information Services, Medical Center Library, University of New Mexico (1981-84); Director, Health Sciences Libraries, Long Island Jewish-Hillside Medical Center, New Hyde Park, NY (1979-81); Assistant Science Librarian, Science Library, Massachusetts Institute of Technology, Cambridge, MA (1976-79).

Education: BS (Biology), Marietta College (1969); MSLS, Simmons College (1976); MA (Computer and Information Resource Management), Webster University (1993).

SLA Member Since: 1976.

SLA Chapter Activities: *Rio Grande Chapter*: Program Co-Chair for Military Librarians Workshop, Albuquerque, NM (November 1993); Treasurer (1993-); Chair, Employment Committee (1991-); Chair, Long Range Planning Committee (1988-92); President (1987-88); President-Elect (1986-87); member, Nominating Committee (several times).

SLA Division Activities: *Aerospace Division*: Treasurer (1991-93); Secretary (1990).

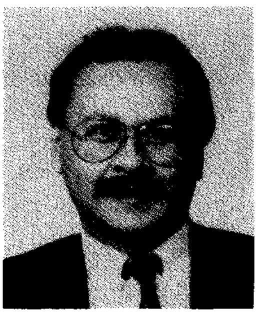
SLA Association-Level Activities: Nominating Committee, (1991-92; Chair, 1991); Scholarship Committee (1987-90; Chair, 1990).

Other Professional Activities: Association for Information and Image Management (1992-); Honeywell Information Network [(1987-92), Program Chair and Host for Annual Meeting, (1991)];

New Mexico Academic and Research Librarians [(1987-), Executive Board Member and Treasurer (1987-89)]; American Cancer Society President of the Board of Directors, Albuquerque Unit (1986-87); New Mexico Library Association [(1983-), Library Development Committee Chair (1987); Newsletter Advertising Coordinator (1988)]; American Library Association (1976-); American Society for Information Science (1976-78, 1992-).

Publications: Several articles and book chapters. The three most recent include "Journal Availability at the University of New Mexico" (co-authored with Jan Derthick Bachmann); *Advances in Serials Management* (1989); "Lester del Rey," in *Reader's Guide to Science Fiction*, ed. by Marilyn Fletcher, Simon & Schuster (1989); and "Selected List of Medical Journals for the General Collection: an Annotated Bibliography," (co-authored with Beatrice Kovacs), *Serials Librarian* (1986).

For Division Cabinet Chair-Elect



FRANK D. LOPEZ

• **FRANK D. LOPEZ** is Team Leader, Technical Library, at Chevron Research and Technology Company in Richmond, CA.

Past Employment: Supervisor, Technical Files, Chevron Research Co. (1990-91); Information Analyst, Chevron Research Co. (1990); Library Supervisor, Chevron Chemical Co. (1984-89); Associate Librarian, Stauffer Chemical Co. (1981-84); Library Director, Palmer College of Chiropractic—West (1980-81); Library Assistant, University of California, San Francisco (1976-80).

Education: BS (Biology), University of San Francisco (1978); MLS, University of California, Berkeley (1979).

SLA Member Since: 1979.

SLA Chapter Activities: *San Francisco Bay Region*: member, Nominating Committee (1992-93); member, Elections Committee (1991-92); Chair, Strategic Planning Committee (1989-90); member, Strategic Planning Committee (1988-89); Chair, Finance Committee (1986-87); Chair, Professional Development (1985-86); member, Professional Development Committee (1983-85).

SLA Division Activities: *Chemistry Division*: Chair (1992-93); Chair-Elect (1991-92); Chair, Government Relations (1990-91); member, Nominating Committee (1989-90); Chair, Logo Committee (1988-89); Division member: *Chemistry, Information Technology, Library Management, Petroleum & Energy Resources, Science & Technology; Diverse Issues Caucus* member.

SLA Association-Level Activities: member, Affirmative Action Committee (1992-93).

Other Professional Activities: member, American Petroleum Institute, Technical Literature Task Force (1993); member, Chevron Libraries Advisory Committee (1985-92); Treasurer, Northern California and Nevada Medical Library Group (1980-82).

Other Professional Memberships: American Chemical Society; American Society for Information Science.

Awards/Honors: SLA Middle Management Institute graduate (1993).

Publications: Articles and write-ups for Chemistry Division *Newsletter* and San Francisco Bay Region Chapter *Bulletin.*

BARBARA M. SPIEGELMAN

• BARBARA M. SPIEGELMAN is Manager of Technical Information and Communication for Westinghouse Electric Corporation's Energy Systems Business Unit.

Past Employment: Manager, Information Resources, Westinghouse Electric Corporation (1989-90); Associate Librarian through Senior Information Specialist, Westinghouse Electric Corporation (1974-89); Project Manager, The Rogers Project, University of Pittsburgh, School of Library and Information Science (1984-85); Technical Writer, Maynard Research Council (1968-70).

Education: BA (English, Education), Chatham College (1968); MLS, University of Pittsburgh (1974).

SLA Member Since: 1983.

SLA Chapter Activities: *Pittsburgh Chapter*: Bulletin Editor (1988-90); member, Nominating Committee (1987-88); Marketing Chair, SLA Winter Meeting (1987); member, Awards Committee (1985-86).

SLA Division Activities: *Library Management Division:* Chair-Elect and Chair (1992-94); Chair, Strategic Planning Committee (1991-93); Chair-Elect and Chair, Marketing Division (1990-92); *Nuclear Science Division*: Local Arrangements Chair, Annual Conference (1990).

Other Professional Activities: member, Industrial Technical Information Managers Group; Chair, University of Pittsburgh School of Library and Information Science Alumni Executive Board. Selected presentations and guest lectures: SLA Northeast Regional Conference, 1993: "TQ Audits: Process for Success"; SLA, 1993 Annual

Conference: "LMD Video Theatre: Using Video to Add Value," "Total Quality Management," "Dealing with Downsizing and Liking It"; University of Pittsburgh School of Library and Information Science: "Managing the Special Library," "Everything You Always Wanted to Know About Marketing and Public Relations in the Special Library or Information Center—But Were Afraid to Ask," "Computers in Today's Libraries"; Pittsburgh Chapter, SLA: "Marketing the Special Library," "AV and the Special Library: Choosing and Using Videotape to Benefit Your Organization"; SLA, Annual Conference, Pittsburgh: "Marketing Library Services: Where to Begin and How to Succeed"; SLA 1992 Great Lakes Regional Conference: "There's Life After Downsizing"; Pennsylvania Library Association Annual Conference, Pittsburgh, 1992: "Total Quality Management in Libraries"; Panel presenter, Pittsburgh Regional Library Center (PRLC) Annual Meeting, 1990: "Libraries and the Internet," "Pathways to the Future"; 75th Anniversary of SLA, State College, 1983: "Effective Use of the Part-Time Professional"; 20th Annual Clinic on Library Applications of Data Processing, University of Illinois, 1983: "Competencies: A Format that Works."

Awards/Honors: Technology Transfer Award, Westinghouse Information Systems Advisory Council (1992); Management Leadership Award, Library Management Division, Special Libraries Association (1990); Leadership Pittsburgh (1989-90); ESBU Resources Quality Achievement Award (1989); Westinghouse Community Service Award (1988).

Publications: (selected): "Relationship Management: Helping Employees Succeed at Change," *Library Management Quarterly* (Winter 1994); "El Cheapo RidesAgain: An Annual Report Format that Won't Cost You an Arm and a Leg," *Library Management Quarterly* (Fall 1992); "Total Quality Management in Libraries: Getting Down to the Real Nitty Gritty," *Library Management Quarterly* (Summer 1992); "Taming the Swap and Shop Monster," *Library Management Quarterly* (Summer 1991); "Building a Marketing Team," *Marketing Library Services* (1989); "Celebrating the Profuse Dr. Seuss," *American Bookseller* (May 1987); "Profiles in Professionalism: Mary Vasilakis," *Sci-Tech News* (1987); "Access to the Neighborhood of Mister Rogers: Creating a Source for Research," simultaneous publication in *Library Journal* and *School Library Journal* (November 1985); Audiovisual productions: "It Means Life," videotape marketing Westinghouse Blood Drive; honored at Annual Meeting, Council of Community Blood Banks, (1988); "World of Information," videotape presenting database capabilities of the ESBU Information Resource Center (1984); "Information Power—The Information Resource Center," six-projector slide show marketing NES Technical Library (1982).

For Director

CHARLENE M. BALDWIN

• CHARLENE M. BALDWIN is a Librarian at the University of Arizona, Tucson, AZ. Appointments at the University of Arizona Library from 1984 to the present include Head Map Librarian, Manager of the Newspaper and Microform Room, and Science-Engineering Librarian.

Past Employment: Chief Reference Librarian/Automation Librarian/Head of Circulation: Lockheed Corporation, Burbank, CA (1980-82); Corporate Librarian, Tetra Tech, Inc., Pasadena, CA (1976-80); Cataloger, University of Ife Library, Ife, Nigeria (1975-76); Librarian, Munger Africana Library, California Institute of Technology, Pasadena, CA (1974-75).

Education: BA (with honors), California State University, Sacramento (1970); AM, Graduate Library School, University of Chicago (1973).

SLA Member: 1977-83; 1984-present.

SLA Chapter Activities: *Southern California Chapter*: member, Program Committee (1981-82); Chair, Community Relations Committee (1982); *Arizona Chapter*: member, International Relations Committee (1992-); Past-President (1989-90); Co-Chair, Long-Range Planning Committee (1989-90); President (1988-89); member, School of Library Science Curriculum Advisory Committee (1988-89; 1992-93); President-Elect (1987-88); Chair, Positive Action/Affirmative Action Committee (1987-89); member, SLA/GLS Colleague Program (1987-90); member, By-laws Committee (1987-88); NTIS Liaison Representative (1986-87); Professional Development Officer (1985-87); member, Nominating Committee (1985-86).

SLA Division Activities: *Information Technology Division*: member; Program Planner, 1991 San Antonio Annual Conference (1989-1991); Chair, Government Information Section (1989-1990); Chair-Elect, Government Information Section (1988-1989). *Geography & Map Division*: member. *News Division*: member.

SLA Caucus Activities: International Information Exchange Caucus: founding member.

SLA Association-level Activities: SLA Awards Committee (1992-93); Board of Directors (1991-93); Chapter Cabinet Chair-Elect and Chair (1991-93); DACOLT Planning Committee (1991-93); H.W. Wilson Award Committee (1988-89).

Other Professional Activities: Transborder Library Forum/Foro Binacional de Bibliotecas, member, Steering Committee (1989-93);

International Librarianship Round Table: Chair (1989-90), Program Committee (1988-89), founding member (1988); Arizona State Library Association (1987-); Arizona Online User Group [(1984-) Chair (1985-86); Program Chair (1984-85)]; Friends of the Caltech Libraries [(1979-83): founding member; member, Board of Directors, Vice President (1982)]; American Library Association [(1971-75; 1987-93): member, Map and Geography Round Table (1989-90); member, International Relations Round Table (1988-90)].

Awards/Honors: Phi Kappa Phi; *Who's Who of American Women*; *Who's Who Worldwide; Directory of Librarians in International Development*; *Directory of Library and Informational Professionals*; *ALA Librarian Career Resource Network Directory.*

Selected Publications: Interests include automation, international librarianship, and bibliography. Authored over 70 publications and presentations, including monographs, journal articles, research reports, newsletter articles, book reviews, instructional manuals, and in-house bibliographies. Presentations to Chapter, regional, national, and international organizations have been published in conference proceedings and other sources.

Most recent works include "Automation and Librarianship: Three Issues," *Bulletin*, SLA Geography and Map Division, No. 173 (September 1993), pp. 24-28 (joint author); "Advances in Map Librarianship—Automation Now and Into the Future," presented at the ASLA Annual Conference, Phoenix, AZ (Oct. 1992), and published in the *ASLA College and Universities Libraries Division Contributed Papers* (1992), pp. 19-27 (joint author); "Arizona Promotes International Librarianship," *Special Libraries* (82)3 (Summer 1991), pp. 203-205; "Information Management Projects in Developing Countries: The Challenge of Working with Varying Levels of Infrastructure" (joint author), presented at the IAALD 1990 VIII World Congress, Budapest, Hungary (May 1990), and published in its *Proceedings*, "Information Access in Niger: Development of a West African Special Library," *Special Libraries* (80)1 (Winter 1989), 31-38; "From Stacks to Stacks: A Look at Information Management in Developing Countries," presented at the Annual Business Meeting of the Arizona Chapter, SLA, May 1990.

ROBERT BELLANTI

• **ROBERT BELLANTI** is Head of the Management Library, University of California, Los Angeles, CA.

Past Employment: Associate Director, Pacific Southwest Regional Medical Library Service, Biomedical Library, UCLA (1979-82); Head, Interlibrary Loan Division, Biomedical Library, UCLA (1974-79); Serials Librarian, University of Nevada, Las Vegas (1969-73).

Education: BA (Psychology), University of Nevada, Las Vegas (1968); ML, University of Washington (1969); MBA, UCLA (1981).

SLA Member Since: 1982.

SLA Chapter Activities: *Southern California Chapter*: SLA Winter Meeting, Local Arrangements Committee (1992-93); Strategic Planning Committee (1991-92); Area Meeting Coordinator (1991-92); Nominating Committee (1991-92); Chapter Representative to the California Library Networking Task Force, Network Steering Group (1990); President (1989-90); President-Elect & Program Chair (1988-89); Hospitality Committee, Chair (1987-88); Management Seminar Planning Committee (1985-86); Ad Hoc Committee on Chapter Finances (1985-86); Treasurer (1984-85; 1986-87); Ad Hoc Committee on Long Range Planning (1983-84).

SLA Division Activities: *Business & Finance Division*: Chair (1992-93); Chair-Elect (1991-92); Director (1988-89; 1989-90); College and University Business Libraries Roundtable Coordinator (1985).

SLA Association Level Activities: Special Committee on Fund Development (1993); Joint Cabinet Task Force on DACOLT and Winter Meeting Structure (1989-90).

Other Professional Activities: California Academic and Research Librarians (CARL): Program Committee (1984; 1987-88), Nominating Committee Chair (1987); Academic Business Librarians Exchange (a CARL Interest Group): Co-founder and Chair (1983-85); Librarians Association of the University of California (LAUC): Nominating Committee (1988), President (1985-86), President-Elect and Chair, Research Committee (1984-85); Librarians Association of the University of California, Los Angeles Division (LAUC-LA): Various offices and committees, including Chair (1982-83), Chair-Elect (1981-82), Secretary (1978).

Awards/Honors: Special Libraries Association, Southern California Chapter: Continuous Service Award (1989).

Publications: "Excellence in Library Management," special issue of *Journal of Library Administration*, vol. 6, no. 3 (Fall 1985); co-author "Business and Management," in *Selection of Library Materials In Applied and Interdisciplinary Fields*, ed. by Beth J. Shapiro and John Whaley, Chicago: ALA (1987); contributor, *Business Journals of the United States*, ed. by William Fisher, New York: Greenwood Press (1991). Other publications inlcude "President's Remarks" column in the *Newsletter* of the SLA Southern California Chapter (nine issues) and "Notes from the Chair" column in the *Bulletin* of the Business & Finance Division (three issues).

COLIN M. MCQUILLAN

• COLIN M. MCQUILLAN is the Manager of the GE Investments Research Library in Stamford, CT. In addition to managing the GE Investments Research Library, he is President, McQuillan Information Services, an information brokerage firm providing research and consulting and specializing in marketing/business research and consulting on optical information systems.

Past Employment: Coordinator of Library Services, WNET/13 Research Library (Public Television NYC), (1985-87); Information Specialist, WNET/13 Research Library (1982-85); Library Assistant, WNET/13 Research Library (1980-82).

Education: BA (English), Fairfield University (1976); MA (Communications), Fairfield University (1978); MS (Library & Information Science), Pratt Institute (1987).

SLA Member Since: 1986.

SLA Chapter Activities: *Fairfield County Chapter*: Fundraising (1993-94), President (1991-92); Professional Development Chair (1989-91); Chair, Salary Survey Committee (1991); *New York Chapter*: Speaker, Information Technology Meeting (1992).

SLA Division Activities: *Library Management Division:* Fundraising (1993-94).

SLA Association-Level Activities: None.

Other Professional Activities: Speaker, National Online Meeting (1992); Judge, Dow Jones Essay Contest (1991); Acquisitions Reviewer, Business One Irwin (1991-); *Library Journal*, "Special Libraries: The Next Decade" Focus Group (1990); Speaker, Financial Investment Management Conference (1989).

Awards/Honors: Management Leadership Award, SLA Library Management Division (1992); Disclosure Achievement Award, SLA Business & Finance Division (1990); GE Management Award (1988, 1989, 1990).

Publications: Forward, *Business One Irwin Investment Almanac* (1993); *National Online Meetinq Proceedings* (1992), "Customer Service: Everybody's Business"; SLA Business & Finance *Bulletin*, "The Librarian as a Revolutionary," (Winter 1991); numerous Chapter bulletin articles.

HOPE N. TILLMAN

• HOPE N. TILLMAN is the Director of Libraries at Babson College, Babson Park, MA.

Past Employment: Assistant Director for Public Services and Access, Tufts University Arts and Sciences Library, Medford, MA (1990-91); Head of Reference Services, Tufts University Arts and Sciences Library, Medford, MA (1989-90); Coordinator of Information Services, Rider College Library, Lawrenceville, NJ (1982-89); Reference Librarian, Rider College Library, Lawrenceville, NJ (1971-82); Branch Librarian, Trenton Public Library, Trenton, NJ (1968-69); Library Trainee, Free Library of Philadelphia, Philadelphia, PA (1965); Special Librarian, Fels Institute of Local and State Government, University of Pennsylvania, Philadelphia, PA (1963-64).

Education: BA (English), University of Pennsylvania, Philadelphia, PA (1964); MLS, Rutgers University Graduate School of Library Service, New Brunswick, NJ (1966); MBA, Rider College School of Business Administration, Lawrenceville, NJ (1979). Also attended Middlebury College and Goucher College.

SLA Member Since: 1974.

SLA Chapter Activities: *Boston Chapter*: President (1993-94); List Manager (1993-94); President-Elect (1992-93); *Princeton-Trenton Chapter*: Chair of the 20th Anniversary Commitee (1987); Director (1985-86); President (1984-85); President-Elect (1983-84); Chair, Networking Committee (1982-83); Chair, Hospitality Committee (1982-83; 1980-81); Business Manager, *Bulletin* (1981-82); Chair, Nominating Committee (1978-79).

SLA Division Activities: *Education Division*: Chair, Nominating Committee (1992-93); Past Chair and Membership Chair (1989-90); Chair (1988-89); Chair-Elect (1987-88); Editor, *Education Libraries* (1985-88, 1990); *Information Technology Division*: List Manager (1993-94); Chair, Networking Section (1992-93); liaison from SLA Networking Committee (1991-92); member, *Business & Finance, Geography and Map*, and *Library Management Divisions.*

Association-level Activities: Strategic Planning Committee (1993-94); Chair, Networking Committee (1990-93); Representative to Library of Congress Network Advisory Committee (1990-92); Long Range Planning Committee, Chapter and Division Programming Task Force (1984-85).

Awards/Honors: Beta Phi Mu; Biographical listing in *Who's Who of American Women, Directory of Library and Information Professionals, Who's Who in American Education;* Education Division/SLA Award for Professional Excellence (1992).

Other Professional Activities: ALA; BAABL (Boston Area

Academic Business Librarians); NENON, Chair of the Information Technology Committee (1990-92).

Publications: "The Internet: Use it Now!" *SpeciaList* 16(3) (March 1993) p. 1, 3; *Special Librarians and the Internet: Use, Training and the Future* (with Sharyn J. Ladner) Washington, D.C.: Special Libraries Association (1993); Co-authored with Sharyn J. Ladner a number of articles and a book chapter on their 1991 and 1992 surveys of special librarians' use of the Internet. Has presented many programs at Annual Conferences and SLA Chapter meetings, including a CE course, most recently on the topics of the Internet and the library as an information utility.

IFLA 1993: The Universal Library: Libraries as Centers for the Global Availability of Information

by Emily R. Mobley
SLA Delegate, IFLA

The fireworks for delegates were real and exploded overhead in cascades of magnificent color during a reception in the Poble Espanol. Thus ended another late evening of consuming tapas, Spanish champagne, and professional networking after a full day of meetings. Barcelona, Spain was the host city for the 59th International Federation of Library Associations and Institutions (IFLA) Council and General Conference held August 22-28, 1993. Over 2,700 delegates from around the world attended. The American delegation was the largest after that of Spain, and Special Libraries Association members were well-represented in overall numbers and in those giving papers and assuming elected office in sections and round tables.

The Conference theme, "The Universal Library, Libraries as Centers for the Global Availability of Information," inspired sessions on networking, electronic access, document delivery, copyright, electronic publishing, and management of information. The program choices seemed to be more abundant and substantive than in earlier years, and the exhibits were also well done. Automated systems and computers dominated the exhibition space, reminding attendees that the current issues and challenges in library and information science are global and that we speak a common language when we discuss the future of information access.

The Council, which meets biennially to vote on officers, dues, and other business, met twice in Barcelona. Robert Wedgeworth, Interim University Librarian at Illinois and IFLA President, opened the Council meeting with a call for IFLA to engage in long-range planning in order to avoid repeating mistakes of the past. The recent events in the world, particularly those in Eastern Europe and the Soviet Union, have had a significant impact not only on global political relations but also on IFLA. The results of those events, with their attending financial and monetary chaos, have had a deleterious impact upon IFLA finances. A great number of members could not and/or did not pay dues, which meant that IFLA had to dip into its reserves, and 113 members were scheduled for formal deletion at this Council meeting due to non-payment of dues. The dues policy requires that members who let their memberships lapse must pay the accumulated arrears before becoming members in good standing again. However, due to the impact of this policy, the Council approved a motion to temporarily set aside the IFLA statutes concerning dues payment and offer to all IFLA members scheduled for deletion in Barcelona the option to apply for a moratorium effective when membership dues for 1993 have been paid in full, but before December 31, 1993. The Council also approved a motion to raise the dues of Personal Affiliates from NLG 150 to NLG 200 in 1994.

Changes in procedural rules to provide better focus for IFLA's professional work by disbanding program management committees, preventing overlap, and bringing groups closer together were approved by the Council.

The Secretary General's report noted the need for a strong membership base. Although the organization averages about 1,300 members and new members outnumber those leaving, a stable membership is not enough. A stronger membership base and diversity in representation is needed. Therefore, a membership campaign will be mounted where regional offices will play a key role in recruiting new members. The report also noted that IFLA is moving into the modern day, as the Secretary General now can be reached via e-mail. There is, however, cautious optimism and IFLA is expected to end the year with a balanced budget.

David W.G. Clements, outgoing Chair of the Professional Board, stated in his report that the role of the Professional Board is to oversee all professional programs and activities and to advise the Executive Committee. During a retreat earlier in the year, the Board looked at the strengths, weaknesses, threats, and opportunities to professional programs. They will now look at the actions needed for the next medium-term program. The issue of whether IFLA should continue to have annual conferences is still under discussion, and has been left unresolved for a number of years.

Russell Bowden reported that the Publications Committee looked at the financial viability of IFLA publications and identified gaps in the market. He noted that there is a need to obtain sponsors to get IFLA publications to Third World countries. The Committee is planning to recommend the cessation of the *IFLA Annual* and requests comments on this action. With the cessation of this publication, two additional issues of the IFLA *Journal* would be published.

Nancy John, Chair of the Copyright Committee, noted the accomplishments of the Committee, such as the commissioning of five articles, two of which have been published, and the workshop on copyright issues held in New Delhi, India. She said the Committee needs to work with other organizations and to make the voice of library users heard in other UNESCO organizations. The Committee's recommendation that IFLA appoint a permanent copyright adviser was approved and the adviser was appointed. A series of brochures on copyright and intellectual property rights is planned, along with a 1996 pre-conference in Beijing, China.

A lengthy report on President Wedgeworth's fact-finding mission in South Africa was given by A.O. Banjo of Nigeria, the leader of the mission, which was funded by the British Council. The main conclusions were: (1) the South African social context is better, but legacies of past policies remain and are likely to persist in the interim; (2) services are improving but are being undermined by various groups and financial conditions; and (3) there are few black professionals, most of whom are at the lower levels of their organizations. Their advancement is undermined by the disparity of education; and (4) there is a need for an honest broker in facilitating relations and that IFLA should play that role. There are a number of recommendations regarding IFLA's role in helping to change conditions in South Africa. None of the recommendations were acted upon; the report was simply presented for information at this meeting. It will be distributed and written comments from the IFLA membership are encouraged.

Three people were elected to the Executive Board. Russell Bowden (United Kingdom), was re-elected. The Board's new members are Ekaterina U. Genieva (Russia) and Sun Beixin (China). Continuing members of the Executive Board are: Robert Wedgeworth (USA), President; Warren Horton (Australia); Robert D. Stueart (USA); Maija-Eeva Tammekann (Finland); and Marta Terry (Cuba). Ian Johnson (United Kingdom),who succeeds David Clements as Chair of the Professional Board, also sits on the Executive Board. Bowden was re-elected 1st Vice-President, Marta Terry was elected 2nd Vice-President, and Warren Horton was elected Treasurer. These three positions are elected by the Executive Board from among its members.

At the second Council meeting a resolution on the destruction of libraries in Croatia and Bosnia-Herzegovina was passed and two new Round Tables were announced. The Roundtables will address the subjects of women and user education. A new discussion group on Performance Measurement in Academic Libraries was also formed. A number of professional resolutions were received; these will be acted upon later.

The full membership of the Professional Board was also announced at the Board's second meeting. SLA's Nancy Anderson. (USA) is on the Board, which is comprised of the chairs of the eight divisions and an elected chair drawn from the membership of the preceding Board. Lucille Thomas (USA) gave the report of the pre-conference on school libraries and noted that this was the first IFLA preconference on this type of library. A number of awards were announced during this Council meeting, along with the usual formal invitations to the next two IFLA meetings. This rounded out a very full agenda for the Council.

Programs

The programs were numerous and varied, and attendees often had difficulties selecting from the many sessions. Fortunately, all meeting rooms were in close proximity so that one could move among the various selections. From my perspective, the best papers were presented in the session on quality management issues. While some of the information, particularly on Total Quality Management, was quite familiar to those of us experiencing it every day, the discussions on the various applications of quality management was very pertinent and often enlightening. Many of these papers are listed on pages 64 and 65.

Many SLA members are active in IFLA's various working groups, standing committees, round tables, and sections. Reports received in time for this publication follow.

SLA Executive Director David Bender attended the Association of International Libraries meeting held during the IFLA Conference. He learned much about the Association, its general mission, and its focus of activities. The Association formed 13 years ago when a group of librarians came together to discuss how to cope with the huge number of documents being released by various international agencies. This remains the main focus of the group today. The Association also addresses various concerns which face librarians working in international libraries. It appears that most of its active members are from agencies connected to the United Nations or various worldwide organizations. Bender urged the group to share and/or exchange information with SLA's European Chapter and, as appropriate, SLA's International Relations Committee or International Information Exchange Caucus. The meeting also addressed the future of the organization and the need for it, a name change, and how to get librarians positioned into better and more visible roles. No answers surfaced, but the group urged that subgroups be formed within various countries or regions to further discuss the issues.

Bender also reported on the work of the Round Table for the Management of Library Associations, which held one Executive Committee meeting during the Conference. Its agenda focused on the completion of activities which have occurred since the Delhi and Antwerp meetings. These activities include the development of workshops on various aspects of association management reflective of the Guidelines published for the Round Table by UNESCO. Further discussions centered around the assistance provided for the development of library associations around the world. The results of a survey of library associations in Eastern and Middle European countries were also reported. Elections were also held, with Tuula Haavisto of the Finnish Library Association continuing as Secretary, and David Bender elected Chair. During the open meeting, Bender presented a paper, "Taking Control of the Future," which focused on the pleasures and demands of being an activist in a library association. The paper will be published in the Round Table's newsletter.

Nancy Anderson reported on the activities of the IFLA Science and Technology Section. On August 24, just as the program on sci-tech information for non-scientists was about to begin, a bolt of lightning hit the main transformer near Barcelona and knocked out power for three-quarters of Catalonia. After milling around in the dark for several hours, officers cancelled the session and rescheduled it for the following week as part of the workshop, "Charging for Science & Technology Information: Does it Help or Hinder Access?" Both sessions generated considerable discussion, especially on a paper by Suzanne Ward, who described Purdue University's technical information service. SLA members active in the IFLA Sci-Tech Section are Jimmy Ward, who is finishing preparation of the section's *World Survey of Availability of Theses in Science and Technology*; Patricia Yocum, and Nancy Anderson. Anderson has been secretary of the section's Standing Committee for the past four years. This year she was elected Chair of the Standing Committee and Chair of the Coordinating Board for the Special Libraries Division, which includes membership on IFLA's Professional Board.

Martha McPhail reported that the Standing Committee on Education and Training attracted over 100 participants to its program, "Teaching International Librarianship." Four speakers covered the principal research methods used in library and information science, training international librarians, educating across borders, and teaching mathematical/statistical methods in library schools. A workshop held jointly with Libraries Serving Disadvantaged Persons and Libraries for the Blind concerned education of librarians for outreach and service to disabled people. A project of the Standing Committee is coming to fruition with a mid-1994 publication of the revised *World Guide to Library, Archive, and Information Science Associations*. The Committee's 1994 program will examine equivalencies of curricula offered in library science education worldwide. Evelyn Daniels of UNC-Chapel Hill was elected Secretary.

Stanley Kalkus reported that the Social Science Standing Committee held a workshop and a joint open session with the Round Table on Management. The open session addressed library management, with emphasis on total quality management. The workshop was a continuation of previous workshops on new developments in CD-ROM technology.

Ekkehart Seusing of Germany was elected Chair and Kyllikki Ruokonen of Finland was elected Secretary of the Standing Committee. The cessation of the *SSID Liaison Bulletin* was announced, and a proposal was prepared for publishing the *Bibliography of Social Science Information and Documentation Literature* on an annual basis.

Barbara Perry reported on the work of the Statistics Standing Committee. Progress reports were made on three Statistics Committee projects. The newest project will interest the American library community—it proposes to identify a standard list of recommended statistical indicators for a library's electronic resources/services. The draft presented in Barcelona is being reviewed by interested parties. A fuller version of the original paper will be presented during the 1994 IFLA Conference. The second project deals with the publication of pricing trends in nations worldwide. Frederick Lynden of Brown University is handling this multi-year project, to be completed in 1995. The third project is a directory of library statistics agencies. The Committee also sponsored an open meeting which featured three presentations related to statistics and pricing.

Dorothy McGarry reported on the Section on Classification and Indexing. The Guidelines for Subject Authority and Reference Entries were approved and submitted for publication. It is expected that they will be published by October in the UBCIM publication series.

A satellite meeting, "Subject Indexing: Principles and Practices in the '90s" was held in Lisbon, Portugal just prior to the IFLA Conference. The members of the Working Group on Principles Underlying Subject Heading Languages met following the satellite meeting to discuss the underlying principles of the presentations made at the meeting. Section members will also participate in planning an international conference on national bibliographic services to be held in 1997, and in the revision of the "Names of Persons" project. The Section continues to publish an annual newsletter for members and interested parties.

McGarry has served as the Section chair for four years, and was elected the new secretary for the next two years. As a result of the elections this year, the Standing Committee now has members from Canada, Estonia, France, Germany, Iran, Italy, The Netherlands, Norway, Portugal, Senegal, Spain, Sri Lanka, the United Kingdom, and the United States. In addition, it will have corresponding members from Brazil, Croatia, India, and Russia, which will increase the representation of various systems and practices of classification and indexing represented within the Standing Committee.

Papers

The papers listed below may be of particular interest to SLA members. Copies have been forwarded to the Information Resources Center at SLA Headquarters and are available upon request. The numbers in parenthesis refer to the paper number.

New management in Central-Eastern Europe: the effects of political, social and economic changes in the libraries. Viola Batonyi, Hungary. (044)

Automated systems as tools of use studies and management. Abdus Sattar Chaudhry, Saudi Arabia. (023)

Document delivery: a world solution to a world problem? Frederick J. Friend, UK. (031)

Progress Report of the IFLA Programme for UAP and Office for International Lending 1992/93. Graham P. Cornish, UK. (072)

IFLA Universal Dataflow and the Telecommunications Core Programme. Leigh Swain and Paula Tallim, Canada. (127)

National bibliographies on CD-ROM: development of a common approach. Robert Smith, UK. (012)

Satisfying researchers' needs for access to newspapers: are there new solutions to an old problem? Geoffrey Hamilton, UK. (114)

The impact of the electronic information on serials collection management. Hazel Woodward, UK. (085)

Relating quality management to strategic planning. Maurice B. Line, UK. (053)

Can the ISO standards on quality management be useful to libraries, and how? Carl Gustav Johannsen, Denmark. (054)

The quality audit at the Stockholm University Library. Tomas Lidman and Margareta Törngren, Sweden. (055)

Quality management in the Apple Library. Monica Ertel, USA. (056)

Professional responsibilities of librarians and information workers. Russell Bowden, UK. (057)

Purdue University's technical information service: providing information to business. Suzanne M. Ward, USA. (016)

Document delivery: some considerations for the future. Lois Ann Colaianni, USA. (092)

Anticipating the future library: strengthening collaboration and communication among the providers of continuing professional education. Duane E. Webster, USA. (049)

Instruction for networked resources: U.S. experiences. Martin Kesselman and Mary Page, USA. (189)

Online access to United Nations system information. Lilia M. Vázquez, USA. (144)

Concepts of quality and quality management in industry and the service sector. Brian Moores, UK. (141)

Copyright issues related to electronic media. Graham P. Cornish, UK. (148)

Alternatives to CD-ROM: issues and prospects. Edward J. Valauskas, USA. (146)

Full-text and bibliographical databases on CD-ROM in research libraries—costs, services, and technology. Lars Nondal, Denmark. (150)

Connectivity and protocols—the technical side, OSI and TCP/IP FTP, TELNET, SR, ILL, update. Liv A. Holm, Norway. (153)

IFLA 1994

The 60th General Conference of IFLA, "Libraries and Social Development," will be held August 21-28, 1994 in Havana, Cuba. The theme is designed to promote experience-sharing on the role played by libraries in the improvement of living conditions. Subtopics include: libraries, family and society; library policies for social and cultural development; new library technologies for social development; library research and training for social development; library cooperation; library services for disadvantaged persons; and libraries and conservation of the environment. Members interested in attending may contact IFLA Headquarters for registration materials. Please be aware that the U.S. Treasury Department has placed restrictions on Americans traveling to Cuba. The U.S. Association members of IFLA will provide information concerning these restrictions to their members. For this information, contact SLA Headquarters.

Author's Note:

This will be my last IFLA report for Special Libraries *due to the end of my appointment as the SLA delegate. Dorothy McGarry has been appointed the next delegate and you may look forward to her reports in the future. She is very knowledgeable about the workings of IFLA and is a good person to contact for information on getting active in IFLA.*

Emily R. Mobley is Dean of Libraries, Purdue University, and a Past-President of Special Libraries Association. She is the 1993 SLA delegate to IFLA.

Information Vision

The Special Libraries Association
85th Annual Conference
Atlanta, GA
June 11-16, 1994

The challenges of the 21st century are beginning to crystalize and it is time for information professionals to develop and implement an information vision that will enable them to be full-fledged participants in the future. By developing this Information Vision, it is hoped that you will see not only applicable uses, but the means to utilize those uses to complete day-to-day operations, strategic planning, and your professional development.

To assist you, Conference programming will stress such concepts as the need to be innovative, learning to anticipate critical changes, and developing new measures to excellence. This program will be enhanced by vendor exhibits and other Conference activities. Division Conference programmers are requested to make concerted efforts to coordinate their programming in order to provide all Conference attendees a high quality learning experience. You need to be there. As professionals, SLA members must continue their quest for quality and this year's Conference programming will enhance all participants' ability to effectively satisfy the needs of their clientele. Come, join us in Atlanta in 1994 and help us build an INFORMATION VISION for the future!

Atlanta...

One should not be surprised that Atlanta's symbol is the phoenix, the mythical bird that burned itself to ashes and recreated itself again and again. Atlanta, the site of the 1994 SLA Annual Conference, rose from the ashes of the Civil War to become the economic and political capital of Georgia. Few would compare Georgia's thoroughly modern metropolis with the fiery wreck that served as a backdrop for Rhett and Scarlet's passion in *Gone with the Wind* (GWTW). Today's Atlanta is the jewel of the New South: a bastion of bustling, exuberant industry. It is the hub of landmark American companies Coca-Cola, Georgia-Pacific, United Parcel Service, and more recently, Ted Turner's communications empire. And while Turner may own its mythical, celluloid past, Atlanta's present and future is there for everyone to read and experience.

Located on the Chattahoochee River in north central Georgia, Atlanta has a population of more than 391,000. The city's 20-county metropolitan area population has grown to some three million. She was born in 1837 as Terminus, the southern end of the Western & Atlantic Railroad, and grew quickly to become Marthasville in 1842 and Atlanta in 1845.

Rebuilding her railroads after Sherman burned them, she has remained a transportation hub.

Today, Atlanta is a crossroads of three interstate highways, I-20, I-75, and I-85. She boasts the world's largest and sixth busiest air passenger terminal complex, which handled 41.9 million travelers in 1992, 67% of them connecting passengers. Hartsfield Atlanta International Airport also moves more than half a million tons of cargo annually. A major hub for Delta Air Lines, Hartsfield is served by 27 passenger carriers, among them American, British Airways, Continental, Air Jamaica, Japan Airlines, KLM, Lufthansa, Northwest, Swissair, TWA, United, and USAir. Atlanta is also a hub for two major railroads, Norfolk Southern and CSX.

The city's rapid transit system (MARTA) can take you on air-conditioned trains from inside the Hartsfield terminal to within a block or two of the SLA Conference hotels. Her Amtrak station, on Atlanta's main street, Peachtree, is located on a major MARTA bus route, only a few minutes ride from the same MARTA rail line leading downtown. Atlanta is on Amtrak's Crescent line running from Washington, DC to New Orleans, LA.

If you come to Atlanta looking for Tara, the plantation house in GWTW, you will not find it. But you will find at least one GWTW-related museum: the Road to Tara, at the Georgian Terrace on Peachtree Street, and maybe the beginnings of a GWTW theme park. A fund drive is also underway to restore "The Dump," the house including the apartment in which Martha Mitchell wrote much of her famous novel. Civil War-related attractions such as Kennesaw Mountain, Stone Mountain Park, and the Cyclorama are in the Atlanta area also.

You will also find the Martin Luther King Jr. Historic District, including the Nobel Peace prize winner's birthplace, his church, Ebenezer Baptist; the King Center for social change, the APEX black history museum, and the Atlanta-Fulton County public library system's black history research library. Former President Jimmy Carter's library and innovative poverty-fighting Atlanta Project are there, too.

Among other attractions are the Atlanta Symphony Orchestra, Zoo Atlanta, the gold-domed state capitol, The Wren's Nest, Six Flags Over Georgia, The World of Coca-Cola, Underground Atlanta, and the Fernbank Natural History Museum.

The "A" in Atlanta is sometimes referred to as "appetite" and "action." Hundreds of restaurants and a host of international cuisines—from French and Cajun to Korean and Ethiopian—complement the Southern staples for which the region is famous. After hours, the beat goes on all over town, from high brow to hoe down. Atlanta is a capital of culture, with a wide choice of symphony, theater, ballet, opera, and music, from jazz to rhythm and blues. It's also a magnet for aspiring artists in all fields, giving the city an appealing avant garde scene and a lively nighttime allure.

The latest "in" spot is Underground Atlanta, the Rouse Company development that puts the spotlight back on the heart of downtown. The revitalized Underground includes a wide variety of restaurants and nightclubs both above and below street level. It's a lively spot day and night and often the scene of free concerts and other entertainment. The six-square-block complex brims with boutiques featuring coffee beans to fine apparel; "outdoor" vendors offer even more wares from their unique vintage vehicles and street carts.

Atlanta is a southern "Mecca" for shopping mavens, with several of the nation's largest shopping malls and thousands of specialty stores and one-of-a-kind boutiques. Tiffany, Saks, Lord & Taylor, Macy's, and Brooks Brothers rub shoulders with southern mainstays such as Rich's and Neiman-Marcus. But don't neglect the art galleries, antique emporiums, flea markets, discount malls, and quaint village shops throughout the metropolitan region. Many shopping areas are accessible by MARTA.

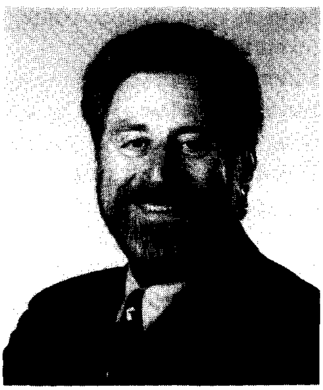
Atlanta's ambience is ever-growing and expanding. Like her weather, it is temperate but changeable—and seldom boring. So bring cool clothes and comfortable shoes and be prepared to enjoy your stay in this city whose abundance of trees and interesting neighborhoods complement its business strength.

Conference Highlights

This year's Annual Conference will beam with brilliant opportunities for members to learn, network, and explore. After you register and pick up your Conference material, make sure you stop by the SLA Exhibit Hall, which will feature the latest and most up-to-date resources available on the market today. More than 400 booths will provide the creative strategies you need to enhance your own "Information Vision." Among the products and services to be featured in this year's exhibit hall are:

- CD-ROM;
- Information storage and retrieval;
- Library automation software;
- Optical publishing;
- Specialized books, periodicals, and directories;
- Library furnishings and suppliers;
- Alerting and search services;
- Government information services;
- Indexing and abstracting services;
- Subscription agencies;
  and much, much more...

General Session Speakers



Richard B. Ross

SLA is pleased to announce that the speaker for General Session I will be Richard B. Ross. Previously a scientist in learning research, a licensed clinical psychologist, an executive, and now a management consultant, Ross brings a wide variety of experiences and skills to his work with public and private sector organizations around the world. His presentation at the Annual Conference will be on the subject of "Visioning."

New research indicates that an organization's ability to learn may be the only sustainable source of competitive advantage. Ross is currently working with clients to build organizations that learn faster and better than they did in the past. This effort to effect organizational change requires leaders to vision—develop new ways of looking at their world (mental models), new roles (designer and developer), new skills (systems thinking), and the ability to use new tools (action science) for managing and leading. The organizational change effort develops a purpose-driven, customer-focused culture that learns faster and better than the competition and teaches executives new ways to conceptualize their organizational worlds.

Richard B. Ross will address the attendees Monday, June 13 at 9:00 a.m.

Charles Garfield

The speaker for General Session II will be Charles Garfield. "My mission is to translate the real lessons of your nation's high achieving organizations and their people into consistent bottom line results," says Garfield, originator of the concept of peak performance. For over 20 years, Garfield has conducted the nation's most respected continuous study of business, high achievers, and their companies. His conclusions form the basis of some of today's most advanced management strategies. Basic to his findings is that regardless of age, educational background or profession, America's peak performers in business share the same set of basic skills and these skills are learnable.

As founder and CEO of SHANTI Project, the most successful organization in its field, Garfield inspired service excellence for peak performers of another kind, patients and families facing life-threatening illness. His emphasis on total quality management and his results-oriented leadership style has made SHANTI an internationally acclaimed volunteer organization. For his work with SHANTI, Garfield was named National Activist of the Year. This is the highest American award given to individuals making voluntary contributions to public service.

Garfield currently serves as Associate Clinical Professor at the University of California Medical School in San Francisco, CA. He is also CEO of the Charles Garfield Group, where he continues his work with leaders in business, health care, and governments worldwide.

Charles Garfield will address Conference attendees on Tuesday, June 14 at 9:00 a.m.

Professional Development Opportunities

SLA is committed to providing professional development programs to meet the needs of both new and experienced special librarians. The Atlanta Annual Conference will again offer attendees a wide variety of continuing education courses specifically tailored to the needs and requirements of the profession. This year's Conference features more than 20 professional development events, including continuing education courses, the Middle Management Institute, and the Executive Management Program.

SLA's professional development programs have earned the reputation among information professionals for high quality programming at a reasonable cost. Take full advantage of your Conference attendance by participating in a professional development program. The following is a partial listing of tentative titles planned for Atlanta. Full course descriptions will be listed in the Preliminary Program mailed to the full membership in March 1994.

Course titles include:

- CD-ROM: Local and Wide Area Networking;
- Reference Triage;
- Special Libraries: Increasing the Information Edge;
- Linking Strategic Objectives to the Budget;
- Researching Eastern European Company Information;
- Internet Access: Implementation Options;
- Fee-Based Services: Entrepreneurship;
- How to Work with Difficult People;
- Tools to Maximize Your Effectiveness;
- How to Work Smarter;
- Management of Information Technologies;
- Inside the PC: The Basics;
- Introduction to Internet: Browsing the Shelves;
- Mainstreaming the Special Library; and more...

Plan Now!

Your participation at SLA's 1994 Annual Conference is beneficial to you and your organization. You will have the opportunity to:

- Learn how the information center will change in the future;
- Discover how you can turn your information center into a profit center;
- Use technology to boost productivity;
- Observe techniques that will help you work better with your staff;
- Meet other special librarians/information professionals to exchange ideas;
- Learn how to market your information center inside your organization;
- Learn techniques to work better with top management; and
- Learn how to solve problems in your information center.

Be on the lookout for the Preliminary Program booklet in March. Non-members interested in SLA's Annual Conference should write to Special Libraries Association, Annual Conference, 1700 Eighteenth Street, NW, Washington, DC 20009-2508 and request a copy of the Preliminary Program.

Preliminary Planning Information

Registration Rates:

Member "Early Bird" (May 1)	$150
Member Full	$190
Member One Day	$110
Retired and Student	$ 85
Nonmember "Early Bird" (May 1)	$245
Nonmember Full	$290
Nonmember One Day	$140

Hotel Accommodations:

Co-Headquarters Hotels

Atlanta Marriott Marquis	S-$119
	D-$129
Atlanta Hilton & Towers*	S-$124
	D-$134
*Towers	S-$164
	D-$174

Additional Properties:

Radisson Hotel Atlanta	S-$ 80
	D-$ 90
Ramada Hotel	S-$ 75
	D-$ 80
Travelodge	S-$ 68
	D-$ 74

To obtain the Conference rates listed above, attendees must use the "Housing Form" that will be available in the Preliminary Program—available in March 1994.

Air Travel Discounts:

Delta Air Lines is the official conference carrier for the Atlanta Annual Conference. To take advantage of Delta's quality service, convenient schedules and special fares: call 1-800-241-6760 and refer to File Number: J1072. Restrictions may apply; seats are limited.

See you in Atlanta!!!

The SLA Salary Survey: Recommended Improvements

by Donald L. Basch and James M. Matarazzo

■ The *SLA Biennial Salary Survey 1993* contains a wealth of useful and interesting information on the salaries and salary trends of special librarians and information personnel. An important aspect of the survey is provided in Tables 1a and 1b and in Figure 1 (hereinafter referred to as SLA 1), which show how changes in mean and median basic annual salaries since 1970 compare to changes in the cost of living as measured by the U.S. Consumer Price Index (CPI).[1] Our major focus is on the misleading picture presented by SLA 1 of the trend in salary increases relative to CPI increases.

Graphical Representation of Salary and Cost of Living Trends

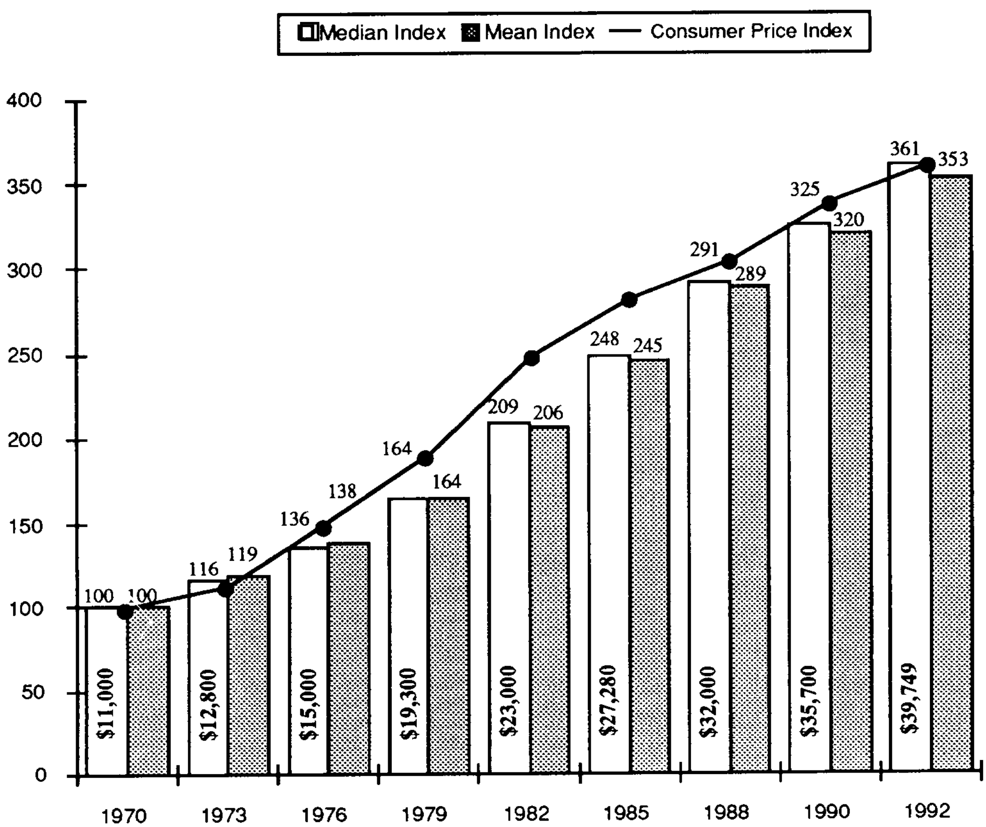
SLA 1 can be defended as technically correct: the data are accurately graphed against the respective vertical axes. Yet, the *incomparability* of the vertical axis for salaries and the vertical axis for the CPI provides the reader with the false impression that from 1967 to 1992, salary increases outstripped increases in the CPI. We have provided an adjustment which is technically correct *and* one which offers the membership an accurate representation of the changes in salaries relative to the CPI since 1970. We achieve this dual purpose by converting the mean salary, median salary, and CPI data to respective indices where the 1970 value for each of these corresponds to a value of 100. The index data are presented in our Table 1 and graphed in our Figure 1 with adjustments.[2]

The index data, both in our Table 1 and when graphed, show salaries and the CPI increasing by roughly similar percentages from 1970 to 1992. With all indices equalling 100 for 1970, the CPI increases to an index value of 362 (a percentage increase of 262%) while median salaries increase to 361 (a 261% increase) and mean salaries increase to 353 (a 253% increase). The table and graph also serve to highlight a distinct break in trend which occurred after 1982: through 1982, percentage increases in the CPI outpaced those for salaries; after 1982, percentage increases in salaries outpaced those for the CPI.

Table 1

	Median Salary	Mean Salary	CPI
Percent Increase 1970–92	261%	253%	262%
Percent Increase 1970–82	109%	106%	149%
Percent Increase 1982–92	73%	71%	45%

Figure 1



Consistency Across Salary Surveys

One of the most valuable features of the SLA Salary Survey across years is the ability to compare tables from year to year. The reader must assume that the data are comparable. This is true only if the authors of the salary surveys have provided internally consistent figures. We point out two areas which should be considered for improvement and clarification.

Treatment of Canadian Salaries

In the *1993 Salary Survey* the salary data for 1979 and earlier are apparently for the U.S. and Canada combined, while the salary data for post-1979 are for the U.S. alone. Thus, the graphed salary data are not internally consistent. The information in SLA Table 5[3] provides no information for 1970 but reveals that: for 1973, the median salary in Canada ($11,500) was lower than the combined U.S. and Canada median salary ($12,800); for 1976, the median salary in Canada ($15,800) was higher than the combined U.S. and Canada median salary ($15,000); and for 1979, the median salary in Canada ($20,000) was higher than the combined U.S. and Canada median salary ($19,300). If one were to exclude the Canadian salaries for years 1973, 1976, and 1979 (in order to make the data comparable to the post-1979 data used in SLA 1), the medians for the U.S. alone would be higher in 1973 and lower in 1976 and 1979 than the combined data actually used. Some adjustment would presumably also be required for 1970 and for the mean salary data graphed in SLA 1.

Use of Consumer Price Index

For the years 1990 and 1992, and apparently for 1988 (although it is not so cited in the *Salary Survey*), the CPI for the *first half* of these years is used while for all previous years the CPI for the *full* year is used. With prices typically increasing during the course of the year, the CPI for the full years 1988, 1990, and 1992 are somewhat higher than for the first halves of these years. The CPI for the full years 1988, 1990, and 1992 are 118.3, 130.7, and 140.3, respectively (compared to the 117.0, 128.6, and 139.2, respectively, used in the SLA Salary Survey). For the sake of consistency (assuming the timing of the salary surveys is similar across the years), it is desirable to use the same basis for the CPI in all the included years. Our Table 1 and Figure 1 use such full-year CPI data.

These suggestions are offered to improve a most useful publication. The most significant recommendation made in this short paper is to correct the strikingly misleading graph presented in the *SLA Biennial Salary Survey of 1993* of the trend in salary increases relative to increases in the CPI.

References

[1] *SLA Biennial Salary Survey 1993*. Washington, DC: Special Libraries Association, 1993. pp. 7, 9.

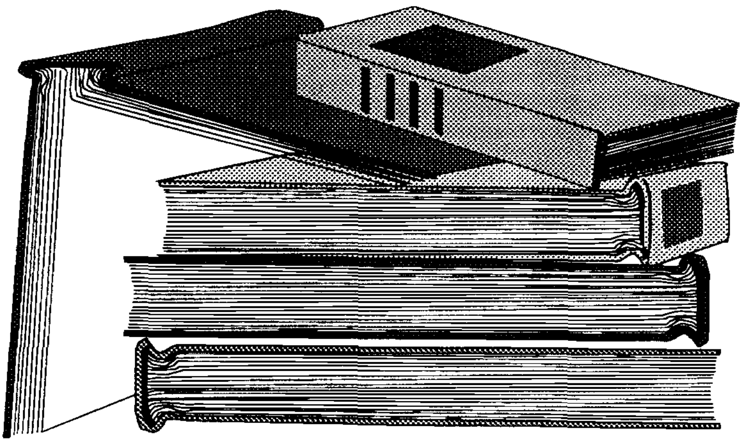
[2] Our Table I and Figure I use full-year data for the CPI in all years. As explained below, SLA 1 uses half-year CPI data for 1988, 1990, and 1992 and uses full-year CPI data for all years prior to 1988.

[3] *SLA Biennial Salary Survey 1993*. p. 11.

Donald L. Basch is Professor of Economics at Simmons College.

James M. Matarazzo is Professor in the Graduate School of Library and Information Science at Simmons College, Boston, MA.

Book Reviews



Library Services for Career Planning, Job Searching, and Employment Opportunities. **Byron Anderson, ed. Binghamton, NY: The Haworth Press, 1992. 183p. ISBN 1-56024-303-1.**

In the past when a person entered a career, he or she was expected to stay in that field until retirement. Most people stayed with the same firm as well. If a person changed careers or "job hopped," that person was considered weird or unstable. Today it is considered normal for people to change careers. Many people may stay at a job for a few years and then leave. Changes in careers or jobs may be caused by company reorganization or downsizing, shifting personal priorities or relocation, but these changes are accepted as a part of today's society.

Many librarians may consider supplying career information and advice to patrons as a part of the activities of college placement centers, state employment offices or private job search firms. This is far from the truth. Libraries can supply more than a copy of *What Color is your Parachute* or a list of books or audiovisual sources on how to write an effective resume or develop successful interviewing skills. The library is often the first place a job hunter may come for advice. People considering career changes may come to libraries to look for information on self-assessment or careers in a specific field; those beginning a job search may look for information on companies in their fields and for information on resume writing, networking or other job search skills; others may be looking for information on a place where they are planning to relocate after a job offer.

Libraries looking to develop their career collections or looking for information on how to offer career services or programming will not find a lot of material on this subject. There are a few articles on developing successful career programs and on selecting materials for libraries, but few books. Byron Anderson's publication works to reduce that deficit of information. (Another new entry is *Serving Job Seekers and Career Changers: A Planning Manual for Public Libraries*, ALA, 1993.)

Anderson's book, which was also published as the *Reference Librarian* #36 (1992), is divided into three parts. Part one includes an overview of career development theory, a discussion of how librarians can make career information more accessible to users, what kind of information is needed, and a discussion of how subject access to career material must be improved so that library users can more easily locate information. Part two provides details on actual programs that integrate career programming and library services. These include programs in academic, special, and public libraries which have served many patron populations, including one where librarians were trained to work with adults in career transition and another which assisted displaced blue collar workers. Part three discusses the development of career collections in libraries, with specific articles on collecting materials for disabled users, for users who are planning to relocate, and on selecting audiovisual or computer software programs for libraries.

The articles are written by both librarians and career development specialists and provide information from outside the library information sphere, which readers will appreciate. Bibliographies are included with each article and the collection development section includes citations of items that librarians may want to purchase to supplement their collections.

Because there is a lack of literature on the field of career development in libraries and a growing patron base that needs information on career issues, this book should be added to the professional collections of libraries that are considering the development of or presently have career development programs and collections they wish to improve. This book should also be a part of library school libraries so students can learn about this important part of librarianship before they enter the professional work force.

Danna C. Bell-Russel, Reference Librarian and Coordinator of Library Instruction at Marymount University in Arlington, VA.

Andrews, Christopher. *The Education of a CD-ROM Publisher.* Wilton, CT: Eight Bit Books. 1993. 205p. ISBN 0-910965-10-2.

When this book arrived, my first question was, "Can this really be what they are asking me to review?" It was about the same size as the paper-bound "Big-Little Books" with the "flip movie" corners I inherited many years ago from my brother.

With just as creative an approach as that early animated book, Andrews begins, in first person style, to unravel the history of the CD-ROM much like an adventure novel. At first you may wonder, "Where is this book headed?," but you soon discover through Andrews' candid style that you have been enthusiastically introduced, via stories, to the pioneers of CD-ROM and a great deal of interesting technical information. All of this is packed into 25 chapters with pictures, charts, and a flowchart, and helps to explain the history of CD-ROMs. The author has provided a section entitled "The People's CD-Glossary" with his "informative definitions" of terms.

Similar to the career path of the author, who began as a librarian, moved into the corporate world and then quickly into multimedia, the book is divided into three sections: "Libraries," "Corporate Publishing," and "Multimedia."

This book is, as the cover suggests, "an insightful (and humorous) history of CD-ROM's rise from libraries to Hollywood." And, as the subtitle suggests, it is "a behind-the-scenes tale of multimedia intrigue." I would recommend it for all libraries—even the public library, where it may help the general reader to discover that a library career may lead in different and interesting directions.

Karen Takle Quinn, full-time doctoral student in Organizational Information Systems on leave from the IBM Corp.

Bierbaum, Esther Green. *Special Libraries in Action: Cases and Crises.* Englewood, CO: Libraries Unlimited, 1993. 114p. ISBN: 0-87287-983-6.

Esther Green Bierbaum's *Special Libraries in Action: Cases and Crises* may give you more questions than answers, but the questions are sure worth the asking.

The core of the book is a compilation of hypothetical case studies, and it is up to you to decide the answers by using your past experiences and readings from the bibliography.

The introduction begins by telling us what special libraries are not: "Special libraries may be defined by exclusion, if not by default: they are libraries or information centers that are not public, academic, or school libraries." In this section, Bierbaum gives a good foundation on the function and characteristics of special libraries.

The author also emphasizes the importance of information and communication or "information for knowledge." Bierbaum calls poster sessions "one of the most effective communication techniques," and devotes time for organizing and evaluating a presentation. An interesting trivia note for those who equate "poster sessions" with grade school science fairs: since its beginnings in the mid-1970s, the poster session has been popular with science associations and is used by medical researchers and social scientists.

The "Crises" section covers everything from professional ethics to collection development to space planning. Each "in-basket exercise" is comprised of memos and letters exchanged by make-believe special librarian Kerry Kerrian (who appears to have an erratic work history) and the people in her organization. Background is given for the organization (with such names as the Goody Too Shoe Corporation and Quark & Charm Inc.), and discussion questions follow the text.

The "Cases" section includes special libraries in different types of settings: corporate, not-for-profit, government, and non-traditional. Basically, you are assigned to create a new library "from the vision out and the floor up."

The case studies get you thinking, but I would have liked some answers. For example, how did Adda Addagate's neighbor know she checked out *AIDS in America* at the library? And how did librarian Kerry Kerrian ever solve this public relations nightmare? I realize there is no one right answer to the case studies (though there are a number of wrong ones), but I wanted to be able to flip to the back of the book and find the answers—just like the puzzle books we had as kids.

If you ever wonder why an author uses one source of information over another, you will find Bierbaum's annotated bibliography quite interesting. She lets you know, for instance, why the 1964 edition of a book is just fine—even though it has a 1991 update. Her comments are terse, but the summaries are entertaining and educational. Like the rest of the book, you won't find any stuffiness here.

The appendix, "Significant Dates and Persons in the History of Special Libraries," is the most concise history of special libraries I've seen. In just five and one-half pages, Bierbaum provides the dates and places that have made libraries "special." The index also proves useful.

Special Libraries in Action would be helpful in the classroom setting, poster session planning sessions, or as a meeting ice-breaker to provoke discussion. It is a refreshing addition to any library administration collection.

Angela K. Titone, Librarian at USA TODAY in Arlington, VA.

STATEMENT
of ownership, management, and circulation
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A. Total no. copies printed (net press run.)	16,528	16,200
B. Paid circulation		
1. Sales through dealers and carriers, street vendors and counter sales	115	115
2. Mail subscriptions	15,749	15,488
C. Total paid circulation	15,864	15,603
D. Free distribution by mail, carrier or other means; sampler, complimentary, other free copies	400	400
E. Total distribution *(sum of C and D)*	16,264	16,003
F. Copies not distributed:		
1. Office use, left over, unaccounted, spoiled after printing	264	197
2. Return from news agents	0	0
G. Total *(Sum of E, F1, and F2—should equal net press run shown in A)*	16,528	16,206

11. I certify that the statements made by me above are correct and complete.

Gail L. Repsher
Editor

Index to Advertisers