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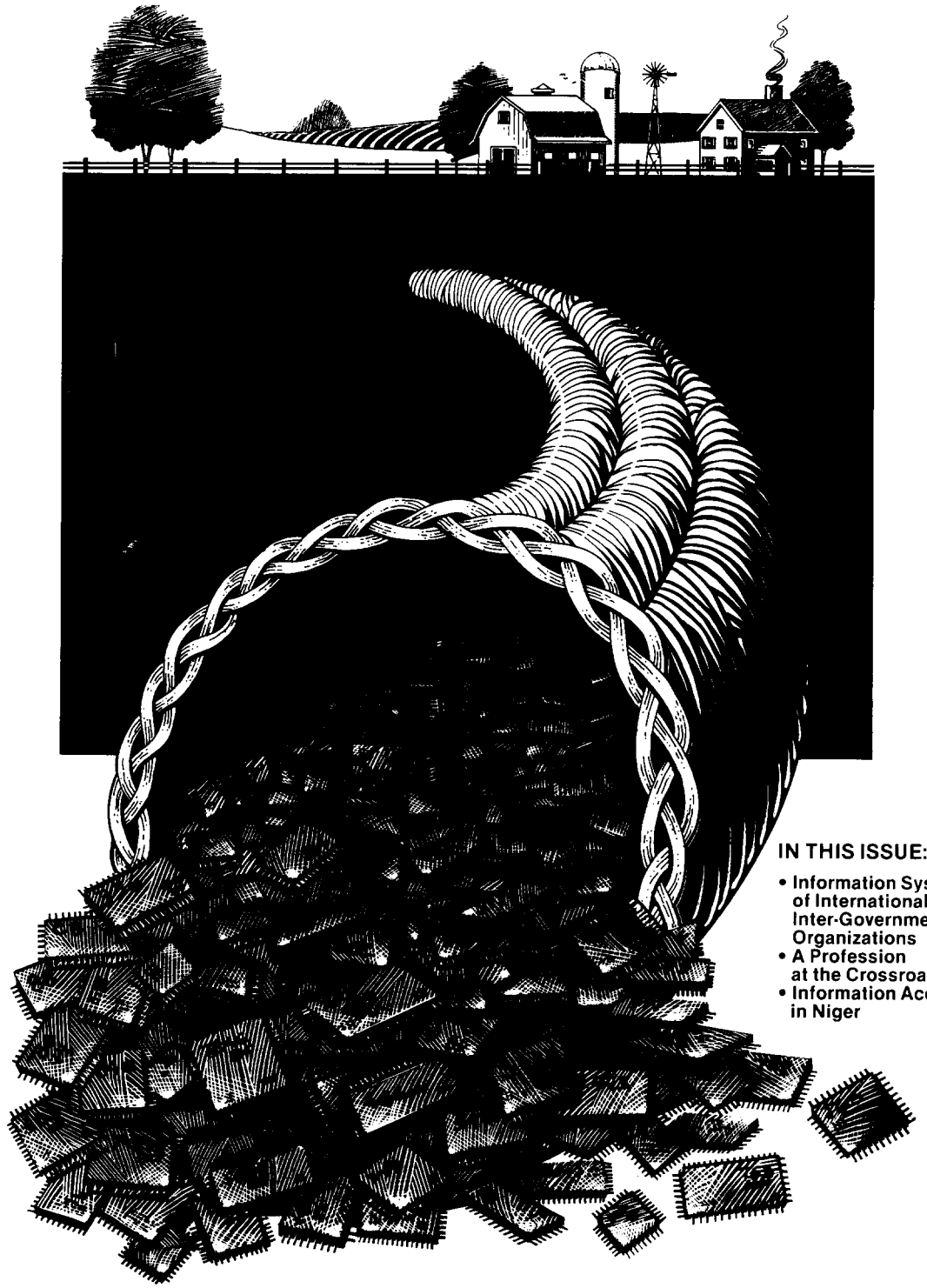
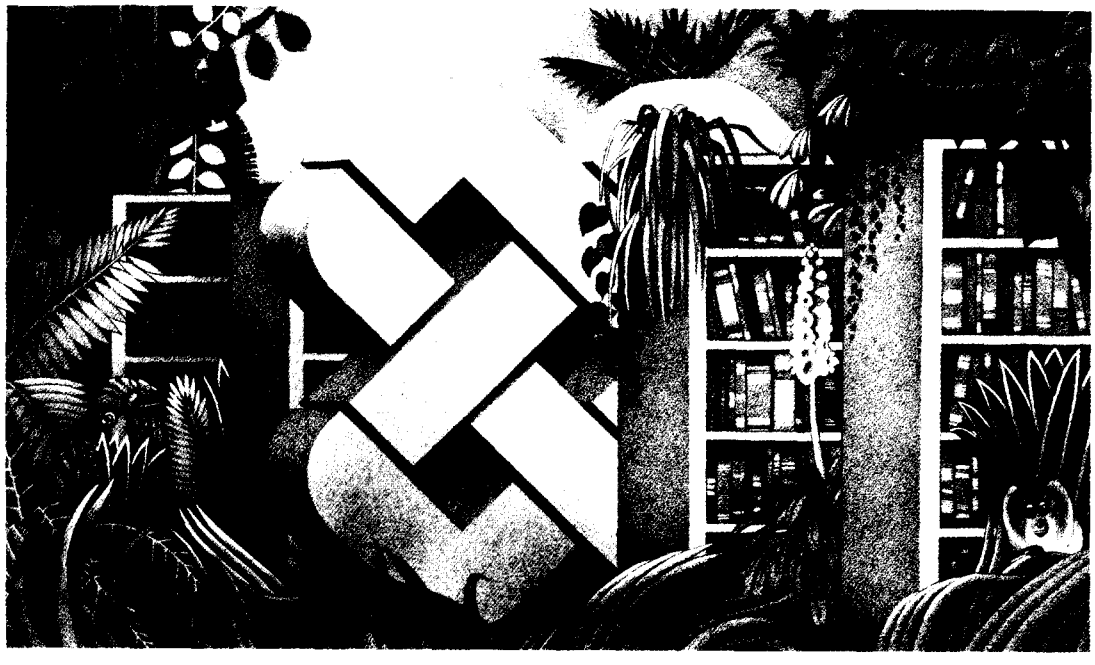


IN THIS ISSUE:

- Information Systems of International Inter-Governmental Organizations
- A Profession at the Crossroads
- Information Access in Niger



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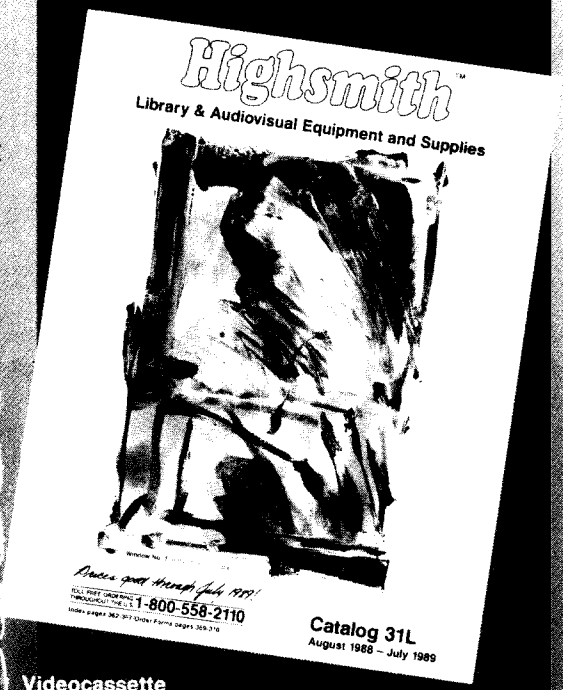

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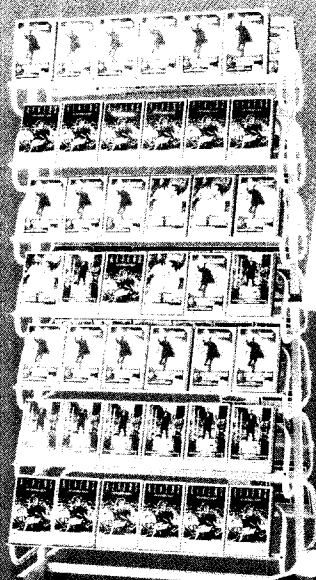
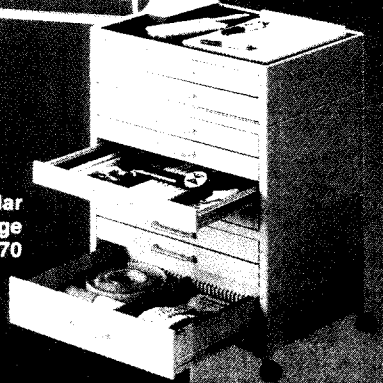
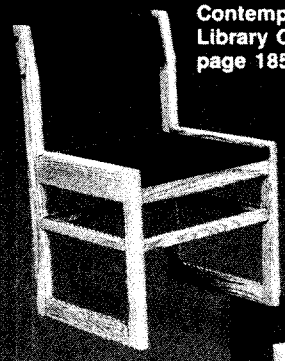


Videocassette Display Rack page 256

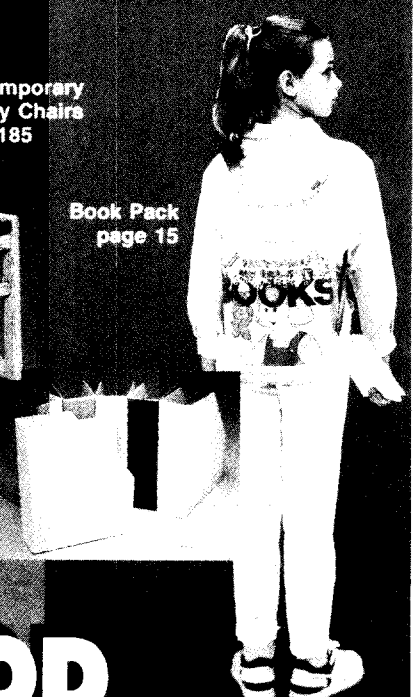


Modular Media Storage page 270



Contemporary Library Chairs page 185

Colorful, Economical Files page 4



Book Pack page 15

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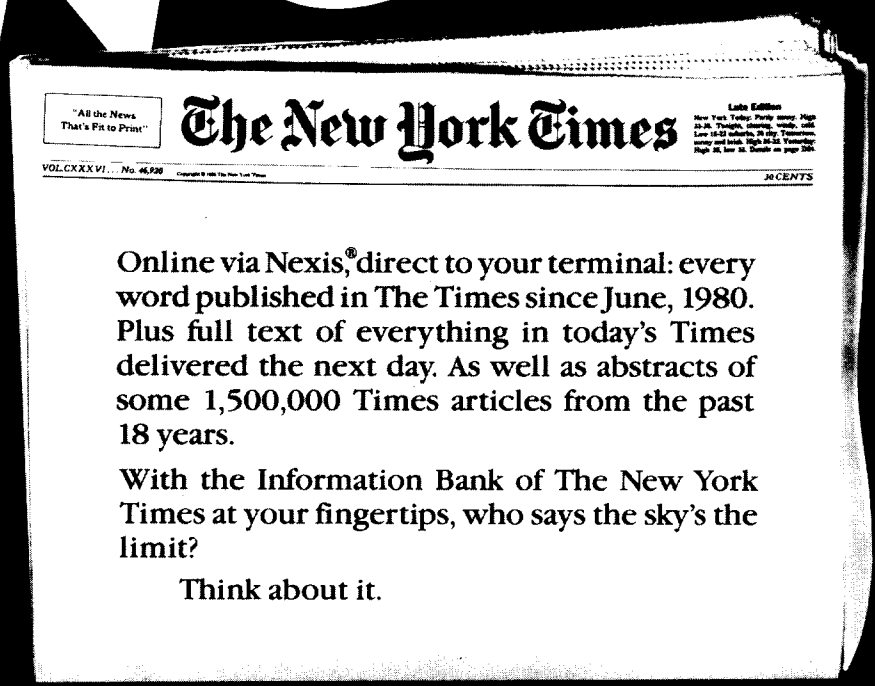

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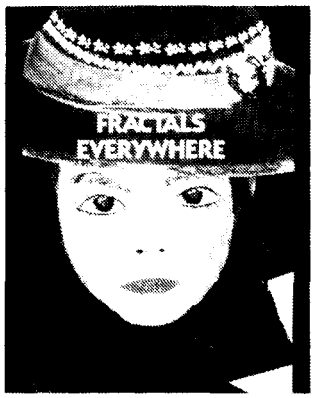

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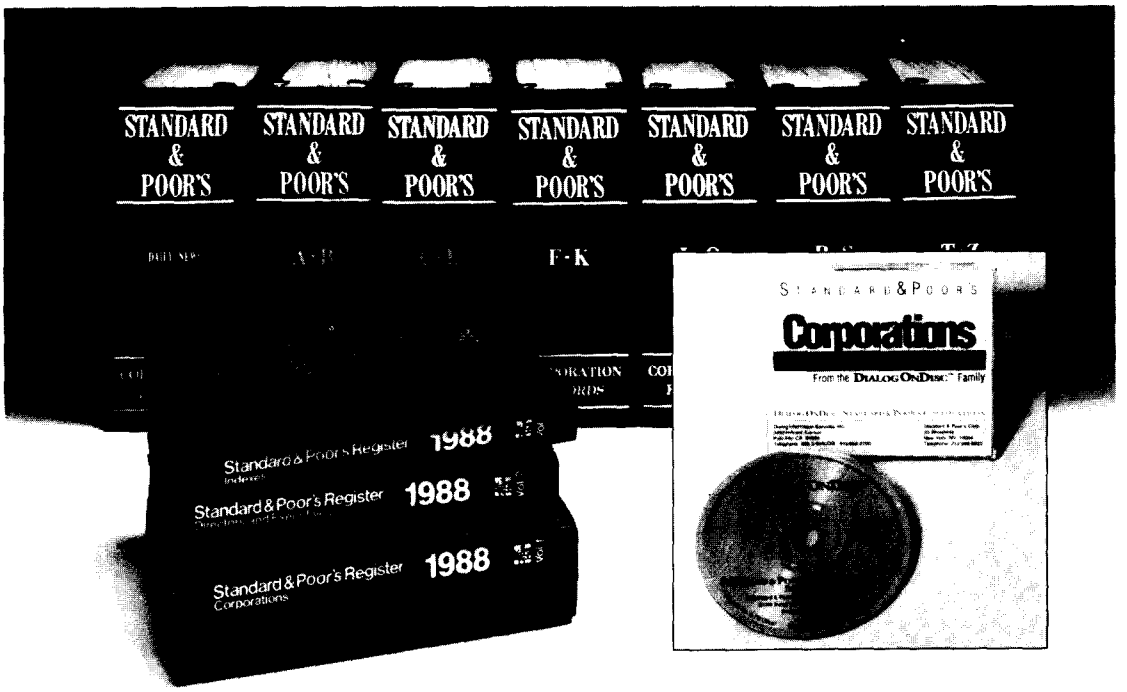

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Using the Information Resources of the Global Village:
The Information Systems of International Inter-Governmental Organizations

Robert V. Williams

■ **The information systems of international inter-governmental organizations (IGOs) contain significant information resources of interest to special librarians. Use of these resources, however, is limited by lack of knowledge of the existence and nature of IGOs. This paper discusses the nature of the information systems (publications, internal documents/data files, archival records, library/information center, and bibliographic networks) of IGOs in general, with particular attention to problems in acquiring information from them.**

Introduction

EVEN though the "global village" may now be said to be wired and interconnected, the information resources of some of its narrower and more hidden streets are not well used by many special librarians and information managers. Foremost among these resources are the publications, documents, and data files of international inter-governmental organizations (IGOs). This paper (part of a larger study of the information systems of IGOs) examines the characteristics of these information resources, problems in locating and using them, and presents recommendations for expanding their use within the context of special libraries. Specifically, the paper will: define IGOs, examine their characteristics and subject areas of interest, discuss the nature of their information systems in general (with specific attention to some of the more important ones), describe the procedures and problems involved in accessing and obtaining information from them, and conclude with some recommendations for increasing their use within special libraries.

Defining IGOs

The definition of an IGO is not a simple matter. The varieties of complications arising from the lack of a clear and simple definition are extensively reviewed in the *Yearbook of International Organizations*. The *Yearbook* is generally considered the most authoritative

source of information on international organizations of all types. It is compiled by the Union of International Associations (Brussels, Belgium), which has agreements with the UN for establishing definitions of IGOs and of non-governmental organizations (NGOs) insofar as is possible. Their three-part definition is:

> 1. An organization based on a formal instrument of agreement between the governments of nation states;
>
> 2. The agreement must include three or more nations as parties;
>
> 3. The organization must possess a permanent secretariat (or executive organ) performing ongoing tasks. *(1)*

From a legal standpoint, IGOs are the products of treaties or similar international agreements between nation states. These agreements are based on voluntary participation by the governments of the nations and are binding on the nations involved until the point at which they sever the agreement. These agreements may be of limited duration or indefinite; they may be for a narrowly defined set of purposes or for broad ranging ones; they may involve only three countries (bi-lateral agreements being excluded here) or a wide variety of nations; and they may confer a broad array of powers or a limited set of functions. Generally speaking, these agreements, and the resulting associated organizations, may be said to be of two types: supranational and non-supranational. The former generally has the ability to make decisions that are binding on member states (and the citizens of those states), while the latter type must work by, or through, the member states to accomplish actions or goals. For example, the European Economic Community (EEC) is a supranational body in certain areas of authority, but the UN has no supranational authority.

The constitutions (or charters, covenants, articles of agreement, etc.) spell out the nature of the organization, its powers, authority, membership, and methods of operation. In general, the structure of the IGO will include at least the following: a) a policy-making body that includes all members, b) an executive body charged with the responsibility of carrying out the policies agreed on by members, and c) administrative or technical staff that performs the day-to-day work of the organization. Depending on the size of the organization and the complexity of the agreements creating the IGO, the administrative and technical staff may be very large or quite small. Responsibilities for certain policies or enforcement of the constitution may be assigned to different segments of the IGO, such as in the UN between such organs as the General Assembly, Security Council, and the Economic and Social Council. The split in responsibility or authority may have great effect on researchers attempting to use the publications or documents of the IGO, particularly when bibliographic control or indexing of the documents is poor, and users must be aware of these problems and familiar with the organization.

Characteristics of IGOs

Just as the accurate definition of an IGO escapes careful delimitations, so also does the problem of how many IGOs there are. The *Intergovernmental Organization Directory, 1984/85* lists approximately 1,500 organizations. Robert W. Schaff estimates there are over 300 currently operating. (2) My analysis of the *Intergovernmental Organization Directory* and a number of other sources shows approximately 250 in existence as of 1980.

Today, IGOs are a significant factor in all areas of international relations. They are important in economic, social, educational, scientific, and cultural affairs. Practically every area of human endeavor is treated in some manner by an IGO. Every nation belongs to at least one IGO, and the United States has membership in at least 70 different IGOs. *(3)* They provide a wide variety of services and information and are critical not only to our safety and security but also to our standard of living and health. All IGOs generate substan-

tive information as a result of studies, meetings, conferences, sponsored research, field studies, and other endeavors.

Types of Information Systems of IGOs

Only inadequate guesses can be made about the quantity of materials available from IGOs. In a 1979 study of UN and UN-related agencies (16 independent IGOs), Marulli estimated that 180,000 pieces are issued annually by these organizations. This estimate included documents distributed to the public and multiple language editions of the same item. She also estimated that only about 5% of this total are true publications in the sense that they are available to the general public. *(4)* In his analysis of a 1980 UN report on internal and external document reproductions in the UN system of organizations, Hajnal shows that almost 1.5 billion page impressions were made in those organizations in one year. He also reports that the European Communities reported 793 million page impressions in 1979. *(5)* Schaff notes that the Library of Congress (which probably has the best collection worldwide) receives "thousands of international documents yearly...." *(6)* Cherns, in a review of official publishing, makes no attempt to estimate quantities, but notes that UN documentation between 1964 and 1967 grew at an annual rate somewhere between 400 and 600 million pages (of total output). *(7)*

Because of their great diversity in size and scope of responsibilities, IGOs are also extremely diverse in the nature and quality of their documentation and information systems. In general, however, almost all IGOs have at least the following types of documentation and information systems:

Externally distributed publications. Publications are the materials available from the IGO that are for sale or free distribution to persons or organizations outside the organization itself. These may be in a variety of formats (printed, mimeograph, microform, machine-readable, etc.), and vary in number of copies produced for individual items. These items may be available directly from the IGO itself, from an approved distributor (such as Kraus/Unipub), or from another IGO, which handles one or more of the publication processes for the IGO. Publications may also be published in cooperation with, and available from, a private commercial publisher.

Internal documents. These items are generally available only to staff or member governments of the IGO. They may be listed in the various bibliographies, catalogs, or indexes published by the IGO with such notes as "limited distribution," "restricted," or "internal use only." Some internal documents are eventually revised and issued as publications (particularly in the UN system). Researchers may be able to obtain a copy of these internal documents by writing to the appropriate office of the IGO or by contacting their governmental representative to the IGO.

Archival records. These are the publications, internal documents, correspondence, data files, reports, and other materials permanently retained by the IGO for administrative or historical purposes. Access to these materials generally depends on the existence of an archival program and the age of the IGO.

Library information center. Almost all IGOs maintain some type of library or information center. The size of the IGO typically determines the range of services provided to the staff of the IGO and to external users. The UN's Dag Hammarschold Library in New York City is an excellent example of the provision of a full range of user services, as well as the preparation of indexes and other bibliographic aids. In addition, an IGO may maintain its own internal information center for control of internal reports, data files, and other information materials.

Bibliographic information networks. The worldwide scope of some IGOs and the tremendous volume of materials on subjects of interest to them have led to the development of extensive, sophisticated bibliographic information networks. These systems—sometimes in cooperation with national governments and nongovernmental organizations—collect, abstract, index, and disseminate information about the subjects which interest them.

In some cases, these have resulted in computerized bibliographic databases and networks that are extremely valuable to the worldwide scientific community. A good example of one of these databases and its associated network is the International Nuclear Information System (INIS) of the International Atomic Energy Agency.

The above general categories cover the possible varieties of information and documentation systems of IGOs. They are, however, general categories; each IGO may have its own distinctive and unique procedures and titles for these functions. While most IGOs appear to possess all five of these types of information systems, closer study shows that their quality and accessibility vary greatly from one organization to another. The UN-related organizations predominate in the production of information resources. Table 1 shows the major online bibliographic databases identified in my study of IGOs.

The two-volume *Directory of United Nations Information Systems, (8)* published in 1979, lists over 300 additional computerized, but not online, data files available from the UN family of organizations. Currently, no list exists of all the major printed bibliographies and indexes available from IGOs, but I am in the process of compiling such a listing and interested persons may contact me for a copy.

Acquiring Publications, Documents, and Data from IGOs

Acquiring data from small IGOs is often difficult. Many have only limited sales and distribution systems, and it can be extremely difficult to locate even minimal information about their publications, which seldom appear in the national or trade bibliographies. *(9)*

The ease of acquiring distributed publications from the larger IGOs (UN, European communities, etc.) can be deceptive. These larger organizations have well-developed cataloging, indexing, marketing, and sales programs but the most difficult acquisitions problem is simply finding out about the existence of the publications, documents, and data files. Some of the general guides and indexes to IGO documentation are very useful for getting at these items, but generally they are informative only about the UN family of organizations. The best single regularly published bibliography of IGO publications is *International Bibliography*, published by Unipub. This quarterly index lists all publications, periodicals, microforms, and audiovisual materials from about 100 IGOs.

Particularly valuable is the indexing of all signed articles in the journals of the IGOs. This bibliography is well indexed by subject and other traditional indexing points and includes annotations and prices. The Unipub Bulletin *New Publications* is an excellent means for keeping up in a general way with topical publications from a variety of IGOs. Unipub also backs up this bibliographic system by acting as a dealer for most of the IGOs whose materials are listed in *International Bibliography*. They also issue general and specialized catalogs for items they handle.

While *International Bibliography* is the best single location source, it does not include all the documents that are for sale by the approximately 100 IGOs covered, and, of course, many IGOs are not included at all. Also missing from *International Bibliography* are the internal documents and the data files of all IGOs. This is not a criticism of *International Bibliography*, but simply a recognition of its limitations.

Beyond *International Bibliography*, there are only a few possibilities for coverage of more than one IGO. The best of these are the subject-based computerized networks, such as ARIS, INIS, and INFOTERRA. These systems are usually based on worldwide cooperative information networks for the selection and input of information. Many different IGOs operating in a related field may belong to one or more of these networks and have responsibility for including their publications and documents. The 1979 book *International Cooperative Information Systems (10)* reviews the work of these networks as of a few years ago, and speculates on their progress

Table 1. Selected List of Online Databases Produced by IGO's

CAB International

CAB Abstracts (agriculture, food nutrition, etc.)
CAB Economics, Development and Education

Council of Europe

EUDISED (education, Europe)

European Communities

EABS (nuclear energy, energy, environment)
ENDOC (dir. of environmental centers in EC member countries)
ENREP (dir. of research projects in member countries)
EURODICAUTIOM (science, technology, linguistics)
SDIMI (metallurgy, steel, metals)
COMEXT (int. trade, commodities)
CRONOS (economics, statistics, business and industry, etc.)

European Conference of Ministers of Transport

TRANSDOC (transportation)

European Patent Office

EDOC (patents)
European Patents Register

European Space Agency

LANDSAT EARTHNET DATA AVAILABLILITY (remote sensing, earth sciences)
SATADATA (Satellites, technology)
SPACECOMPS (aerospace)

Food and Agriculture Organization

AGRIS (agriculture, food, fisheries, veterinary science, etc.)

International Atomic Energy Agency

INIS (nuclear energy, technology)
Energy and Economics Data Bank

International Civil Aviation Organization

ICAO Statistics

International Coffee Organization

Coffeeline (coffee, commodities, econmics)

International Labour Office

CISDOC (occupational health and safety, technology)
LABORDOC (employment, occupational health and safety, employment)
LABORINFO (employment, labor, etc.)

International Monetary Fund

Balance of Payments
IMF Directions of Trade
IMF Government Finance Statistics
International Financial Statistics

Organization for Economic Cooperation and Development

13 databases (all names begin with OECD) on economics, labor, income, trade, etc. of member countries and some on developing nations

United Nations

UN Demographics
DUNDIS (Database of UN Databases and Info. Systems)
Register of UN Serial Publications

World Bank (IBRD, IDA, IFC)

World Debt Tables

World Intellectual Property Organization

INPADOC (6 databases on patents, patent news worldwide)

World Meterological Organization

World Weather Watch (meterological information)
CHOMS (Canadian Hydrological Operational Multipurpose Subprogramme)

Note: for listings of other databases, most not online, in IGO see:

Directory of United Nations Information Systems, compiled and edited by the Inter-Organization Board for Information Systems. NY: U.N., 1980.

Handbook of Information, Computer and Communications Activities of Major International Organizations. Paris: OECD. 1980. 200 pp.

over the next few years. Similar kinds of networks, oriented specifically towards developing countries' needs, have been developed recently by a variety of different agencies. Development-oriented databases often include information about the publications of IGOs. Canada's International Development Research Centre has been active in promoting these Development Sciences Information Systems (DEVSIS), and Aiyepeku's recent book *(11)* reviews the work of the existing ones and makes recommendations for the future. The bibliographic networks of IGOs and development-oriented organizations probably represent the best potential for future control of publications, documents, and data files of IGOs generally. Considerable work remains to be done before they cover more than a small percent of the total information available from IGOs.

Considerable discussion has taken place within various international groups for improvement of bibliographic control processes for IGOs, but little progress has been made. A 1977 UNESCO study *(12)* made a firm recommendation that the publications and documents of IGOs be a part of national bibliographic work. Specifically recommended were processes by the IGOs themselves for undertaking cataloging-in-publication, use of International Standard Bibliographic Number (ISBN), and use of international standards for cataloging description. A few IGOs have implemented some of these recommendations, but the majority have done little or nothing. *(13)*

Even though there is not one good source for bibliographic coverage of all IGO publications, it is still possible to maintain good or excellent coverage of information from the organizations that interest you. Once you have identified the organizations of interest to you, it will be necessary to determine the kinds of programs each IGO has available for acquiring their materials. For most IGOs (especially the larger ones), the standard processes are sales, deposit, and free subscriptions.

When an IGO has publications, documents, or other information for sale, they will generally issue some type of catalog, available on request. The catalog may resemble in quality and ease of use a traditional commercial publisher's catalog or it may be in very rough form, such as a typed sheet or mimeographed listing with minimal information on ordering procedures, prices, discounts, and so forth. Unipub/Bernan issues a regularly updated catalog of standing order titles available for order. Most of the individual IGOs have similiar standing order procedures. There may be free items which the library can receive on a standing-order basis. The larger IGOs have generally established official sales outlets in most countries for rapid service for popular and in-print items. (UNESCO, for example, had 275 outlets in 1975 and FAO had almost 100.) These sales outlets may be commercial dealers, such as Unipub, or government outlets, such as the National Technical Information Service in the U.S. As noted earlier, some IGOs use commercial co-publishing for more popular items, which can be located through traditional sources. The approaches used by each IGO for sales, free distribution, and co-publishing will be similar among the UN-affiliated IGOs but may vary significantly among the smaller IGOs.

Almost all of the IGOs engage in some type of depository library system. Frequently, the IGO designates only one library in each member country for receipt of free items on deposit. In many cases, the IGO will delegate to that library the answering of all questions about the IGO and the availability of its documents. This places a heavy burden on these libraries and obtaining service from them may be quite difficult. Fortunately, the larger IGOs often establish several depository libraries within a country, usually resulting in improved service. The UN and European Communities, for example, have extensive worldwide systems of depository libraries. In general, these depository libraries do participate in inter-library lending, and some provide reference services to individuals outside their own organizations. Some of the IGOs, such as FAO and the World Bank, have taken great care to establish depository libraries in devel-

oping countries so that researchers in those nations may have unhindered access to their publications and documents.

The problems involved in acquiring the publications and non-internal documents of IGOs are not nearly as severe as those for obtaining the internal documents and data files of these organizations. Only a few of the existing catalogs and guides provide listings for these materials, and depository libraries maintain almost no holdings of them. Eventually, as cataloging and bibliographic control systems for computerized data files are improved, we may see improvement in this area. Currently, however, the special librarian attempting to locate them has his or her work cut out. For the UN family of IGOs, the Directory *of United Information Systems* is the best single source for these organizations. The dated, but still useful, Organization for Economic Cooperation and Development (OECD) *Handbook of Information, Computer and Communications Activities of Major International Organizations, (14)* contains thorough information on the kinds of information being collected by some of the larger IGOs. For most of the IGOs, however, it is necessary to consult the various catalogs, newsletters, and other publications of the organization for listings of these kinds of materials. In many cases, these documents and data files are available only to member governments or qualified researchers. A great deal more work by the IGOs—and by bibliographic and documentations systems professionals—is necessary before we have even moderately good control over these kinds of materials.

Conclusions

Special librarians are well known—perhaps infamous—for their ability to find out about, and obtain, elusive information. IGO information daunts the best of us, but is not impossible. It simply takes knowing the potential that awaits us in these information resources, as well as persistence. As should be obvious by now, there is tremendous diversity in the quality and the accessibility of the bibliographic control and information retrieval systems of the IGOs. This diversity causes many problems, as it does in commercial systems, but not insurmountable ones. Even the most serious problem—restrictions on certain types of information—can often be overcome by appeal to member governments for the information.

Given the difficulties—particularly the unevenness of the information systems—it is not surprising that the publications, documents, and data files of IGOs are underutilized. In this they share a fate quite similar to other kinds of government information. It is to our advantage to remember that these organizations have extensive information resources valuable to our users and that we need to work—individually and organizationally—to find out about them and bring them to the attention of our users.

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Thesaurus Development for Subject Cataloging

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■ **The biomedical book collection in the Genentech Library and Information Services was first inventoried and cataloged in 1983 when it totaled about 2,000 titles. Cataloging records were retrieved from the Online Computer Library Center (OCLC) system and used as a basis for cataloging. A year of cataloging produced a list of 1,900 subject terms. More than one term describing the same concept often appeared on the list, and no hierarchical structure related the terms to one another. As the collection grew, the subject catalog became increasingly inconsistent. To bring consistency to subject cataloging, a thesaurus of biomedical terms was constructed using the list of subject headings as a basis. This thesaurus follows the broad categories of the National Library of Medicine's *Medical Subject Headings* and, with some exceptions, the *Guidelines for the Establishment and Development of Monolingual Thesauri.* It has enabled the cataloger in providing greater in-depth subject analysis of materials added to the collection and in consistently assigning subject headings to cataloging records.**

THE Genentech Library and Information Services department has a collection of approximately 8,000 books and 600 journal titles. A team of six professionals and four support staff serve a company of over 1,600 employees. More than half of the regular library users are scientific staff, but, as Genentech has grown and brought products to the market, it has seen increased use of the library services and collection by marketing, business, and legal personnel.

Approximately 80% of the collection is of a scientific nature; marketing and business-related titles comprise most of the other 20% of the collection. The scientific subject coverage is extensive and includes the areas of biochemistry, immunology, molecular biology, genetics, virology, endocrinology, microbiology, pharmaceutical sciences, pharmacology, biochemical engineering, genetic engineering, and biotechnology. The book collection was first inventoried and cataloged in 1983 when it totaled about 2,000 titles. Cataloging records were retrieved from the Online Computer Library Center (OCLC) system and used as a basis for cataloging. An alphabetical list of

subject terms assigned, with few cross-references, was maintained in both paper and online form.

Statement of the Problem

Library of Congress (LC) records and Library of Congress Subject Headings (LCSH) are preferred for cataloging at Genentech. If no LC cataloging record is available on OCLC, National Library of Medicine (NLM) or other library records are used. Original cataloging is done if an appropriate OCLC record cannot be found. This practice led to the inclusion in the library's subject heading list of both LC and NLM subject headings/subheadings covering the same concept. The following pairs are but a few examples:

MICROBIAL METABOLITES (TESTING)
MICROBIAL METABOLITES—TESTING

METABOLIC DISORDERS
METABOLISM—DISORDERS

ENDOCRINE DISEASES
ENDOCRINE GLANDS—DISEASES

PLANT DISEASES
PLANTS—DISEASES

DRUG METABOLISM
DRUGS—METABOLISM

The cataloger at Genentech is free to accept, reject, or augment the subject headings of the OCLC record. If no specific heading exists to describe the contents of a work, LC may assign to the work more general subject headings.*(1)* The result is that the work will be difficult or impossible to locate.*(2, 3, 4, 5)* In addition, some of the LCSH do not represent present-day terminology.*(6, 7, 8, 9, 10)* When LCSH terms were not adequately specific or current to describe the book for the library's purposes, the cataloger chose appropriate NLM Medical Subject Headings (MeSH). If no appropriate MeSH terms were available, subject headings were created locally. With no vocabulary control, synonyms for the same concept were often assigned. For instance, human T-cell leukemia/lymphoma virus can be referred to as human T-leukemia virus, human T-lymphotropic retroviruses, human T-lymphotropic viruses, and HTLV. If the cataloger is unaware that the various terms are synonymous, she might add a new term to the subject heading list when a term for that concept is already available.

LC also follows the principle of specific entry, which "requires that a work be entered under the most specific heading which represents its subject content. Ideally, the heading should be coextensive with (no broader or narrower than) the subject content of the work."*(11)* These subject headings are assigned to a work "to reflect the topic of the work as a whole not to provide in-depth analysis." *(12)* This means large works detailing many different topics will be assigned general subject headings. Valuable information in these large works is lost, and the catalog does not truly reflect all of the information available in the library on a subject.*(13, 14, 15)* The cataloger at Genentech wanted to be able to provide in-depth and summary indexing to maximize the amount of information patrons could retrieve from the card catalog. To do this, it is necessary to know the genus-species relationships among terms. This was not known for the mixture of LC, NLM, and locally generated headings that comprised the subject heading list, and so it was not possible to determine all of the appropriate specific and general headings. When MeSH terms were used, the relationships could be determined from the appropriate MeSH trees; however, there is no equivalent printed hierarchical tree structure for LCSH. The "see also" reference of LCSH is meant to show hierarchical relationships, *(16)* but studies have shown that these cross-references mix levels of classification. *(17, 18, 19, 20)* It has been stated that "at best, LCSH can be said to have a random classification." *(21)*

A year after the initial inventory, the unavailability of LC cataloging records in some cases, the limitations of the LC subject list, and the rationale by which LC assigns subject headings led to the creation of a subject heading list containing 1,900 LC, NLM, and locally generated subject headings. Because the cataloger was an inexperienced cataloger, she was unaware of the problems that could occur when multiple sources were used for subject cataloging. In increasing numbers, more than one term appeared in the list for the same concept. No hierarchical structure related the

terms to one another, and subject cataloging was becoming increasingly inconsistent as the collection grew. It was determined that a thesaurus should be constructed to bring consistency to the subject cataloging process.

A thesaurus fulfills three basic functions. First, it shows which term is the preferred term among the existing synonyms. Second, it shows the genus-species relationships of the preferred terms. Third, it shows relationships among preferred terms across categories or hierarchies. *(22)* If there was a hierarchy of ENDOCRINE GLANDS and HORMONES, the entry in the thesaurus under ENDOCRINE GLANDS might appear as below:

ENDOCRINE GLANDS
BT: ANATOMICAL STRUCTURES
NT: ADRENAL GLANDS
OVARIES
PITUITARY GLAND
TESTES
THYROID GLAND
RT: HORMONES

where BT = broader term and NT = narrower term, and RT = related term. Thus, the term ENDOCRINE GLANDS is a narrower term in the hierarchy of all anatomical structures, but it is at the head of the hierarchy of all endocrine glands. It is related to the term HORMONES because endocrine glands produce hormones. How the term HORMONES stands in its hierarchies could only be determined by looking at the entry in the thesaurus under HORMONES.

METHODS

Development of the Thesaurus: Subject Headings. It was necessary to evaluate the existing 1,900 subject terms as a basis for the thesaurus. The subject heading list had been maintained in machine-readable form in a UNIX file on a VAX 11-785. Thus, one could be fairly certain that all headings and subheadings appearing in the catalog were also on the subject heading list. It was not necessary to go through the card catalog and manually record the subject headings as has been described elsewhere. *(23)* A printed copy of the subject heading list was simply generated from the computer.

In the construction of the thesaurus, only biomedical and related terms were considered. Since at least half of the terms on the subject heading list were MeSH terms, it was decided to construct a thesaurus following the broad categories of the NLM subject headings in much the same manner as Kirtland's microthesaurus of cancer terms. *(24)* Except for the deviations noted in the discussion below, the *Guidelines for the Establishment and Development of Monolingual Thesauri* was followed. *(25)*

The biomedical subject headings in the subject heading list were divided into the following broad categories: organisms, anatomical structures, chemicals, procedures and techniques, disciplines, equipment and supplies, pathological conditions, phenomena, manpower, facilities, industries, and organizations. For each category, the appropriate terms were collected and classified. When two or more different terms representing the same concept were present, one term was chosen as the preferred term. Two main criteria were used for selecting the preferred term. The term representing the most current usage was always selected. If the terms were all commonly used, the catalog was checked to determine which term had been used most. The term for which there had been the most items cataloged was chosen as the preferred term. In the catalog, EXPERIMENTAL DESIGN and RESEARCH DESIGN had been used to index the same concept. More items were indexed with RESEARCH DESIGN than with EXPERIMENTAL DESIGN. RESEARCH DESIGN was chosen as the preferred term and EXPERIMENTAL DESIGN was entered in the thesaurus as a cross-reference to the preferred term, i.e., Experimental Design use RESEARCH DESIGN.

Where there was only one subject heading representing a particular concept, that subject heading was generally retained unless the term represented archaic usage or was a singular word which should be a plural. LEUKOVIRUSES appeared on the subject heading list, but TYPE C ONCOVIRUSES is the current terminology. Thus, the thesaurus shows LEUKOVIRUSES use TYPE C ONCOVIRUSES. INTERFERON appeared on the subject heading list as a singular term; for

the thesaurus it was changed to INTERFERONS.

Subject headings representing two or more concepts were broken into separate headings to reflect each concept. For example, CELLS AND TISSUES was split into two headings, CELLS and TISSUES. STAINS and STAINING was split into STAINS and STAINING. Changes in the catalog had to be held to a minimum since there was neither the staff nor the time to make massive changes in the catalog. Basically, the process involved controlling for synonyms and providing a structure in which to place the subject headings already used.

Addition of new terms came from two sources: those which were added to give structure to the thesaurus and those which were added as non-preferred entry terms. MeSH terms were used where possible to give structure to a category. Where no appropriate MeSH term existed, terms were locally generated by using scientific dictionaries, textbooks, and classification schemes. Non-preferred entry terms were also collected in this manner.

Once a classification scheme had been devised for a category, an alphabetic listing of the terms with the appropriate use, use for, broader term, and narrower term was generated for that category. For each category then, there was a computer file of the classification scheme and a computer file of the alphabetic listing. Each category was completed in this piecemeal fashion. Since related terms describe relationships between terms of different categories, related terms were not added until all the categories had been completed. When all the categories were completed, the computer files of the alphabetic listings were merged to form one alphabetic listing of the terms—the thesaurus.

Development of the Thesaurus: Subheadings. Since the old system had used a mixture of LCSH and MeSH subheadings, the subheadings for each category of terms had to be standardized. Following the methods of Peterson, the structure of the subheadings was patterned after MeSH. *(26,27)* Two types of subheadings were retained, one by form and one by topic. Thus, the general criteria for retaining or adding a subheading was if the concept covered by the subheading was an attribute of a subject heading, or a process relating to it, or if it could be applied to many terms in the thesaurus.

Using the original computer file of headings/subheadings, a list of only subheadings was generated. It became apparent almost immediately that some words had been used as both headings and subheadings. To find out the various ways a particular word had been used, it was possible to generate, from the original computer file, lists of all the headings/subheadings which contained specific words. For instance, if one asked for any occurrence of genetic within a heading/subheading, one could get a listing including the following examples:

BACTERIAL GENETICS...
FUNGI—GENETICS...
GENETICS, MICROBIAL...
PLANT GENETICS...

Since it would have required too many changes in the catalog, it was not always possible to be consistent between subject headings and headings/subheadings. Genetics is a term fulfilling the general criteria; therefore, the subheading list shows genetics as an appropriate subheading to be combined with an organism heading. However, subject headings for some organisms are already combined with genetics to express that concept. Thus, the catalog will show PLANT GENETICS and also FUNGI—GENETICS.

In the simple cases, a subheading either passed the general criteria or did not. In many cases where a subheading was to be retained, a preferred term had to be selected from a group of two or more synonyms or near synonyms. For instance, the subheadings include PREVENTION AND CONTROL, PREVENTION, and PREVENTIVE INOCULATION. In general, the subheading for which there had been the most items cataloged was chosen as the preferred subheading. If the subheading did not pass the criteria, it was eliminated and, if appropriate, a subject heading was constructed to cover the concept. Thus, AIR—POLLUTION was changed to AIR POLLUTION.

Changing the Card Catalog. When changes are made in the subject vocabulary, it is necessary to make changes in the card cata-

log to reflect the subject heading changes. The first change that must be made is in the subject heading cards. Cards with subject headings which were no longer to be used were pulled from the catalog. After noting the change on the shelf list and main entry cards, the cards with such subject headings were discarded. When a subject card required minor changes, corrections were made on the card. Deletions were made by "whiting out" information, and additions were typed onto the appropriate cards. Any changes were noted on the shelf list and main entry cards. When the change could not easily be made on the affected card, a new record was produced on OCLC and a new set of cards produced. Not more than 50 new sets of cards were produced. Old card sets were removed as the new ones were filed. Old shelf list cards were retained in a separate drawer.

It was important to keep a record of changes made should the catalog ever be automated. Changes made in the card catalog, but not recorded on an OCLC record, would have to be made at the time of automation. In addition, a change made through OCLC does not make a change in the library's existing record. Instead, a new record is produced with the result that now duplicate records exist for the same item. Should the catalog be automated, the correct record would have to be selected and the other removed. It was hoped that accurate records would make this job much easier.

The second kind of change that should be made in the card catalog is changing and adding cross-references. Cross-reference cards which were no longer appropriate were discarded. New cross-reference cards have been placed in the card catalog and are added whenever the cataloger makes new "use for" cross-references in the thesaurus.

Results and Discussion

Not all the rules as prescribed in the *Guidelines (28)* for the construction of thesauri could be followed. In constructing the ideal thesaurus, prospective terms are extracted directly from the appropriate documents. This ensures that the terms used in the thesaurus reflect the ways in which experts in the subject field use the language. The result is that it increases the probability a searcher's term will match a thesaurus or index term. In constructing this thesaurus, there was a list of terms which had already been used in subject cataloging. Only some of these terms had been taken directly from the documents; the majority were subject headings of LC or NLM. For practical reasons, it was decided that terms which had already been used as subject headings were not to be changed unless absolutely necessary. Thus, the list of subject headings was used as a starting point in the construction of the thesaurus instead of terms collected from documents.

Because of this basic requirement there are, in this thesaurus, deviations in the form of the vocabulary terms as prescribed by the *Guidelines. (29)* Compound terms should be entered in a thesaurus in natural language order; however, there were a number of inverted word order terms in the subject heading list. Thus, in this thesaurus, one will find, for example, ANIMALS, LABORATORY or VIRUSES, DNA. In these cases, a natural order, non-preferred entry is provided, i.e., Laboratory Animals use ANIMALS, LABORATORY.

Another deviation is leaving together in a pre-coordinated phrase adjective-noun terms, which express two separate concepts. In a thesaurus constructed for post-coordination, all the things, parts, processes, attributes, and operations would each form separate categories. For example, BACTERIAL CELL WALLS would be divided into BACTERIA to go into the thing category and CELL WALLS to go into the parts category. Since the thesaurus was constructed for use with a card catalog, terms such as these were left in their original pre-coordinated form in order to provide the specificity needed in searching the catalog.

A final deviation was placing heading/subheading combinations at the top of a hierarchy. This occurred most frequently in the PROCEDURES AND TECHNIQUES and PATHOLOGICAL CONDITIONS sections. For example, many items in the catalog had been indexed under CYTOLOGY—TECHNIQUE. Normally, this concept would be expressed as CYTOLOGICAL TECHNIQUES with all the kinds of cytological techniques listed under the term. For the same reasons, gastrointestinal diseases is expressed in this thesaurus as DIGESTIVE ORGANS—DISEASES.

The thesaurus of biomedical terms was completed during a full-time internship last-

ing two months. The categories completed were organisms, anatomical structures, chemicals, procedures and techniques, disciplines, equipment and supplies, pathological conditions, and phenomena. Except for the addition of cross-references, changes in the catalog necessitated by the thesaural construction were completed before the end of the internship. New books acquired by the library were subject cataloged during this time using the thesaurus.

By using the thesaurus for subject cataloging, the cataloger can consistently assign subject headings to Genentech cataloging records. It does not matter whether an OCLC record or original cataloging is used. The cataloger is also able to provide greater in-depth subject analysis of materials added to the collection. New subject terms often occur in OCLC records, or are added by the cataloger as materials are acquired on subjects that require more detailed entries in some areas of the thesaurus. All new terms are first checked against the thesaurus to be sure they are not simply synonyms for an existing term. Then their place in the hierarchy is determined through examination of the thesaurus, the MeSH tree structure, and other classification schemes if necessary. Since the thesaurus and the classification are maintained in computer files, new terms can be easily classified and integrated into the thesaurus. Thus, at any time the machine-readable thesaurus accurately reflects the subject headings that can be used in subject cataloging. A copy of the thesaurus is also available at the card catalog to help staff and patrons locate the appropriate subject headings when they are searching for books.

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Local Area Network Implementation:
Moving Toward Phase III

Susan B. Hoehl

■ **Most libraries are being required to operate more efficiently and effectively. A local area network (LAN) is a powerful tool for both increasing productivity and enhancing services to meet the changing needs of library clientele. The first phase of a LAN-based automation project for the Health Sciences Library of Allegheny General Hospital is described. Changes which occur as a result of automation lead to opportunities for development beyond the initial automation priorities. Possible paths of development are explored and potential barriers are identified.**

Introduction

THE current environment for many corporations is one of fiscal conservatism, downsizing, and doing more with less. Strategies must be developed to achieve organizational and departmental objectives despite a shrinking resource base and fewer staff. A local area network (LAN) is a powerful tool for addressing institutional requirements for efficient and effective use of resources.

John Diebold, in his book *Automation* published in 1952, identified three stages in the process of implementing technological change. Phases of technological change—for the purposes of this paper, referred to as the phases of automation—are:

- Phase I: Automate what you did yesterday.
- Phase II: Automation changes what you do as well as how it is done.
- Phase III: Society, as a whole, changes as a result of automation. *(1)*

The Diebold model may be used to examine changes in libraries and library goals resulting from automation. The Health Sciences Library of Allegheny General Hospital (AGH) purchased a local area network in 1984 and has almost completed Phase I implementation. This paper will describe the library's automation project and will examine how the library and its objectives change with increased technological experience.

Local Area Networks

The falling cost of hard disk storage and the

increasing demand for microcomputer data sharing resulted in the commercial development of local area networks in the early 1980s. LANs allow concurrent, multiple access to microcomputer files. A typical LAN is composed of a hard disk storage unit, a file server and operating system software which control access to the hard disk, several microcomputer workstations, and peripheral devices such as printers and plotters. The configuration of the Health Sciences Library's LAN includes a 183 MB hard disk unit, a dedicated file server, one letter-quality network printer, nine workstations, and six dot-matrix printers (see figure 1). Applications software and data files, which reside on the hard disk, as well as peripheral devices, may be shared by all workstations on the network. LANs provide a cost-effective means for individual users to access a wide range of hardware and software without losing the distributed processing power of each microcomputer.

Phase I: Automate Everything

The original objective of the library's automation project was to automate all feasible library tasks. Literature searching had been automated for several years. All other tasks were potential targets for automation. Automation priorities were established based on the essentiality of an operation to library services, the anticipated productivity gains following automation, the degree of improved information access for clients, and the time required to automate an activity.

The card catalog was the first target for automation. Due to the small size of the library's collection and the lack of suitable alternatives, library records were manually keyed into the system. Concurrent with building the database of monographic and audiovisual resources, serials control and the acquisition function were automated. Planning is underway to implement an automated circulation system and to barcode the library's collection. An interface between the catalog, acquisition, and circulation modules reduces redundant keying of data and greatly increases efficiency.

After trying and rejecting an off-the-shelf interlibrary loan software package, an in-house system was designed. The interlibrary loan system is easy to use, easy to maintain, and will generate reports on all aspects of the interlibrary loan service including journal title reports used in collection development.

Office functions have been gradually automated. All staff learned a word processing program early in the automation process. The library's budget is managed with an automated spreadsheet, providing more current information than the hospital's internal accounting system. Service statistics are maintained online, providing a variety of reports that were previously unavailable and enhancing management decision making.

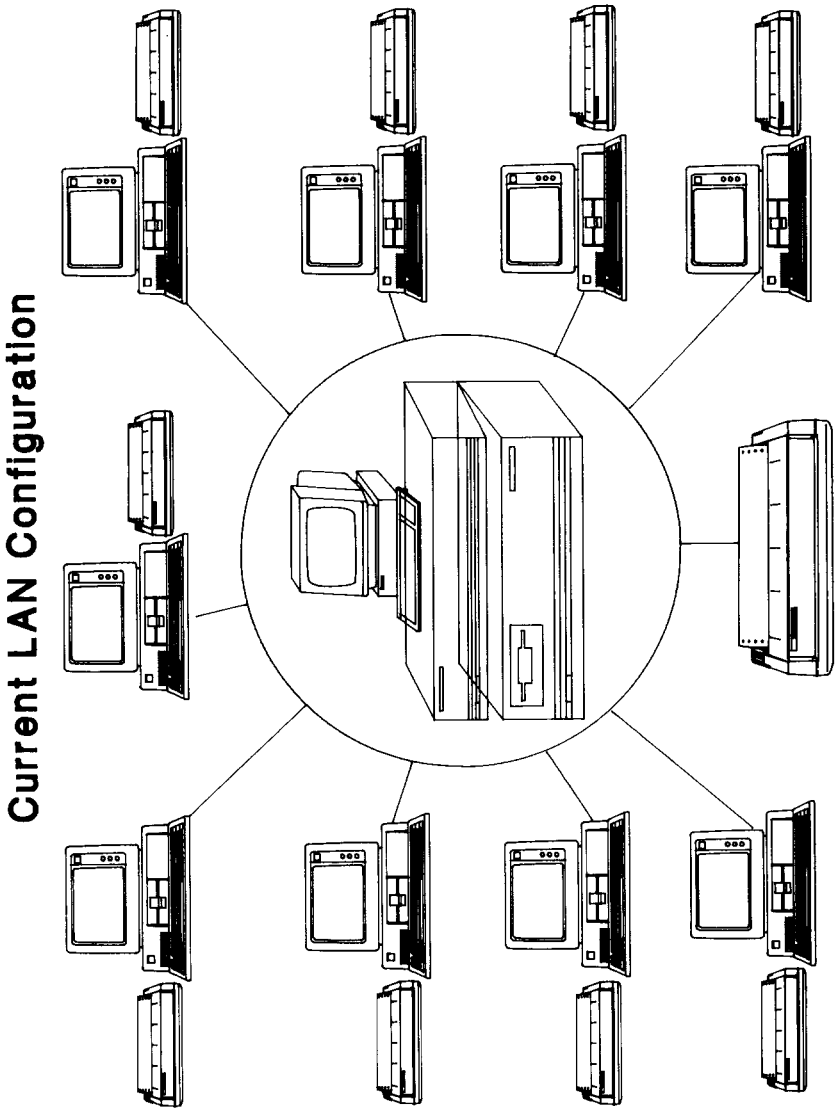
Automation-Related Changes—Moving Into Phase II

During the course of LAN implementation, changes occur in technology and in the library itself, which lay the groundwork for Phase II development. In the four years since the Health Sciences Library first purchased and implemented a local area network, there have been many changes in LAN technology. Hard disk storage capacity is increasing and the cost is decreasing. Network operating system software is much easier to use. The most significant improvement is in the LAN's communications capability. LANs can communicate, directly or through a modem, with other LANs or with a mainframe computer. The ratio of system capability to cost has improved dramatically. *(2)*

Systemic changes have occurred in the library as a result of LAN implementation, contributing to changes in what we do as well as how we do it. All of the library's important data files reside on the LAN. A library staff, which four years ago had very limited experience with computers, has developed into a highly skilled, computer-literate group of professionals. The staff's specialized computer and information-handling skills, together with the pervasiveness of computer technology and an increasingly information intensive environment, have resulted in their roles shifting to training and facilitating clients' information quests.

The library's leadership in LAN implementation has contributed to a heightened perception of the library as an active, professional information center. Enhanced credibility is the basis of cooperative relationships between the library and other hospital departments

Figure 1.



involved in information transfer. Cooperative relationships and joint ventures will be required in order for most special libraries to effect changes in organizational information management.

Phase II—Shifting Objectives

Total automation of existing library tasks and services signals the completion of Phase I. Objectives for the second phase of automation in the Health Sciences Library will require integration of the library's LAN with existing institutional computer systems and include the following:

- Provide twenty-four hour electronic access to the library for all hospital staff, whether in-house or from a geographically remote facility.
- Develop strategies for the electronic transfer of information between the library and its clients.
- Provide a single contact point for hospital staff to access information, whether internally or externally produced, paper-based or electronically generated.

There are two primary scenarios through which our objectives could be met, each with intrinsic advantages and disadvantages. The first option is to develop strategies for communicating with remote users through the hospital's mainframe (see figure 2). Library files would be transported via a gateway from the LAN to the mainframe. A mainframe-resident menu-driven program would allow queries of the library's databases, as well as providing for messaging through an electronic mail module.

The main advantage to the mainframe approach is the breadth of the potential user pool, which includes all clinical staff through terminals used to access the patient information system. Also, a database of clinical information pertinent to some library clients already resides on the mainframe, providing the basis for unified information access. Menus and templates, to facilitate client use, are easily developed. Potential security problems of direct LAN access for remote users would be eliminated.

There are disadvantages to working through the mainframe as an integration approach. A software program would have to be internally designed to allow mainframe access to library data. Protocols for searching the online catalog would be different from mainframe workstations and LAN workstations. Also, the protocols which would enable users of the hospital information system to access library files are cumbersome. Autonomy of the library's files would be compromised and the currentness of the databases degraded.

A second option for linking the library's LAN with other hospital departments is a proposal to run an Ethernet backbone through a portion of the hospital. The library's LAN could be an active member of the network (see figure 3). This approach would allow control of the library's data files to remain with the library. Also, departments participating in the network proposal would be a receptive group with which to work on library systems development, increasing the probability of project success. The potential exists for expansion of the network if it is active and successful.

Of course, there are disadvantages to this approach as well. The initial pool of users is small, and clinical staff do not necessarily have direct access to the system, although modem access is a possibility. There is little flexibility in screen and menu design, so users will have to be knowledgeable. Also, the effect on the response time of the LAN under these conditions is not clear.

Although neither approach is ideal, both will provide for remote searching of the library's databases and electronic transmission of information requests and responses, as well as linking diverse computer-based information resources. The library's automation plan will identify both short-term and long-term goals whose implementation processes will probably differ radically. Regardless of the approach, we will be one step closer to developing user-driven electronic access to computer-based information resources within the hospital.

Barriers to Phase II Development

Assuming that the continued expansion of automated library services will entail integration with information systems beyond the library, there are a variety of possible barriers to

Figure 2.

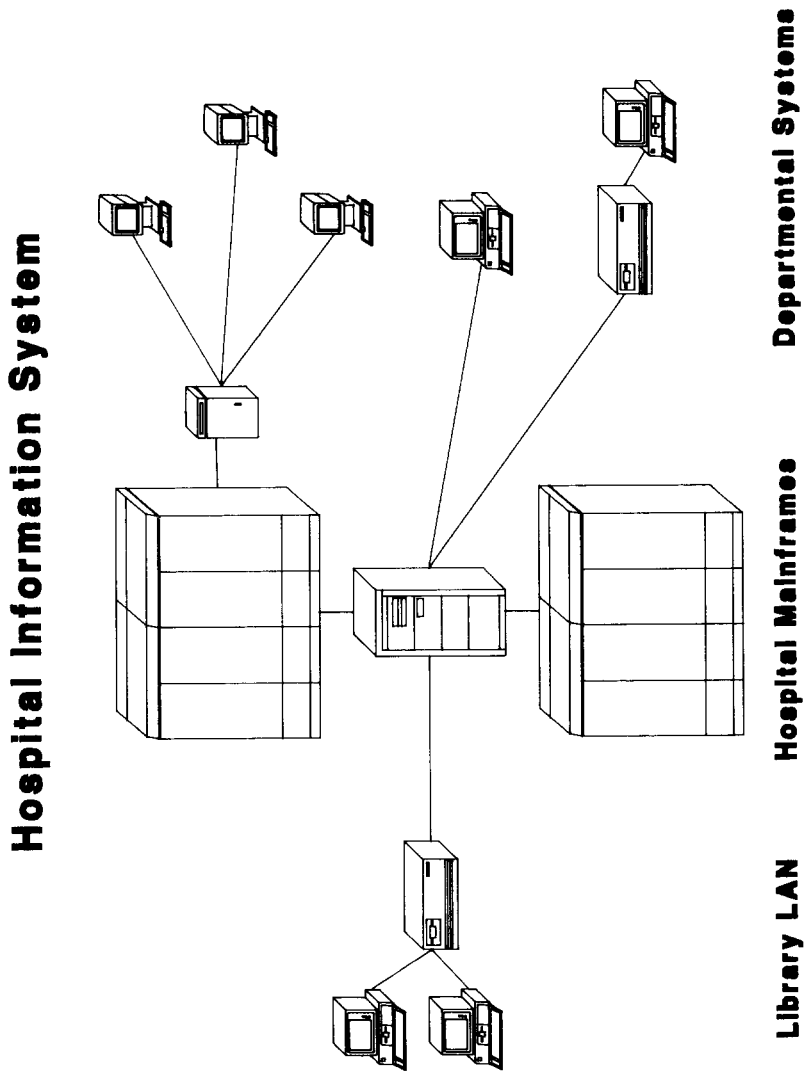
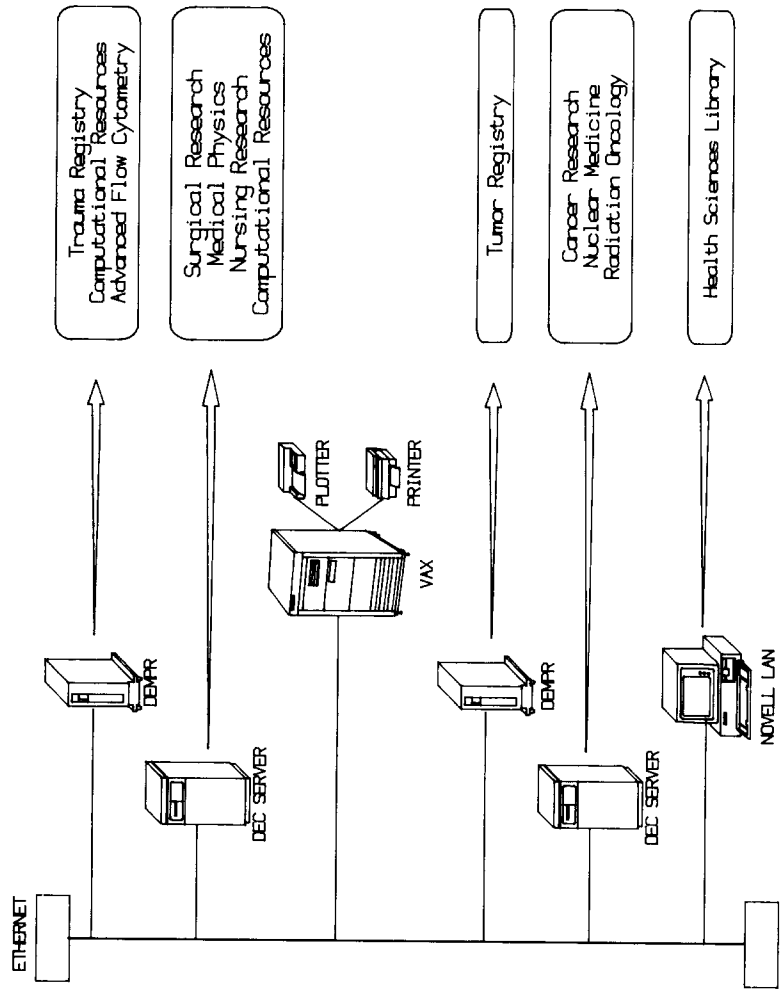

Hospital Information System
Departmental Systems
Hospital Mainframes
Library LAN

Figure 3.


Trauma Registry
Computational Resources
Advanced Flow Cytometry
Surgical Research
Medical Physics
Nursing Research
Computational Resources
Tumor Registry
Cancer Research
Nuclear Medicine
Radiation Oncology
Health Sciences Library
PLOTTER
PRINTER
VAX
DEMPR
DEC SERVER
DEMPR
DEC SERVER
NOVELL LAN
ETHERNET

development. First, clear institutional goals for information management may be lacking. Even when goals exist, they may pertain only to specific projects, rather than delineating the organization's overall approach to information management and use. Goals may not address issues central to the development of information services, such as support for intra-organizational electronic mail or a policy regarding direct access to mainframe-resident information or to pertinent information generated by departments other than one's own.

Second, the library may lack sufficient status to effect institutional change. While it is clear to most librarians that their expertise is particularly pertinent to information systems development, this may not be apparent to others, particularly administrators and data processing personnel. Finally, the technical computer expertise, which is required to plan and implement systems integration, may not exist within the library.

There are organizational considerations in planning for the integration of the library's LAN with other computer systems. The library's niche in the formal organizational structure will partially determine how much formal support to expect for the project and how to best initiate and facilitate change. The library manager's understanding of corporate culture, corporate goals, and decision-making style will be valuable in establishing the library as a priority department for in-house information systems development.

No less important than the formal organizational structure is the informal structure of interdepartmental relationships. Because a special library is rarely in a leadership position within an organization, interdepartmental cooperation toward common goals is not only desirable, but necessary. Cooperative relationships and joint projects with other departments will provide informal sources of support for the library's objectives. Technical skills, which may be lacking in the library, probably exist elsewhere within the organization and may be utilized on a cooperative basis. These links will also demonstrate the need for enhanced communication and information transfer between the library and other organizational units.

Publicizing the library's Phase I accomplishments, which demonstrate computer expertise, and the repeated presentation of long-term library objectives linked to the organizational mission can be effective techniques for overcoming barriers to development. A clear understanding of the parent corporation, and the ability to identify and work with others within the organization who hold goals compatible with the library's, can result in a synergism which will benefit all those involved.

Phase III—Fundamental Changes

Phase III exists in the imagination of creative information handlers and will remain amorphous until there are enough people who have experienced the earlier phases of automation and can put that experience to innovative use. The National Library of Medicine is involved in projects which will fundamentally alter the way we approach information. One such project is the development of a Universal Medical Language System to provide linkages between the disparate vocabularies currently in use in automated medical information systems. Work is ongoing to develop expert systems which apply artificial intelligence techniques to the problems of organizing and correlating information to facilitate diagnostic and therapeutic decision making.

A landmark report by Nina W. Matheson and John A. D. Cooper, supported by the National Library of Medicine, was issued by the Association of American Medical Colleges in 1982. *(3)* The purpose of Matheson and Cooper's study was to "present the rationale for the long-range development of integrated institutional information management networks; to describe how such networks can be achieved through the development of a technologically sophisticated library; to explain why a new library concept is essential in the emerging electronics dominated information environment." It is a visionary report offering compelling justification for a leadership role for libraries in the development of integrated information systems. The basic tenets of the report are as valid for special libraries as for academic medical libraries.

Summary

The pervasiveness of information and information handlers in all organizations and the development of organization-wide informa-

tion systems indicates opportunity and need for library managers to participate as advocates of the ultimate users of information. A library with the technical capabilities of a LAN is well positioned to encourage an appreciation of the wide scope of available information and its potential uses, as well as to advocate the linking of distributed information resources without threatening the autonomy of the individual units involved. An important objective for the library is to encourage cohesion in a fragmented information system. The library is in a unique position to demonstrate how information may be applied in ways unimagined by its originator, to encourage cooperation, and to facilitate access to all available information.

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The "Quiet Revolution": A Profession at the Crossroads

Herbert S. White

■ **Special librarianship is at a crossroad. In one direction lies the importance implied in the word "information" and in the universal understanding that information may represent the most important resource in any organization. The other direction may not lead to extinction but certainly to trivialization, because much of what others will gladly leave us is clerical and routinely computerized. The revolution we face is "quiet" because nobody is scheming to kill us off. However, we could commit suicide.**

TEACHING special librarianship to largely inexperienced students for 12 years, and offering countless continuing education seminars to special library practitioners for almost as long, has allowed me to develop and strengthen my convictions, and probably also my biases. I believe that special librarianship cannot be defined by type of library, but rather by the value system that is brought to the information interaction we have with our clients. Special librarianship, I am quite certain, is a state of mind and an attitude, and it is most directly defined by that marvelous motto that has served us so well for more than 60 years: "Putting Knowledge to Work." Putting it to work is not a passive process; it does not consist of developing huge collections without measuring or caring whether or not they are used or whether or not the information being searched for can be found, a practice too prevalent in many academic libraries in which ownership and not availability is all that counts. It is a process of giving users what they need, and what they need is not necessarily what they want or what they ask for.

Because of our emphasis on information service, special librarians are not likely to fall into the "type of materials" trap that bedevils other libraries. We know that World War II spawned the technical report as a mechanism for rapid communication, and it soon moved from sci-tech to the business community. For many special libraries it is these reports, and certainly not books, that form the lifeblood of the collection. For others, it might be engineering drawings, patents, laboratory notebooks, or newspaper clippings. The rest of the profession has yet to make this adjustment. It

catalogs books in great detail on a descriptive, but not subject, basis, it depends on professional societies to analyze periodicals, and it files everything else in cabinets with only perfunctory control. Our willingness to forego an emphasis on type of material for an emphasis on information need stands us in good stead, because it avoids quite neatly the question of what belongs in libraries. We are best primed, if we see and seize this opportunity, to become the supermarket for organizational one-stop information shopping.

One of the tremendous advantages that special librarians have over their colleagues in public, school, and, particularly, academic libraries is that they have more freedom to do what they feel needs to be done. They are, of course, constrained by budgets and headcounts ceilings, but these are minor constraints if they can demonstrate that what they want to do makes sense in the overall organization, as well as provides better information for decisions and saves money.

Nevertheless, there are pitfalls and traps we must recognize and deal with. For the remainder of this paper, I will try to identify these, and outline what we must do about them.

The Special Library "Versus" the Information Center. To a considerable extent, this has become, or should by now have become, the great non-issue of the 1980s. The initial development of information centers, and most particularly technical information centers, was based on the premise that libraries only operated in the passive environment of ordering material as requested, circulating it on demand, and borrowing it where necessary. Information centers, staffed by subject specialists, would interact with the information needs of the client, and then refer the specific document request to the library. Information centers and special libraries cannot coexist in the same organization without trivializing the library into a supply room or purchasing department. For several years my facetious, and yet serious response, to questions about the difference between managers of special libraries and managers of technical information centers has been "about $5,000 a year in starting salary."

The Special Library and the Information Analysis Center. This also must be listed although it should no longer be an issue. The implementation of information analysis centers (IAC) was first urged by Alvin Weinberg, who argued that scientific and technical information analysis was one of the greatest responsibilities of senior scientists. *(1)* IACs, as envisaged by Weinberg, analyzed documents, determined those with and without value, made recommendations to ultimate users, and prepared briefings and digests that dealt with content analysis and evaluation. The idea may have been good, but it never came to fruition. A few such centers were started (Weinberg's recommendations, then as now, must be taken seriously), but they foundered and disappeared when the suggestion of cost recovery began to be raised. Moreover, Weinberg's belief that the best and the brightest of the cadre of technical and scientific professionals should concentrate on information work never took hold. These individuals perceive, and continue to perceive (probably correctly), that their rapid path to advancement lies not there but in the laboratory, in marketing, or in administration. The reverse phenomenon occurred, and individuals with technical, but without library, backgrounds who have gravitated to our arena of work must be looked at with suspicion.

The Special Librarian and the Computer Center Manager. Increasingly, corporate organizations have placed the library under the management control of the group that selects, manages, maintains, and programs computer hardware. The decision to place special libraries into this organization probably follows most directly from the fact that nobody really knows where libraries do fit. They can be placed in Research and Development, but librarians are not laboratory scientists. They can be placed into an Administrative Services group, but they have little in common with the supervisors of cafeterias, mail services, and duplication centers. The truth is, of course, that libraries don't really fit well into any larger group any more than the corporate legal staff does. However, of all the possible reporting relationships for the special library, reporting to the computer services organization is perhaps the worst. Years on the board of directors of the American Federation of Information Processing Societies have convinced me that there is almost an unavoidable conflict between those who promulgate computers and their use as inherent and obvious good things, and those whose search for

solutions to information problems inevitably brings them to a consideration of technology. Special librarians do, indeed, need computer professionals, but they need them as service experts contracted to implement needed protocols, to acquire the hardware and software appropriate to what the special librarian wants to do, and to fix what is broken.

The Special Librarian and the MBA-trained MIS People. Special librarians rarely report to these individuals, in large part because they rarely care to be weighted down by operational management responsibilities, perhaps least of all by librarians. The difficulty here is that these individuals, well versed in writing concept papers, making impact presentations, and presenting three-color graphics, don't know how to run information systems that deliver information in a form in which people can use it. The greatest danger, then, is two-fold. The first is that because they are pretending to run the information system, there really won't be any at all. The other is that the special librarian will end up doing all of their work, while they get the credit.

The Special Librarian and the Organizational Philosophy Toward Decentralization. The tendency toward decentralization of organizational decision making into so-called profit centers is both the result of an attempt to bring responsibility to the lowest possible organizational level and to implement the "small is beautiful" philosophy so prevalent in the last decade. In principle, and probably in practice, the premise makes sense for a lot of operations. After all, individuals at the most operational level should know best of all what they need and what they are willing to pay for. This does not work for special libraries, precisely because users can't really tell a good library from a bad one unless they've previously had access to a really good one. They can, of course, tell a cheap library from an expensive one, at least in terms of immediate and visible cost. We know that cheap libraries can lead to very expensive problems. Decentralization of decision making and library service tends to lead to very unequal levels of library service within the same parent organization. To the extent to which information ignorance develops that may seem acceptable (more likely unknown) to the local management, but the subordinates, whose development is thus stunted, frequently end up working for someone else, who then becomes the victim of the first managers avarice. Decentralization of library service also leads to overlap and duplication, gaps, and confusion. Library service points do need to be decentralized and brought close to the work area of the specific patrons, although telephones, terminals, and electronic messaging can go a long way toward overcoming this problem. The development of special library policy for the organization and its management, however, needs to be a centralized process to ensure consistency and effectiveness. There is precedent in maintaining centralized services in an otherwise decentralized environment. It occurs most frequently, and quite correctly, in the approach to Legal Departments. Corporations can't afford inconsistent and contradictory legal advice, and the level of legal service is taken out of the hands of local managers. The same scenario should apply to special libraries, but we haven't made it as obvious.

The Special Library and the Overhead Budget Process. Special libraries are overhead organizations. It is probably better to recognize rather than hide this fact, because attempts to find allocation mechanisms for library costs to direct groups, by asking them to buy what they perceive as needed library services, usually lead to expensive record keeping and to the perception of libraries as nickel and dime operations concerned primarily with detail. There are many parts of corporate organizations for which the premise of a centrally budgeted overhead operation is accepted and recognized. These include accounting, personnel, and, of course, the chief executive officer and his staff. Their costs are allocated to user groups but not negotiated with user groups. The only difference is that they protect themselves better than we do.

The Special Library and User Expectations. Many professional users come from academic institutions to posts in which they will be served by special librarians. As students, they were prepared to expect little except harassment by rules. Through experience in numerous special library posts and consulting assignments, it has been my observation the users of special libraries, like the users of other libraries, accept what is offered to them and consider it adequate, even good. They accept our limitations of service in part because they like us and don't want to make

trouble for us, *(2)* and in part because they have at least two alternatives to getting things from the library—getting it themselves or pretending they didn't need it in the first place. *(3)*

The development of adequate user expectations requires that we create, quite consciously and despite the probable reluctance of our own managers, an imbalance between what we can give people and what we tell them they ought to have. Creating that imbalance is marketing, and one very simple definition involves convincing individuals that they need what they do not now have. For special librarians this is not any sort of self-serving process, because our users frequently do not know what they could have until we tell them. Special librarians and, for that matter, managers in any other field, who never offer a service until they know how they are going to budget for it during the following year, are not likely to offer many new services.

The Special Library and the Failure to Control Organizational Information Cost or Turf. In other writings, I have commented on the failure of librarians to control their "turf," and probably nowhere does that issue become more crucial to success and survival than in corporate libraries. *(4)* It is the uniqueness of a skill or capability, or the unique authority to perform a certain function, that provides us with the primary source of authority. We already know from many management writings that most authority is not acquired through the legitimate process of formal assignment. It is seized as necessary to complete whatever it is we have to do. Purchasing agents understand issues of turf very well. After all, anyone can purchase. One finds a vendor, arranges a deal, and pays the invoice. The turf of the purchasing department comes from the fact that the rest of us aren't allowed to do what it does.

What is the special library's turf, and its exclusively? Here we run into two potential problems. The first is that we have no automatic exclusive hold on the information-gathering process. Others can do it, as long as they have money and higher-level management lets them. They can acquire books and journals; they can contract for online searching and document delivery. This leads to the second problem. They usually *do* have more money than the library does, because it is the formal library budget and not the dozens of pseudo-library budgets that receive scrutiny. Some special librarians even hasten this dilution of their own authority by urging user groups to spend their own money for library materials in the absence of adequate library funding, and of course library funds are always inadequate. The role for the special librarian here must be to claim and insist on his or her exclusivity, as purchasing agents have always done.

It is easy to demonstrate that such centralization is economically efficient, both because we can inevitably do information work better, faster, and cheaper and because centralization of information costs provides far better organizational monitoring and mechanisms. The application of "turf" here is really quite simple. Either we get to do it or nobody gets to do it. If there really is no money, then make the others stop. Direct/indirect differentiations are irrelevant in the framework of corporate profitability. Money is money, no matter how spent.

Special Libraries and Organizational Propaganda. Management pressures for greater economy never end. In part, this is because there really may be financial problems, but primarily it is because corporate executives don't know what to spend in support of subsidiary activities, and because they know that assertive and ambitious managers will acquire more resources if there is ever any letup. Pressures to save money usually couched in hysterical terms are incessant, and individuals must learn to sift the reality from the verbiage.

Special librarians appear particularly vulnerable to the suggestion that they be "good soldiers" and absorb into their units misfits whom the personnel department would rather not fire, but for whom no other willing supervisor can be found. This phenomenon has become so common that special libraries can become known as a personnel dumping ground. Personnel administrators do this quite dispassionately, in part because they (along with others) don't understand the importance of high-quality staff in the library, and in part because librarians appear to be tractable victims. Special librarians also become easy targets for the suggestion that they somehow do more with less or at least as much with less, despite the warning by Hedberg a decade ago that such absorption only serves as a self-

indictment for having squandered money in the past.*(5)* Management has the right to change budgets and, specifically, to decrease them. However, budget changes lead to a reformulation of programs and plans, which must, in turn, be approved by the very management that cut the budget. Declines in service, therefore, become their decision and their responsibility.

Special Libraries and the Need to Justify. Tons of management literature tell us that higher-level management requires exception reporting. That is, it is assumed that subordinates will claim credit for everything that went well, but they are likely to hide their problems from their bosses, and it is precisely that information that managers most need. Special libraries tend to be measured not by what they do, but by how much they spend. Since they spend very little, but are usually suspected of spending too much, any management discussion limited to the budget is a disaster from the outset.

Special librarians, in their formal and informal communication devices, need to do exception reporting. They need to communicate what went wrong or, more likely, what didn't happen when it should have. Some special libraries do attempt to do this, in documents that describe the size of backlogs and lists of unpurchased materials. However, such justifications that focus inwardly on the library and its value system are doomed from the start. The parent organization is not in the business of having a strong library, but it may want a strong library if it can be demonstrated that other things of more direct consequence will happen if there is a good library, or won't happen if there is a poor one. Library shortcomings need to be expressed in terms of impact on users and, most specifically, the key user groups whose success is so crucial that nobody will risk shortchanging the library if, as a result, he or she might be blamed for a larger failure.

The Special Library and the Clerical Trap. We have all known for some time that all libraries are clerical traps; that is the work needed to keep the library functioning and the work most closely perceived by our patrons is clerical in nature (ordering, filing, photocopying, circulation, overdue notices). The professional work (literature searches, information dissemination, advanced reference) is not necessarily expected of libraries; although, when provided, it is always welcome. The clerical trap is sprung on us when there are not enough clerks, and, of course, there are never enough clerks. In corporate situations, where hiring freezes and headcount ceilings are a way of life, this problem is considerably worse than in academic libraries, which have an endless supply of cheap student labor. In companies, by contrast, clerks are expensive, and clerks in overhead organizations bear the double burden of being considered expensive and not visibly contributory to overall organizational goals. Special library managers are not likely to change this mind-set, but they must be careful to make their plans and programs fit the resources provided, particularly in the clerical area. Otherwise, all the professionals become clerks, and this is perhaps strangely acceptable to our management because its own history tends to consider libraries as a series of clerical routines. It is a necessarily strong special librarian who then insists that clerical functions be staffed or left undone, and this must be justified not in terms of personal pique or pride but of organizational effectiveness and economy. It makes no economic sense for professionals to do clerical work, and accountants can understand this. Precisely because clerical staffing in corporations is in such short supply, the clerical tasks available to libraries without competitive challenge are almost limitless. The clerical trap for special libraries is that professionals perform clerical *instead* of professional work. That cannot be tolerated, precisely because it is wasteful for the parent organization.

Special Libraries and the "Morality" of User Self-service. It has already been noted that libraries, as they are visualized by users who have run the university gauntlet, are educational adjuncts designed to promote user self-sufficiency. Some of these individuals become corporate officials, for whom the issue of self-sufficiency becomes a self-evident moral good. The issue never arises with regard to clerical tasks, which are willingly shunted to the library, but it comes to view most frequently in discussions of such activities as online literature searching, because, with decentralized terminal access, ultimate users *can* do their own literature searching. The question is whether or not they should. Here the special library's stake is crucial, and it is

bewildering and depressing to find special librarians who seek to rid themselves of the task of bibliographic searching because "they are too busy." Can users do this better and at a lower cost? Generally not, although there are exceptions. There is no moral issue here. Users who want to do their own online searches should certainly be taught to do them. However, most will quickly tire of the novelty, and, if they find they can delegate this process to a special librarian who will do it quickly, effectively, and without economic hassle, they will.

The real crime comes when libraries vigorously espouse end-user searching, not as some perceived increase in service quality or effectiveness, but rather because this becomes the most "convenient" way to accommodate a cut in library budget or in library staffing. When this happens, the organization does not save money; it spends more money, but forces the cost underground. Such a scenario might be acceptable to the librarian's immediate supervisor, but it cannot be acceptable to top management if top management can be made to see what shell games are being played. It then becomes the librarian's clear responsibility, as the organization's cognizant information professional, to make sure that top management does know, even if this involves some risk.

Conclusion

Despite all of these dangers and pitfalls, the future for special librarians is bright if we seize our opportunities. This is because information needs are great and growing, and they are recognized as growing and deserving of financial investment. Our risk is that others may take this work away from us, and relegate us to the clerical tasks. We can always continue to count circulation and interlibrary loan statistics if that will satisfy us. If we lose this battle, it will be strictly a political loss, and not based on evidence, because there is no question in my mind that we are best prepared and best qualified, and that we can handle professional information needs in the special library's parent organizations more cost effectively than anyone else.

To do this, we must remain incessantly professional. Professionals, according to some definitions, are individuals who control the interaction between themselves and their clients. Doctors, of course, do this, and so do lawyers. For special librarians, this means that we frequently give our patrons what they want, but it is more important that we give them what they need, and it is most important that we understand and make them understand that at times they don't know what they need, and that there is nothing wrong with that admission.

Special librarians can, and must, lead the way into this new professional area of interaction, as they led their librarian colleagues into the integration of non-traditional materials, automation, selective dissemination of information, and the recognition that, in delivering materials to patrons, speed is more important than cost. Special libraries are better equipped to ward off trivialization—the greatest of all enemies. Our users are not fascinated by what we do, and are willing to judge us by results rather than by methods. The next step is to make them care more about what we do than how we do it, and that can be accomplished. Being cheap will not save a special library. Only being valuable enough will. Good libraries are not necessarily cheap, because cheapness is the ultimate irrelevancy in a billion dollar corporation. But they are effective, and they are worth what they cost. We do indeed put knowledge to work, because no organization can afford to have knowledge ignored or wasted.

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Information Access in Niger:
Development of a West African Special Library

Charlene M. Baldwin

Robert G. Varady

■ **Librarians and information managers in the United States increasingly are in demand as consultants and advisors to international library programs. The development of the Documentation Service of the Ministry of Planning of the Republic of Niger is one example of a short-term consultancy in an international special library setting. The effort described demonstrates application of an automated database management system, and formulation and implementation of library management policies and procedures.**

SINCE the early 1980s, the Ministry of Planning in the West African nation of Niger has cooperated with the United States Agency for International Development's (USAID) Mission to Niger on an Evaluation Assistance Project.*(1)* This effort has resulted in the formation within the Ministry of a Directorate of Programming and Project Evaluation (DEPP), a significant step toward more successful monitoring and evaluation of economic, agricultural, and educational development in Niger.

From its inception, the project included plans to develop a centralized documentation facility intended to support the Ministry's activities. Even before the creation of the center envisioned by USAID, a small repository existed. The Ministry encouraged employees to deposit reports and other items in this center, hired professional staff, and sent one individual to Dakar, Senegal, to be trained as a documentalist.

To help the Ministry establish its documentation capability, USAID sought the services of a technical assistance team. In collaboration, the two institutions determined the Ministry's needs and prepared a set of terms of reference to guide the eventual contract.*(2)* They wanted an external consultation which would put in place a system of documentation management intended to permit: 1) circulation of available documentation to the various

ministerial users; 2) storage and accessibility of the documentation necessary for the Ministry's work in planning, programming, and evaluation; and 3) more efficient use of the information available to the Ministry of Planning.

In order to attain these objectives, the assistance team was expected to: 1) assess the nature and size of the holdings currently in the documentation service; 2) evaluate existing policies and procedures governing the service; 3) develop new policies and procedures to systematize acquisition, circulation, and retrieval of the documentation; and 4) create a computerized cataloging system in order to retrieve documents quickly and accurately by employing standard cataloging parameters.*(3)*

In early 1984, representatives of the University of Arizona's Office of Arid Lands Studies (OALS) visited Niger to discuss plans for improving the Ministry's capacity to manage its documentation and information resources. Two years later, the Ministry contracted with OALS for a two-person, three-month field consultancy and limited home institution technical support, followed by a one-month training session at the University of Arizona.

Active in Niger since the mid-1970s, OALS conducts programs of research, evaluation, and information throughout the arid world. Its researchers primarily are concerned with environmental, ecological, agricultural, and economic issues. In particular, the Office's Arid Lands Information Center is experienced in assisting burgeoning documentation centers. This paper describes the above program, emphasizing work in Niger and describing each of its objectives.

Assessment of Existing Services

The Ministry of Planning's documentation and information facilities and services are organized into a unit known as the "Service de Documentation," headed by a "Chef de Service." This paper will refer to the facility as the "Service" or the "Documentation Service"; its head will be called the "Chef."

At the outset of the consultancy, the field team conducted a detailed survey of the Service's physical and human resources. This survey detailed availability and utilization of space and shelving; characteristics of the collection, including number of documents, amount of duplication, and distribution by subject; and organizational and personnel features. *(4)*

The team found that the Documentation Service is housed at four separate locations in two buildings. The general collection is on the second floor of the Ministry headquarters; archival materials are on the ground floor; the project-oriented working collection is on the third floor; and the Directorate for Statistics and Information (DSI) maintains its own facility about one kilometer from the headquarters.

These four sites offer about 162 square meters of floor space, and house an estimated 40,000 items, books, documents, periodical titles, archival dossiers, project notebooks, file folders of correspondence, and manuscripts. The preliminary survey found a high incidence of multiple copies (on the second floor, for example, there are eight duplicates for every 10 documents), and the collection exceeds available shelf space by about 10%.

The character of the collection reflects the Ministry's orientation toward development. About 17% of the materials in the general collection were published by the Ministry of Planning. Subject matter varies, but a preponderance concerns agriculture (20% of the general collection), economic development (8%), and hydrology and water resources (7%). Most of the documents were published before 1980. Physical arrangement of materials also varies: in the archives and general collection, documents are arranged in accession number order; at the third floor site, documents are shelved by project number; and, at DSI, issues of periodicals are grouped by title, but there is no other apparent organization.

Personnel to administer the four sites consist of the Chef de Service (who recently had completed a two-year training program in Dakar, Senegal, in 1985 at the Ecole de Bibliothéconomie), five library assistants permanently hired by the Ministry, two library assis-

tants hired on contract to manage the third floor project collection, and two clerk-typists. The Chef has no management or supervisory responsibility for the four library assistants at the DSI site and minimal responsibility for the other sites.

Management Objectives of the Project: Operational Policy Development

The results of the preliminary study revealed that major management issues required policy statements. Under the terms of the contract, the Arizona team and the Chef prepared office management policy statements on retention, collection development, circulation and distribution, classification, and organizational structure.*(5)* Documents outlining the policy recommendations were presented for approval to the Secretary-General (SG), the functional head of the Ministry, and the heads of the Ministry's directorates, or departments.

Retention. The first policy developed by the consultation team was a written procedure for selection and deselection. The collection includes numerous old documents, duplicates, and items inappropriate to the subject scope of the Ministry. Suitable deselection is critical, as collections exceed shelving capacity at three of the four sites. Selection procedures also were important, as materials were not reaching the center until they were too dated to be useful to technical cadres.

Deselection in a governmental library in Niger, however, is controversial. Once discarded or lost, a unique document cannot be replaced. Accordingly, officials viewed the National Archives as a possible destination for duplicates and dated material. But that institution required detailed preparation of transmittal lists and approval by all principals before acceptance. Moreover, the National Archives provided no assurance of retention. These bureaucratic requirements had, until now, posed insurmountable obstacles.

To address the above issues, the retention policy developed by the Arizona team recommended that the Ministry:

a) retain at least one copy (and in certain instances multiple copies) of all *current* materials relevant to the Ministry;

b) retain only one copy of each document with a publication date older than 1975;

c) critically review for potential retention duplicate copies of documents later than 1975.

Disarray in the Ministry's own archives posed a particular problem. The institution clearly needed an archival center to house project dossiers, file folders, and correspondence in support of various Ministry activities. Under existing conditions, however, the 16,000 dated and uncataloged dossiers exceeded shelf capacity by two-thirds and, for the most part, remained unretrievable. The consultants and the Chef decided to offer these records to the National Archives. In place of the existing ministerial archives, a new, controlled, retrievable archival collection would be established.

Collection Development. The Service's document collection supports the work of the Ministry. Prior to the consultation, however, document acquisition remained ungoverned by policy. Documents were neither ordered nor received by the Documentation Service. Rather, items were received by the cadres directly by mail or through internal distribution (via the central mailroom called the Bureau d'Ordre, a unit controlled by the SG). The SG assigned destinations by routing documents to cadres according to project responsibilities. Items found their way to the Documentation Service only when the original recipients had no further use for them, or when the SG received extra (unneeded) copies.

The collection development policy redirects document flow through the service and subsequently out to the personnel. Three types

of materials of interest to the Service were specified: documents generated by the Ministry of Planning itself, materials from other government agencies, and "external" items. The policy stresses the depository nature of the Service and reassures cadres that the Service will receive, process, and circulate new materials promptly.

Finally, in recognition of the Service's inability to collect items systematically, the policy recommends the Ministry provide the Service with an annual acquisitions budget. Funds would be allocated for purchasing appropriate books, periodical subscriptions, and other publications.

Circulation and Distribution. The circulation policy is primarily intended to assure the Ministry employees that most documents will remain available to be borrowed from the Service. The policy also recommends that certain documents not be circulated: 1) items possessing reference value, 2) important new documents of immediate current interest to a large number of people in a short period of time, or 3) old, brittle materials. Additionally, the policy restricts access to the Documentation Service by non-Ministry users, and outlines a procedure for registering each borrower in the circulation records of the Service.

The circulation and distribution policy was considered noncontroversial and signaled no appreciable variation from previous practices. Its novelty lay in its systematic articulation of appropriate guidelines and procedures for dissemination of documents.

Classification and Treatment of Documents. A standardized procedure for classification and treatment of documents is essential in a smoothly functioning center. At the same time, articulation of these procedures is a complex and tedious task. This policy statement was therefore most detailed, recommending radical changes in the treatment of materials in the collection.

First, and most significantly, the policy stipulates all items will be classified by subject. At the time of the field consultancy, the Service was organizing its documents according to several methods: by three separate accession number systems in the general collection; by project number in the smaller working collections; by periodical title at DSI; and by no apparent system in the archives.

The subject classification system chosen is the one prescribed in the *Macrothesaurus pour le triatement de l'information relative au développement économique et social. (6)* Known as the *OECD Macrothesaurus,* its eight-character numbering system classifies a document in 1 of 19 general subject categories. This system, successfully used by many other documentation centers of this type around the world, was already available in the Ministry. The scheme is easy to use, possesses a very detailed keyboard index, and is tailored to the kinds of documents produced by the Ministry of Planning.

Second, the classification policy details the actual physical flow of a document through the system, from its arrival at the Ministry, to the assignment of the classification number by the Chef, to the physical labeling of the document and its placement on the shelf, or its transmittal to the correct office by library assistants.

Third, and most important for the consultancy, the classification policy states that the information regarding each document is to be entered into a computerized database, utilizing existing computers at the Ministry and software available in Niger.

Computerized Cataloging System

Fortuitously for the success of the short-term consultancy, the necessary computer and supplies were already available in Niamey. Equipment included an IBM-XT computer with 512K RAM memory, 10-MB hard-disk drive, monitor and keyboard, IBM Proprinter, and supplies: copyflow paper, ribbons, and diskettes. USAID advisors to the Ministry had recommended the purchase of several pieces of software, so the hard-disk on the Documentation Services' computer was immediately

installed with MSDOS (in French), WordStar, WordPerfect (in French), and dBaseIII (in French).

The Arizona consultants selected a bibliographic database management program called CDS/ISIS to implement automated cataloging in the Documentation Service. *(7)* This program is available at no charge to UNESCO-participating nations; RESADOC, a regional network headquartered in Bamako, Mali, disseminates the program throughout West Africa.

CDS/ISIS is a menu-driven system especially effective for management of bibliographic records in a small- to medium-sized library collection. It is designed to run on a hard-disk, but will also run smaller databases on a microcomputer equipped with two disk drives. Maximum storage capacity for a database on the hard disk is about 32,000 records. *(8)*

The CDS/ISIS system requires about a half-megabyte of memory to load the program. Its six main program files allow the user to:

- Define databases;
- Enter new records into a specified database;
- Modify, correct, or delete existing records;
- Retrieve records by their contents, through a sophisticated search language;
- Sort the records in any sequence desired;
- Display the records or portions thereof according to variable formats;
- Print partial or full catalogs and indexes from any named database. *(8)*

Ease of learning. UNESCO provides three diskettes that include the program files and a sample database on which to practice. A detailed three-part written manual provides the necessary documentation. Unfortunately, there is no online help. Additionally, the user manual is difficult to use, lacking index, glossary, and explanatory tables for coding, printing, and indexing the database.

Ease of use. Despite the abstruse manual, several features of this program render it relatively easy to employ. First, it is menu-driven. While slower for the experienced user, the availability of choices for operations is critical for the novice. Second, the division of this program into six distinct program files permits conscious initial choices: to edit, to print, or to work on the inverted file, for example. This division of operations also protects the database; thus, one cannot edit or delete a record inadvertently while establishing print or sort options.

Performance. The system is fast. Searching is virtually instantaneous; creation of the inverted file requires only a few seconds per record. Calling up existing records in the edit mode is reliable. The documentation implies that as the size of the file changes the time needed to invert the file increases significantly. This is not a serious flaw so long as the database parameters remain unchanged, for when a record is edited or a new record added, the system updates the inverted file at the conclusion of the edit session without having to update the whole file.

Record input/editing. Set-up is a bit harder to accomplish. The Field Definition Table, Field Select Table, and Display Formats must be assigned and coded prior to data entry. Happily, it is non-destructive to enlarge field sizes, add named fields, and change the field definitions after creating a database.

Record Selection. Record selection, or searching, is one of the most attractive features of CDS/ISIS. Records can be selected by accession number or searched by various parameters. The system permits Boolean logic (utilizing standard symbols), nesting, right truncation, same field of occurrence, and proximity searching. The user also may create a searched set, save it, change its format, print it, or export it to another database.

Sorting. Sorts are temporary adjustments created on demand to print a set of records. The database in CDS/ISIS is not *permanently* resorted, as all records remain in their original

order of entry. Sorting may be accomplished to three levels, and the user may employ prepared sort and formatting options. It is also possible to create a stop-word list for searching and sorting.

Indexing. An inverted file can be created for every term in the fields identified as searchable. Records with repeatable fields, such as multiple authors or multiple keywords, are assigned a posting for each field element. The user may create a printout of the inverted file that includes posting frequency of each term.

Report Generation. Printed products can be created in a variety of ways. The whole database can be printed in accession number order, or sorted and printed by any tagged field. A search set can be saved, sorted, and then printed. Prints can be run in any desired format. Formats can be preprogrammed and saved for reuse, or formats can be temporarily created at the time of print setup. The system does not dictate use of any preloaded formats. In Niger, the Documentation Service decided to print several full database products as an alternative to a card catalog.

Organizational Plan for the Service

In order to assure efficient and proper operation of the Documentation Service, the Arizona team recommended an organizational plan as a fifth policy statement. The purpose of this plan was threefold: 1) to clarify the position of the Service within the Ministry, 2) to provide an internal organization scheme for the Service, and 3) to prescribe job descriptions for the staff.

The first purpose establishes the Documentation Service as an autonomous center serving all the Ministry's directorates and reporting directly to the SG. The second point of the organization plan treats internal structure and function. It divides the Service into: 1) a Technical Division, within which the Chef and his library assistants would maintain reference services, cataloging, classification, treatment, and circulation of documents; and, 2) a newly-created Administrative Division, requiring additional staff. The Administrative Division would manage financial and general concerns of the Center, and, in particular, would act on matters relating to budgets, equipment and external publication orders, inventories, personnel management, space allocation, physical maintenance of the sites, maintenance of the equipment, photocopying, and official correspondence. Since the proposed reorganization crossed traditional lines of Ministerial responsibility, the plan was perceived as somewhat controversial.

Training

Because the field consultancy was so brief, training the Chef and his staff on the use of the computer and CDS/ISIS was the most important factor in ensuring the success of the automated catalog and ultimately the measure of the success of the consultancy. The Chef de Service, the documentalist designated as the principal user of CDS/ISIS, had used computers while studying in Dakar. Additionally, some cadres within the Ministry already were applying computers for data analysis and report generation. Nevertheless, the Chef was a neophyte in computer applications.

Field training was divided into four phases. The first phase emphasized familiarity with the computer keyboard as a typewriter and was accomplished utilizing the program called "Typing Tutor." *(9)*

The second phase of training included an appreciation of the complete computer keyboard and the power of the computer itself. This objective was accomplished via training and experience in word processing and emphasized:

- The interrelationship between the computer and its keyboard, screen, and printer;
- Storage of files on the hard-disk and the floppy diskettes;

- Booting up and proper shutdown of a computer system;

- Concepts of creating files and storing, retrieving, revising, renaming, and then resaving them electronically;

- Principles of file maintenance; the necessity to name a file, remember its name, save or erase it, and back up important files.

The third phase of training consisted of development and implementation of the CDS/ISIS automated library catalog. The Chef worked closely with the Arizona team to identify desired features for the system. *(10)*

The fourth step was "hands-on" application of the entire system. Because of his experience using the computer, first as a typewriter and then as a text editor, the Chef became comfortable tackling the much more complicated task of using the database management system.

CDS/ISIS proved to be a reliable program and the consultancy concluded optimistically. *(11)* The Chef de Service had acquired enough experience to enable him to continue to input records and to search for them. During the last week of the consultancy, the Chef met with the Directors in the Ministry and demonstrated the CDS/ISIS system. From the perspective of the consultancy, he was in fact demonstrating not merely his mastery of the computer and software, but his general expertise. The Chef's progress augured the likelihood of successful continuance of the work.

Six months after the conclusion of the field consultancy, the Ministry continued its support of this effort by providing additional training for the Chef de Service. In the summer of 1987, he sharpened his skills at a specially designed session at the University of Arizona. *(12)* This customized program advanced the documentalist's expertise in CDS/ISIS by including hours of hands-on time developing new databases, such as a circulation module, and a file of the Niger documents housed at OALS. The training program emphasized library management skills, resource allocation, and close observation of special libraries in the region.

It is the consensus of all observers that the Documentation Service of the Ministry of Planning will in fact continue to grow in size and complexity. The Arizona team helped build a solid base of policies and systems that will facilitate access to information and make the Service more reliable during the approaching growth period.

Conclusion

This project assessed the existing documentation service of the Ministry of Planning and proposed management policies and procedures for future administration. In the course of the effort, Arizona consultants introduced an automated workstation to serve as a word processing center and, more importantly, as a fully-searchable online catalog for the large (and growing) documentation collection in the Ministry. A multi-phase training program afforded ample hands-on time and provided customized written manuals for future consultation. The follow-up visit of the documentalist to the United States, six months after the field intervention, offered valuable reinforcement of technical and managerial skills.

Short-term consultancies of the type described above demonstrate the ability of U.S.-trained library and information managers to assist international librarians in achieving their goals of increased access to information.

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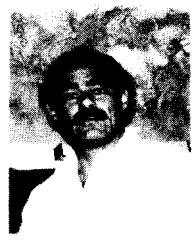

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CPM and PERT in Library Management

Linda Main

■ **This paper discusses two techniques of systems analysis, Critical Path Method (CPM) and Program Evaluation Review Techniques (PERT), and their place in library management, as well as provides an overview of CPM and PERT charting procedures. The techniques discussed can be used by library managers to structure various tasks and to project start and finish dates and resource allocations.**

Introduction

A project is a coordinated set of activities with a beginning and an end. Complex projects (moving a library, switching from a manual system to an automated one...) require that multiple activities be carried out in parallel. Critical Path Method (CPM) and Program Evaluation Review Techniques (PERT) are systematic techniques which can be used when there are a variety of ways to achieve a particular objective. They enable the project manager to schedule and to predict a completion date for a project. Both techniques are widely used outside the field of librarianship, and despite the statement by Wildavsky that they only work in the construction industry and have no place in information systems, *(1)* this paper will argue that CPM and PERT have a place in library management.

Both techniques were developed in the 1950s to improve the planning, scheduling, and control of structured programs in business and government. CPM was used to monitor the Polaris Missile Program and has been heavily used in construction and engineering. PERT has been used with some degree of success in ear surgery. *(2, 3, 4, 5, 6, 7)*

The basic purpose of both techniques is to divide a complex project into a series of shorter independent tasks, and then to see which ones are critical to the overall completion of the project—critical in the sense that any delay in a particular job results in a delay of the entire project.

The essential difference between the two techniques is that CPM treats a project as a series of activities; PERT sees it as a series of events occurring in a time sequence, and uses probabilistic techniques to estimate the expected time required to complete an event. The type of questions that can be answered by applying CPM/PERT are:

- When will my project be completed?
- How much will it cost?

- Is the project ahead of or behind schedule?

- How does delaying an activity affect project completion?

- What is the probability that the project will be completed in, e.g., 50 days?

In recent years, there has been an amalgamation of the two techniques of CPM and PERT *(8, 9, 10)*; it is the amalgamation that makes CPM/PERT most useful for library managers. The heart of CPM is kept, namely the network diagram (a graphical job plan that shows all of the operations necessary for task completion, and the order in which they will be completed). By adding in the probabilistic techniques of PERT, the network diagram can portray, in simple and direct form, the complex time relationships and constraints among the various segments of a project. This accommodates modifications, refinements, and connections.

CPM/PERT In Library Management

It is scarcely possible to open a librarianship journal without encountering articles advocating, denouncing, or simply discussing, some aspect of library management. Like Moliere's bourgeois, who had difficulty in accepting that he had been speaking prose all his life, the key to developing librarians as managers would appear to be to convince them that they really do speak prose, and all they need is a little help with grammar. So what does CPM/PERT really have to offer library managers? Certainly not a quick way out of pressing difficulty, or a cure-all for years of (someone else's) neglect, CPM/PERT can do for library managers the same thing that grammar does for language. They structure, systematize, clarify, and economize on something librarians already do. They enable library managers to set up task blocks, each of which includes start and finish dates and resource allocations. Those task blocks can be linked through critical and noncritical pathways, representing the evaluation of the relationship among the various tasks. Critical pathways specify those steps that must be followed if successive stages of a project are to be done at the proper time. Noncritical pathways specify parallel activities that can be fitted in when convenient.

It is true that CPM/PERT are often described as "management by exception" processes. *(11)* Management by exception focuses attention on critical items of work and emphasizes the prompt and explicit identification of deviations from the accepted plan. Reports that highlight exceptions from the standard enable the library manager to recognize quickly those project areas that need attention and to avoid expending valuable time on routine problems best handled by subordinates, such as clerks. So long as an item of work is progressing satisfactorily, there is no need for action, since there are always plenty of problems that require attention. This presupposes, of course, that the library project manager can appreciate what matters and what does not.

Insignificant variations can portend big trouble if not corrected promptly. This is where judgment and experience are important in a librarian. Nonetheless, "management-by-exception" devices are useful.

CPM/PERT Charting Procedures

In CPM/PERT charting, the segments into which a project is subdivided for planning purposes are called activities. An activity is a single work step that has a recognizable beginning and end, and requires time for its accomplishment. The extent to which a project is divided into activities depends upon practical considerations:

1. By area of responsibility;

2. By category of work;

3. By distinct structural elements;

4. By location of project;

5. With regard to financial breakdown for payment; and

6. With regard to breakdown for estimated cost.

The activities used may represent relatively large segments of a project or may be limited to small steps. Trial and error, together with

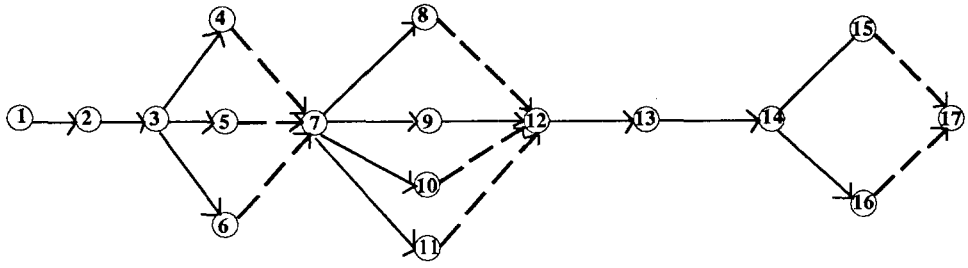

Figure 1
Event Identification

1. Start Project
2. Complete Problem Statement
3. Complete Question and Hypotheses
4. Complete Note System
5. Complete Abstract System
6. Complete Document Sources Identify
7. Start Source Material and Evaluator
8. Complete Primary Sources
9. Complete Secondary Sources
10. Complete External Criticism
11. Complete Internal Criticism
12. Start Interpretation
13. Start Conclusion
14. Complete Conclusions
15. Complete Narrative
16. Complete Bibliography
17. Project End

experience, are the best guides regarding the level of detail needed in a specific library situation. Too little detail will limit planning and control effectiveness; too much detail will drown the project and the library manager, and will obscure the really significant factors.

Thus, the first three steps in CPM/PERT are:

1. Determine the job steps or activities that must be performed in order to construct projects;

2. Ascertain the sequential relationships among these activities; and

3. Present the planning information in form of a network diagram.

Job logic refers to the determined order in which the activities are to be accomplished in a given library. The start of one activity depends on the completion of others. It is the library manager's responsibility to winnow workable choices and select the most suitable alternates. There are a number of ways in which job logic can be expressed. A listing that shows for each activity, those activities that can start immediately after the activity is finished, is a simple method of recording job logic. The network diagram itself is nothing more than a graphical display of job logic presenting, in pictorial form, all the dependencies among activities. In general, job logic evolves as the project is talked through by the library's staff and the network diagram progresses.

To be realistic, a job plan must reflect the practical restraints or limitations that apply to library job activities. These restrictions of job logic might be called physical restraints on materials (books, magazines, etc.), resources (equipment, etc.), etc. The recognition and consideration of job restraints is an important part of job planning in a library. Failure to consider such constraints can be disastrous to an otherwise adequate job plan.

There are commonly accepted conventions used in regard to the drawing of networks (see figure 1). Each activity is depicted as an arrow. Arrows imply logical precedence only. Neither the length of an arrow, nor its compass direction, have any significance.

The sequential relationship of one activity to another is shown by the relative position of the arrows, and the essence of the diagram is the manner in which the several activities are joined together into a total operational pattern or network. Every activity in the network must

have a definite event to mark its beginning. This event may be either the start of an activity or the completion of the immediately preceding one.

It is not possible to have the finish of one activity overlap the start of a following activity. Where such a condition potentially exists, the work must be further subdivided by the librarian. (Broken lines show dummy activities, i.e. non-time-consuming activities.) The network must be continuous with no gaps, discontinuities or dangling activities. Consequently, all activities must have at least one activity following, except those that terminate the project.

The circles at the junctures of arrows are called "nodes." All arrows start and finish at nodes. A node might be described as that instant of time when the latest finishing activity coming into the node has just been completed. It is customary that the node at the head of an arrow be numbered higher than the node at the tail. Originally done to facilitate computer use, this practice makes it easier to locate activities on a diagram and protects against logical loops. A logical loop is an arrow or string of arrows that loops back to the start of an activity that has already been done. No activity can be followed by an activity chain that leads back to the start of that activity. The general synthesis of a network is from start to finish, from project beginning on the left to project completion on the right. It is important to emphasize that there must be only one starting place and one ending place for the whole project. It is often useful to construct a central chain of activities as network backbone with branching activities looping above and below. (See figure 2 for a simplified approach to CPM/PERT.)

It is no longer necessary to laboriously construct charts by hand, although preparing the network forces the library manager to think the job through completely from start to finish.

Figure 2
A Simplified Approach to PERT

1. List all activities required for the project
2. For each activity determine the dependencies
3. Draw the arrow diagram
4. For each activity estimate
   optimistic time a (one chance in twenty)
   pessimistic time b (one chance in twenty)
   most likely time m
5. expected time = $\frac{a + 4m + b}{6}$

   Activity variance = $\frac{(b - a)^2}{10}$

6. Do the forward analysis to get the earliest times
7. Do the backward analysis to get the latest times
8. Determine the critical path
9. Event variance = the sum of the activity variances in the critical path for that event
10. Event standard deviation = $\sqrt{\text{event variance}}$
11. Use a normal distribution table to determine the probability of completion by a specific date

There are several good software packages available for the microcomputer. The flexibility given by the microcomputer means that you can try alternative designs, "what if" situations, different methods of accomplishing the project, thus gradually arriving at the best combination of timeliness, resource allocation, and profitability.

MILESTONE is an inexpensive PERT chart generator. It performs critical path analysis for jobs with up to 300 tasks; the program computes milestones (critical events), monthly manpower levels, and monthly costs. If new tasks are entered, the program will rearrange itself and make the new information part of the critical path.

TIMELINE allows for an unlimited number of resources and cost categories, summarizing resources and costs as well as time. If one value is changed, the program will automatically recalculate. It can do any amount of backing and filling necessary to arrive at a workable time line, and can store up to five revisions of any schedule.

QUICKPLAN permits comparison of planned versus actual expenditures on a project. Data input is broken down by resources devoted to each task, such as personnel or equipment. The program assigns identifier codes to the resources, e.g., some personnel and equipment from one department, some from another. Resource schedules, as well as cost and expense reports, can be turned out by department.

SUPERPROJECT allows for 80 tasks and permits a GANTT chart—a horizontal bar chart in which each task can be seen in a time relationship to all the others. GANTT charts, however, do not convey ranking in time among activities.

Conclusion

The library manager using CPM/PERT:

1. Provides a means to predict, with reasonable accuracy, the time required for overall project completion;

2. Makes possible the identification of those activities whose expedient execution is crucial to timely project completion;

3. Has a guide for project shortening when the completion date must be advanced;

4. Provides a basis for the scheduling of material deliveries to a library site;

5. Has a basis for balanced scheduling of the workforce and the equipment on the project;

6. Makes possible the rapid evaluation of alternate methods in the library project;

7. Has a convenient vehicle for progress reporting and recording; and

8. Affords a basis for evaluating time effects of changes and delays.

Job site conditions may be encountered that are appreciably different from those originally contemplated. Labor shortages, equipment breakdowns, late book deliveries, etc. may cause the work to fall behind schedule. Changes of this sort can involve the costs of extra work and extensions of contract work time. The time and cost consequences of many project changes are difficult to analyze, especially in a form that can be used as evidence to persuade the library manager's superiors. The CPM/PERT network diagram is one of the most powerful and effective vehicles available for such analysis.

As changes occur, network analysis is effective in determining the time-effects produced. Such time-effects are also often of great value in determining the cost consequences of project changes. The question might be posed: since a degree of probability is involved, does a library manager really achieve much by taking the time to set up a CPM/PERT chart for a project? The answer is yes.

The major achievement of using a CPM/PERT chart is that activities are laid out in a way that enables the library manager to totally think through what projects need to be done. CPM/PERT charting formats time within boundaries and intervals, which is an effective way to think about planning. It allows the library manager to know when things are tight or when things are loose, when it will be very difficult to meet the deadlines or when there is some slack in the project. It reduces planning to the devising of a workable system of operations, which is designed to accomplish an

established objective when put into action.

The network-based management system uses logical and simple procedures for reducing large volumes of complex information into a form that can be readily understood and analyzed. A library manager can then easily combine summary data together with more subjective considerations (like public relations, staff morale, etc.) into a total consideration for decision making.

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Expanding Horizons in Collection Development with Expert Systems:
Development and Testing of a Demonstration Prototype

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■ **Librarians and information specialists have displayed a growing interest in expert systems, particularly for online searching and reference assistance. The development of a demonstration prototype expert system for a new research area and collection development is described. The Monograph Selection Advisor, built using a six-step process, models the item-by-item decisions a bibliographer makes in selecting monographs for a narrow subject area. Although it remains rudimentary, this project has shown the feasibility of building expert systems in this area. A number of problems needing additional study were identified.**

WE will continue to expand our capabilities as librarians and information managers in a complex, ever-changing environment through the effective use of computer technology. Expert systems offer us the potential to function at increased levels of competency by providing us with specialized subject knowledge and by focusing our problem-solving strategies. In the business world, there is currently tremendous interest in expert systems. *Time* recently reported that "after years of false starts and overblown promises, the new systems, called expert or knowledge processing systems have exploded onto the commercial scene...there are an estimated 1,000 to 3,000 in daily use, and the number is increasing by 50% annually." *(1)* Librarians and information managers have also shown a growing interest in these new systems.

In this paper, I describe the development of a demonstration prototype expert system that provides advice on monograph selection decisions, called the Monograph Selection Advisor. My goal in developing it was to gather information that would identify the issues and problems in using an expert system for this

task. This information will help evaluate the potential usefulness of microcomputer-based expert systems for collection development and help determine whether they may be able to expand the capabilities of busy librarians and information managers engaged in this activity.

Expert Systems

Several good overviews of expert systems have appeared in the library literature in the last four years. *(2, 3, 4, 5)* Most of the interest to date has been in programs for online searching, reference assistance, and cataloging. Hawkins *(6)* has written an excellent review of the work being done on expert systems for online searching. The ultimate goal of the work in this area is the development of systems that can handle the intellectual aspects of online searching. That is, expert systems that can ask the user the right questions and formulate an appropriate search strategy that will retrieve information from online databases the user needs. The reference assistance systems have a similar ultimate goal, but they aim to provide the user with citations to reference materials that may have the information they need. *(7, 8)* The rule-based natures of cataloging and indexing also have inspired work on expert systems. *(9, 10)*

The Monograph Selection Advisor is an attempt to apply this emerging technology in another area, the building of library collections. Specifically, the task modeled is the item-by-item decisions that a subject bibliographer makes in selecting monographs.

Monograph Selection

There is little "theory" on the decision process involved in selecting items for a library collection. The textbooks used in collection-building classes in library schools are prescriptive. They tend to provide lists of factors to consider in reviewing items for a collection. The texts provide little or no advice on how to weigh these various factors and evaluate their relationships in order to reach a decision on a particular item. In reviewing the journal literature, I found a few articles that have contributed to some understanding of item-by-item selection decisions.

DePew described the process of selecting items for an academic library collection in the form of a flowchart and a formula. *(11)* Weights are assigned responses at each decision point in the flowchart to arrive at a final value for an item. The meaning of this value depends on the funds available. This early work is useful for its overview of the entire selection process, but it places more emphasis on the purchase decision than on the selection decision.

In a recent article by Rutledge and Swindler, *(12)* the authors empirically group numerous selection criteria used in academic libraries into six categories in order of importance: subject, intellectual content, potential use, relation to the collection, bibliographic considerations, and language. A chart displays the selection criteria as phrases. A scheme of scoring the criteria is suggested that will allow one to decide whether an item "must," "should," or "can" be purchased for the library's collection.

The most theoretical work on selection decisions is in an article by Atkinson. *(13)* He describes the final selection decision as an evaluation of an item in light of "contexts of resolution." The individual elements of a citation and their relationships, along with supplemental information from the citation's source, allow a selector to make a qualitative judgment about the item. This judgment is then "resolved" by reviewing it in an "archival" context (what is already in the collection), a "communal" context (potential for use), or a "thematic" context (what is being published). A library's collection development goals determine which of these contexts is emphasized. This article is valuable for calling attention to the importance a citation's elements play in evaluating an individual item for selection.

Rada et al *(14)* have developed an expert system for the selection of journals to be indexed for an information retrieval system. The knowledge base contains four categories of rules about journals: journal composition,

journal producers, type of information in articles, and authors. The Journal Expert Selector asks questions to obtain information for these four categories, assigns a score for each category based on the information it receives, and then totals the categories to provide a final score for the journal. The system was tested with "fictitious journals" and it performed as it was expected.

From this review of the relevant literature on item-by-item selection decisions, I concluded that the process is complex with a large number of factors having an effect on the final decision. There seems to be little agreement about which factors have the greatest impact on selection. However, using a system of weights for the factors involved and some method of combining them, to arrive at a final recommendation, seems to be a useful approach.

The Monograph Selection Advisor

As a framework for discussion, I will use the six-step process for the development of "small expert systems" from Harmon and King. *(15)*

1. *Select a tool and implicitly commit yourself to a particular consultation paradigm.* I selected an inexpensive expert system shell, VP-Expert, for the development of the Monograph Selection Advisor. *(16)* In addition to its low cost, I chose it because of its rule-based representation of knowledge, its ability to provide explanations, and its ability to access and use information in dBASE III PLUS databases. After working with VP-Expert, I discovered some problems, mostly related to the user interface. Overall, VP-Expert is a good choice for the construction of small expert systems.

2. *Identify a problem and then analyze the knowledge to be included in the system.* For the development of an expert system to advise on the selection of monographs, I identified a subject bibliographer and together we determined that one of her areas of selection responsibility, classical Latin literature, was an appropriate subject for this project. Latin literature is a limited field whose scope is primarily the works of a few dozen writers and secondary materials about the writers and their works.

Based on initial discussions with the subject bibliographer and information obtained from the articles on selection theory, I determined that knowledge about Latin authors, secondary works, publishers in the field, and the existing collection development policies were to be included.

3. *Design the system.* The acquisition of knowledge for expert systems is the most time-consuming and problematic part of the development process. There are several ways of obtaining this information, including extracting it from key books or articles written by experts on the subject, interviewing, or observing.*(17)* For this project, I interviewed the subject bibliographer in-depth using questions inspired by my review of the collection development literature outlined above. My questions sought to establish the degree of expertise of the subject bibliographer, to obtain basic information about the scope of Latin literature and the research and teaching needs of faculty and students at Indiana University, to identify selection sources and budgetary constraints, and to discover the kinds of decisions made in the selection process. Some of the information was obtained from the expert by having her think through the process out loud while reviewing specific selection decisions. *(18)* The initial interview was taped. After I transcribed it, I conducted a follow-up interview with the subject bibliographer to clarify some points and to verify information to be used for writing the first set of rules for the expert system.

4. *Develop a prototype of the system using the tool.* Using the information from the interviews I wrote rules with accompanying question and answer choices. In addition, I designed several dBASE III PLUS databases to hold information about Latin writers, publishers, and series. For this initial knowledge base, I assigned weights to facts based on the subject bibliographer's determination of their relative impact on the final decision. For

example, secondary materials in French or German are more important than those in Spanish.

At this point the Monograph Selection Advisor could ask questions about a monograph under consideration and make one of these recommendations: "must be bought," "should be bought," "can be bought," "should not be bought," or "more information is needed."

After determining with some fictitious examples that the program performed as expected, eight relevant citations from a recent issue of *Gnomon* were evaluated by the expert system and the subject bibliographer. Both were in agreement on the five cases that fell at the extremes, "must be bought," or "should not be bought." There was not agreement on the three cases that were in the middle of the range. However, by manipulating the weights the system could be made to agree with the expert. Through discussion of the eight cases with the subject bibliographer, the importance of several factors were confirmed and many needed improvements were identified.

Atkinson's ideas about the interplay of citation elements were observed in the discussions with the subject bibliographer. Often an assessment of an author of a secondary work as a scholar was based on which publisher was involved. The knowledge base clearly needed more rules to deal with the relationships of the citation elements.

Another problem with the initial knowledge base was that for certain classes of facts, such as Latin writers, all members of the class were given the same weight. More feedback from the expert was needed to determine rankings within categories of information composed of similar elements.

5. *Expand, test, and revise the system until it does what you want it to do.* The rules were expanded and rewritten as necessary to incorporate from the previous step the additional information and changes required to make the expert system function more like the subject bibliographer. More feedback on the system's performance was then obtained from the expert and more changes are being made. This cycle of testing and revision can continue until the developer is satisfied with the program's performance.

6. *Maintain and update the system as needed.* The final knowledge base for Latin literature will be relatively stable over time because of the static nature of the subject. However, revisions will need to be made periodically to reflect changes in the teaching and research interests of faculty and students. A more dynamic subject area will require more frequent updating because of rapid changes in the field. By using an expert system shell that can access information in databases, data needing frequent changes can be stored in easily updated files. The rules which access this file information can be written in such a way that they will need to be revised rarely.

Conclusion

I believe that the development of the Monograph Selection Advisor has shown that it is feasible to construct an expert system for a narrow subject which models the item-by-item selection decision process of a bibliographer. In addition, this work has confirmed some of the reported difficulties in expert systems development. The major problems encountered can be grouped into three categories: knowledge acquisition, knowledge representation, and explanation.

Acquiring the knowledge of an expert is a complex and time-consuming process. It requires good communication skills and frequent feedback. Even with the large amount of information obtained from the initial in-depth interview with the subject bibliographer and the two feedback sessions, the Monograph Selection Advisor remains a rudimentary system with incomplete knowledge of the subject domain. It is difficult for the expert to precisely describe in total the thought processes that occur in making decisions and in each piece of information used.

The Monograph Selection Advisor's knowledge about classical Latin literature is

represented by rules. An important question is whether this is an appropriate scheme for representing collection development knowledge. During some of the test cases, the subject bibliographer often appeared to take in all the citation information at once, weighing and balancing the elements simultaneously to arrive at a selection decision. Perhaps a representation scheme known as "frames" would be a better match for this type of knowledge.

The final category of problems relate to an expert system's ability to provide clear explanations for its questions and conclusions. Although systems built with VP-Expert can incorporate explanations for rules, the text of these must cover both "how" and "why" questions. However, a more general problem with an explanation is how to structure one to cover the many perspectives for which an explanation might be sought. In addition, the depth of the explanation should be adjustable to match the particular needs of the user.

Do the potential uses and benefits of an expert system for collection development justify more research efforts? If a more comprehensive system can be constructed, I believe that it will have great potential. With the provision of machine-readable bibliographic information by vendors and utilities, or new scanning technologies, the Monograph Selection Advisor could review large quantities of newly published materials and make selection recommendations based on a library's specific knowledge base. It would be similar to an approval plan profile, but highly refined in its ability to exclude unwanted items.

Another potential use is for the training of subject bibliographers. Through its ability to explain, an expert system could be used as a tutor for new bibliographers, making available the vast knowledge of the previous bibliographer about the subject and the library's collection. In addition, the knowledge base of an expert system may be a more effective way of presenting collection development policies.

Perhaps the greatest benefit to be derived from developing expert systems for collection development is their requirement that we be able to describe precisely what it is we do when we select materials for our library collections.

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1989 Candidates for SLA Office

For President-Elect

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SLA Division Activities: *Food, Agriculture & Nutrition Division*: member, Nominating Committee (1987–88); secretary, (1977–78); program chair and local representative (1975). *Advertising & Marketing Division:* member, Board of Directors (1976–78); chair (1975–76); chair, Membership Committee (1974–75).

SLA Association-level Activities: chair, Consultation Services Committee (1987–), member, Awards Committee (1987); representative, ALA/USDE Accreditation Project (1985–86); Division Cabinet chair and chair-elect (1985–87); deputy chair, 1983 Conference (1981–83); chair, Public Relations Task Force (1982).

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For Chapter Cabinet Chair-Elect

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SLA Member Since: 1972.

SLA Chapter Activities: *Eastern Canada Chapter:* president (1983–84); president-elect (1982–83); archivist (1979–); secretary (1977–79); editor, *Directory of Special Libraries in the Montreal Area* (1975–77); bulletin editor (1974–75).

SLA Division Activities: *Biological Sciences Division:* chair (1988–89); chair-elect (1987–88); director (1985–87); local arrangements chair (1984–85); *Science and Technology Division:* member, Awards Committee (1984–86; 1987–88).

SLA Association-level Activities: member, Scholarship Awards Committee (1984–87); chair (1986–87); Task Force on Canadian Concerns (1984–86); Task Force on Conference Proceedings (1983–84).

Other Professional Activities: American Library Association; Canadian Library Association; Canadian Association of College and University Libraries Conservation Committee (1984–88), Committee on Intellectual Freedom (1978–82).

Publications: Ms. MacLean has published two book reviews, four chapters in books, and two journal articles. Her most recent article is "History of the Blacker-Wood Library" in David Lank's *A Monograph of the Phasianidae or Family of the Pheasants: A Facsimile Reproduction in Folio of the Heretofore Unpublished Charcoal Sketches by Joseph Wolf for Danial Giraud Eliot's classic 'A Monograph of the Phasianidae'*, Hull, England: Allen Publishing Company Ltd., 1988.

For Division Cabinet Chair-Elect

N. BERNARD BASCH

JUDITH GENESEN

• **N. BERNARD "BUZZY" BASCH** is vice president of EBSCO Subscription Service's midwest regional office in Barrington, Illinois.

Past Employment: president, Turner Subscription Agency, a Faxon company (1982–87). In his 18 years with Faxon, Buzzy held a number of positions, including vice president of operations. Prior to becoming involved in library services, Buzzy worked for McGraw-Hill and Filene's. He also served in the U.S. Navy as an aviation maintenance officer.

Education: B.S. in Business (1956) and M.S. in Accounting (1962), Washington University.

SLA Member Since: 1979

SLA Chapter Activities: *New York Chapter:* library school liaison; member, Information and Technology Group; chair, Information and Technology Group (1986–87). *Boston Chapter*: member.

SLA Division Activities: *Library Management Division:* served as chair, chair-elect, and program planning chair of the division, as well as chair of the Nominating Committee, the Long-Range Planning Committee, and the Publications Committee. *Information Technology Division*: treasurer (1986–88); chair, 1989 Annual Meeting Program Planning Committee. *Publishing Division:* membership chair (1987–88).

SLA Association-level Activities: chair, Public Relations Committe; liaison, Presidential Task Force on the Image of the Librarian/Information Professional. Served on the Presidential Task Force on the Value of the Information Professional, and made presentations at the Division and Cabinet Officers Leadership Training Program on Budgeting and Marketing.

Professional Memberships: treasurer, American Society for Information Science (ASIS); American Library Association; Association of Information Managers; Society of Scholarly Publishers; American Federation of Information Processing Societies; Association for Computing Machinery; arbitrator, American Arbitration Association; New England Library Association; North American Serials Interest Group—NASIG Continuing Education Committee. Mr. Basch has held numerous offices in ASIS, including chair of the New England Chapter, deputy director, and chair of SIG Management. He recently completed a two-year term on the Council of New York Library Club, and is a member of the National Advisory Council for the Olin Library of Washington University, St. Louis, Missouri.

Honors: Fellow of the Special Libraries Association; recipient of the ASIS Watson Davis Award.

Other Professional Activities: Mr. Basch is a member of the editorial board of the *Bottom Line: A Financial Magazine for Libraries*, and regularly lectures at library schools throughout the country. He is a senior lecturer in information systems on the faculty of Northeastern University in Boston, Mass.

Publications: "Conclusion: Closing the Service Gap," *President's Task Force on the Value of the Information Professional,* Special Libraries Association, June 10, 1987; "Library Economics and the Scholarly Publisher," *Proceedings of the Ninth Annual Meeting of the Society of Scholarly Publishing,* February 1988; "Subscription Agencies: A New Look At An Old Service," *Library Journal,* April 1988; "Pricing," *Library Acquisitions: Practice and Theory,* Summer 1988; "Checking Out the Library Market," *Circulation Management,* June 1988; "The Scholarly Journal and the Library Market," *Scholarly Publishing,* April 1988.

• **JUDITH (JUDY) GENESEN** is director of information services at Chicago Transit Authority.

Past Employment: science librarian, High School Library, Laboratory Schools, University of Chicago (1963–68); reference librarian, Joint Reference Library (1969–74); head reference librarian

(1974–82) and supervisor of forms, records and procedures (1982–85), Chicago Transit Authority.

SLA Member Since: 1974.

SLA Chapter Activities: *Illinois Chapter:* chair, Education Committee (1976–78); chair, Affirmative Action and Career Guidance Committee (1978–80); president-elect and program chair (1980–81); president (1981–82); co-chair, 75th Anniversary Committee (1983–84).

SLA Division Activities: *Transportation Division:* chair-elect and program chair (1985–86); chair (1986–87). *Library Management Division:* member.

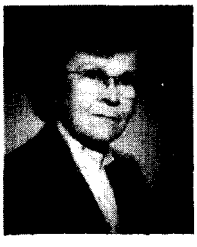
SLA Association-level Activities: chair, ad hoc Division Cabinet Out-Reach Committee (1985–87); member, Professional Development Committee (1988–).

Other Professional Activities: Chicago Library Club—secretary (1976–77), president-elect and program chair (1986-87), president (1987–88); Transportation Research Board, National Academy of Sciences, Information Exchange Committee (1977–79); UMTRIS Steering Committee (1979–81); chair, Business Interest Group, Illinois Regional Library Council (1977–79); Graduate Library School, University of Chicago, lecturer (1984–); Dean's Alumni Advisory committee (1984–86).

Education: B.A., University of Chicago (1951); M.A., Graduate Library School, University of Chicago (1965).

Publications: co-editor, *Information and Special Libraries in 2009: Informed Speculations,* a collection of essays by information users and information professionals, published by the SLA Illinois Chapter to honor SLA's 75th Anniversary.

For Directors



ANNIE M. BREWER

HAROLD W. MILLER

FREDERICK W. STOSS

LOIS WEBSTER

• **ANNIE M. BREWER** is vice president/research of Omnigraphics, a new publishing company in Detroit, Michigan.

Past Employment: senior editor/research and librarian for Gale Research Company (1969–87).

Education: B.A., University of Michigan (1966); A.M.L.S., University of Michigan (1968).

SLA Member Since: 1980.

SLA Chapter Activities: *Michigan Chapter.*

SLA Division Activities: *Publishing Division:* membership (1981–82); bulletin editor (1982–84); chair-elect (1984–85); chair (1985–86); bulletin editor (1986–87).

Professional Memberships: American Libraries Association; American Society of Indexers.

Other Professional Activities: Detroit Metropolitan Book & Author Society, past chairperson; Book Club of Detroit, past chairperson; Friends of the Dearborn Library, charter member and past chairperson; Association of American Publishers as liaison from Special Libraries Association, 1988.

Honors: Special Libraries Association, Publishing Division 1988 Roll of Honor Award.

Publications: *Dictionaries, Encyclopedias, and Other Word Related Books,* 1975, 1979, 1982, 4th edition, 1987; (with Elizabeth Geiser) *Book Publishers Directory,* 1977, 1979, 1980; *Youth-Serving Organizations Directory,* 1978, 1980; *Abbreviations, Acronyms, Ciphers, and Signs,* 1981; *Biography Almanac,* 1981, 1983; *Indexes, Abstracts, and Digests,* 1982; *Library of Congress Subject Heading: A Cumulation,* 1985, 1986, 1987. Current publishing activities center on producing a journal concerned with jobs today and an index to architecture, landscape, and design.

• **HAROLD W. MILLER** is manager of Information Services at Touche Ross & Co. in New York City.

Past Employment: library intern, Baker Library, Harvard University Libraries Intern Program (1964–65); library intern, School of International Affairs Library, Columbia University Libraries (1965–66); library assistant—reference, Equitable Life Assurance Society (1966–67); chief librarian, Touche Ross & Co. (1967–82); head, Central Files Department, Touche Ross & Co. (1975–82).

Education: B.A., Bowling Green State University (1963); M.A., University of Kentucky (1964); M.L.S., Columbia University (1967).

SLA Member Since: 1967.

SLA Chapter Activities: *New York Chapter:* chair, Downtown Luncheon Group, (1968–69); chair-elect, Business & Finance Group (1969–70), chair (1970–71); chair, Business & Finance Group Nominating Committee (1972–73); program chair and panel moderator, New York Chapter All-day Seminar "Plus 15" (October 1972); Director Awards (1984–86).

SLA Division Activities: *Business & Finance Division:* moderator, Business Libraries Roundtable, Atlanta Conference (1981); chair-elect (1981–82); chair (1982–83); chair, Regional Conference Planning Committee (1983–84); chair, Nominating Committee (1984–85). *Library Management Division:* member. Division Cabinet: chair, Division Cabinet Committee on Divisions (1982–83); Division Cabinet Committee on Division Cooperation (1982–83); chair, Joint Cabinet Program Planners Manual Committee (1984–85).

SLA Association-level Activities: chair, Tellers Committee (1978–79); Copyright Law Implementation Committee (1978–84); SLA alternate representative, Council of National Library & Information Associations, Inc., Adhoc Committee on Copyright Law Practice and Implementation (1980–83); chair, Special Committee to Study Name of the Association (1985–87); deputy chair, Pittsburgh Conference Program Committee (1988–90).

Other Professional Memberships: American Society for Information Science; Association of Records Managers and Administrators; New York Library Club.

Honors: Phi Alpha Theta (history honorary society); Fellowship to Vandenbosch School of International Affairs, University of Kentucky (1963–64).

Publications: Mr. Miller has published two articles in other national journals and ten articles in chapter and division bulletins. Publications include: "Biography and the British Royal Family in the Twentieth Century," SCEPTRE (Journal of the Royalty Collectors Association of North America), fall 1984 and winter 1985; "John Whittaker's *Ceremonial of the Coronation of His Most Sacred Majesty King George the Fourth," American Book Collector,* December 1986.

• **FREDERICK W. STOSS** is director of library and information services at the Center for Environmental Information, Inc. in Rochester, New York.

Past Employment: research associate, Center for Chemical Hazard Assessment, Syracuse Research Corporation (1978–82); technical research associate, Environmental Health Sciences Laboratory, University of Rochester Medical Center (1974–78); adjunct instructor, School of Information Studies, Syracuse University (1983–84).

Education: B.A. (Biology), Hartwick College; M.S. (Zoology), State University of New York; M.L.S., Syracuse University.

SLA Member Since: 1983.

SLA Chapter Activities: *Upstate New York Chapter:* chair, Professional Development Committee (1988–).

SLA Division Activities: *Environmental Information Division:* chair-elect, chair, past-chair (1986–89); chair, Long Range Planning Committee (1988–89); editor, "Environmental Reviews," a feature in the EID Newsletter (1985–); chair, Regional Conference Committee (1985–86; 1988–); chair, Membership Committee (1986–87).

Other Professional Activities: Air Pollution Control Association: Public Education and Public Information Committee, Government Programs

Division; New York State Outdoor Education Association: 1986 Annual Conference Program Committee, 1988 Western Regions Winter Program Committee.

Other Professional Memberships: Air Pollution Control Association, New York State Outdoor Education Association, American Forestry Association.

Publications: Mr. Stoss's contributions to the Environmental Information Division newsletter include the following articles: "Acid Rain: Searching A Multidisciplinary Subject"; "Environmental Classics," co-authored with Patricia Murray; and "The Next 25 Years: A Bibliographic Tribute to Rachel Carson." He has authored or co-authored an additional 47 articles, reports, or presentations on the topics of chemical hazard assessment and the environment, including: "The Fugitive Literature of Acid Rain: Making Use of Nonconventional Literature in a Vertical File," *Reference Services Review 16* (no. 1–2) (1988) co-authored with Susan Lovenburg; "Acid Rain: Resource Guide for Classroom, Laboratory, Field and Debate Topics," *Environmental Education Report 15* (no. 4) 1987; and "Information Management for a Living Earth," 1986 Proceedings of the Conference "Is the Earth A Living Organism?" National Audubon Expedition Institute, August 1–6, 1985, Amherst, Massachusetts, pgs. 64: 1–18.

• **LOIS WEBSTER** is manager of information resources of the American Nuclear Society, La Grange Park, Ill.

Past Employment: library advisor, Du Page County Girl Scout Council, Glen Ellyn, Ill. (1973–74); field director, Springfield Council of Girl Scouts, Springfield, Ill. (1951–54).

Education: Northern Illinois University, DeKalb, Ill., School of Library Science (1977–82); College of Du Page, Glen Ellyn, Ill., Library Technology Certification (1973); B.A., Millikin University, Decatur, Ill. (1951).

Member of SLA Since: 1977.

SLA Chapter Activities: *Illinois Chapter:* chair, Bylaws Committee (1980–83; 1986–87).

SLA Division Activities: *Nuclear Science Division:* chair, Nominating Committee (1987–88); chair-elect (1984–85); chair (1985–86); past chair (1986–87); secretary (1982–84); membership chair (1981–82); public relations chair (1980–81).

SLA Association-level Activities: chair, Bylaws Committee (1987–89); member, Division Cabinet Outreach Committee (1986–87).

Other Professional Activities: Council of Engineering and Scientific Society Executives (1986); Suburban Library System of Illinois, special libraries representative, Advisory Committee to the Board of Directors (1983–86); Metropolitan Chicago Library Assembly, Board of Directors (1982–85), Executive Committee (1982–85); American Society for Information Science (1981–); American Nuclear Society, Chicago Section (1980–).

Publications: Ms. Webster has written one chapter in a book, two articles in the *SpeciaList*, nine articles in *Sci-Tech News*, and has authored or co-authored over a dozen papers, speeches, or presentations delivered in the U.S., Korea, Guatemala, Canada, and Brazil. Her most recent publications are: "Electronic Communications, A Passport to the World," in *Association International Activity*, American Society of Association Executives, 1988: "Indoor Radon Conference," *Nuclear News*, June 1987; "Foretelling the Fortune of the Library," *Information and Special Libraries in 2009: Informed Speculations*, Special Libraries Association, Illinois Chapter, 1984.

Her 1988 presentations include the keynote address to the third International Topical Meeting on Nuclear Power Plant Thermal Hydraulics and Operations, delivered by the president of the America Nuclear Society (ANS), Dr. Gail de Planque, in Seoul, Korea; "The Importance of Retaining the Nuclear Option" given by ANS executive director Octave J. Du Temple at the annual meeting of the Illinois State Academy of Science, and her own presentation of "The Search for a Niche for ANSIRS, the ANS Electronic Mail and Data Base Experience" at the annual meeting of the Council of Engineering and Scientific Society Executives.

"User and Information Dynamics: Managing Change"

SLA's 80th Annual Conference
June 10–15, 1989
New York, New York

THE 80th Annual Conference of the Special Libraries Association will take place in New York, New York, June10–15, 1989. The theme chosen for this year's conference is "User and Information Dynamics: Managing Change," and the 1989 Conference will focus on the user—developing a sense of true client identity, honing skills to provide quality service, strengthening the commitment to user needs, and developing strategies on competing for users' attention within new information arenas. Advances in computer and telecommunications technology have helped to develop new and innovative information products. It has challenged the traditional roles of information providers and their users. One of these challenges is the ability to focus our energies not only on technology but in developing a truer sense of the nature of users.

The broad scope of programs planned for the conference week will provide an enriching experience for all attendees. The conference will feature valuable continuing education seminars and workshops to enhance professional growth.

Expert speakers have been scheduled to present the general and division sessions. Social events are also being planned to provide fun and a chance for you to relax with your colleagues at the end of a long conference day. This conference may be the largest in SLA's history and one you won't want to miss.

Special Features of the Denver Conference

Professional Development Programs. The SLA Conference will feature a variety of professional development activities designed to meet the needs of both new and experienced information professionals. The Professional Development Program will include approximately 24 continuing education courses that offer something for everyone. Topics such as "Artificial Intelligence and Expert Systems," "Competitor Intelligence," "New Technology and Its Impact on You," and "Making Money: Fees for Information Service" will be offered. The Professional Development Program will cover a broad range of topics designed to sharpen your skills in meeting the challenge of library and information management.

Division Programs: Business and Learning. All SLA divisions will hold business meetings during the conference. This will give you the opportunity to find out what is happening within your division and to voice your opinion on future decisions. Many divisions will also sponsor educational sessions that will be technical in nature and cover areas of special interest to the division.

Products and Service Exposition. The Exhibit Hall is a vital exciting component of an SLA Conference. A recent membership survey revealed that 69% of respondents indicated that the SLA Exhibit Hall is an important factor in determining their conference attendance. Over 300 exhibits will be displayed at this year's Annual Conference. Booths will be staffed by knowledgeable people representing topnotch manufacturers and suppliers specializing in products relating to the library field.

The exhibits will provide information on such products as:

- audiovisual materials and equipment
- CD-ROM
- copying and duplicating equipment
- data processing equipment
- databases

- information storage and retrieval
- library automation software
- library furniture
- micro computers
- microforms and microform equipment
- mini computers
- office furniture and equipment
- optical publishing
- portable copying equipment
- specialized books, periodicals, and directories

You will also learn about such services as:

- alerting and search services
- book jobbers
- consultants
- database search services
- government information services
- indexing and abstracting services
- library binders
- publishers
- subscription agencies

In New York this year, the exhibits will be located in the New York Hilton and the Sheraton Centre. If you are unable to register for the program sessions of the conference, but are interested in examining the various products and services in the Exhibit Hall, write for a complimentary Exhibit Hall Pass and specify the number of persons attending. Send a self-addressed, stamped envelope to: Manager, Conference & Exhibits, Special Libraries Association, 1700 Eighteenth Street, N.W., Washington, D.C. 20009.

The Exhibit Hall will be open Sunday, June 11, through Wednesday, June 14. Special events are also planned, including Association Receptions in each hall. Be sure to allow ample time in your schedule to visit both halls.

General Sessions. Two outstanding speakers, Al Ries and Donald J. Higgins, will address conference attendees during the general sessions on Monday and Tuesday (June 12 and 13).

In 1963, Al Ries founded the advertising agency of Ries Cappiello Colwell. However, to reflect the additional partner of Jack Trout and changes in the agency's management, the name of the agency was changed to Trout & Ries in 1979. Their company has become a specialist in the development of marketing strategy, having done strategic work for many

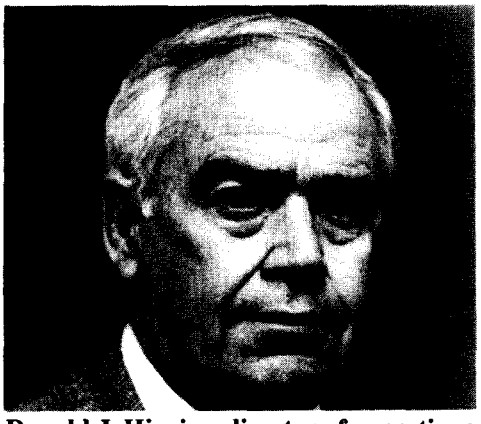
Al Ries, chairman of the Trout & Ries Advertising, Inc., will address General Session I on Monday, June 12, at SLA's Annual Conference.

major companies, including Xerox, Digital Equipment, and Burger King. In 1972, Al Ries and Jack Trout wrote a series of articles entitled "The Positioning Era Cometh" for the trade publication *Advertising Age*. Those articles and their speeches on the same subject are widely credited with making "positioning" the most widely used term in the field of advertising and marketing. Ries and Trout also published two books with McGraw-Hill, *Positioning: The Battle for Your Mind* and *Marketing Welfare*, which have made them well known in the marketing field. Donald J. Higgins is the director of operations for Hewlett-Packard and is responsible for Library 2000, a progressive library network system for Hewlett-Packard.

Meeting Your Peers. One of the advantages to be gained by attending a national conference is the opportunity to meet a wide range of fellow professionals. Many excellent and practical ideas can be gained by interacting with thousands of the best teachers in the field—your peers. Social events have been scheduled to allow ample time for you to relax with your colleagues.

Employment Clearinghouse and Career Advisory Service. The SLA Employment Clearinghouse is a service available to all conference registrants and employers. Through this service, job applicants and employers are brought together to discuss future employment.

If you have any questions about special librarianship and the information manage-



Donald J. Higgins, director of operations for Hewlett-Packard, will address General Session II on Tuesday, June 13, at SLA's Annual Conference.

ment field in general, or your career in particular, take advantage of the SLA Career Advisory Service. Experienced SLA members will serve as counselors to help you find the answers you need.

Full details will be provided in the *Preliminary Conference Program*, available in early March.

Field Trips. More than a dozen field trips sponsored by SLA and many of the divisions have been scheduled for this year's conference. Some trips will allow you to visit a place of special interest to your division. Others will allow you to learn about the geographic area and its history. And some are just for your pleasure and enjoyment.

Cost. SLA works hard to help its members get the best value for their money. Seminars, field trips, and special events are planned so that attendees receive the most for each dollar spent. SLA has used its group-buying power to arrange special low prices on hotels, car rentals, and air fares. Take advantage of this service by staying in a designated conference hotel and by using SLA's official airline.

New York. The "Big Apple" is the largest city in the United States, with a population of approximately eight million. Its five boroughs are the islands of Manhattan and Staten Island, Brooklyn and Queens (on the western end of Long Island), and the Bronx—with tunnels, bridges, and ferries linking all of them. The history and heritage of this expansive city can be enjoyed by exploring its many neighborhoods. Manhattan is the oldest part of the city and contains the financial district, City Hall, and the seaport area. For some ethnic flavor, you can travel to Chinatown and Little Italy on the lower east side. If you like antiques, artsy retail shops, and quaint coffeehouses, you might visit Greenwich Village. And there's always New York's theater district, with a variety of commercial, classic, and experimental productions. If this is your first visit to New York City, don't miss landmarks such as Central Park, the Empire State Building, Lincoln Center, Madison Square Garden, Radio City Music Hall, St. Patrick's Cathedral, the Statue of Liberty, Times Square, the United Nations Building, and the World Trade Center—just to name a few! Be sure to be there this June.

Conference Programs

Continuing Education Courses. SLA's continuing education courses have been instrumental in providing information professionals with a wealth of knowledge. SLA's Continuing Education Program is designed to meet the changing needs of information specialists by preparing them for new duties and responsibilities in such areas as management, new technology, and library automation techniques. Knowledgeable instructors have been chosen for their expertise in the topic area, acquired through both library and academic experience.

This year's conference will feature approximately 24 continuing education courses which will take place Saturday, June 10, and Sunday, June 11. Throughout its existence, the Continuing Education Program has earned an excellent reputation as a highly respected resource in the information management profession. Participants will earn 0.6 Continuing Education Units (CEUs) and a certificate upon completion of each course.

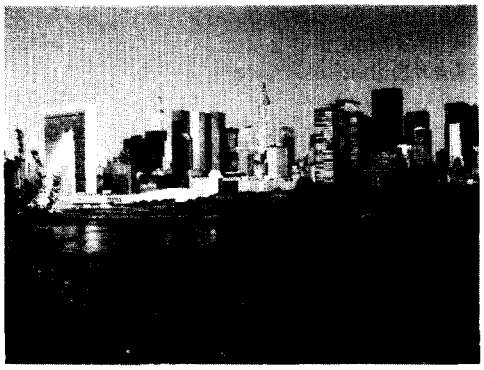
Middle Management Institute. The Middle Management Institute (MMI), designed for information professionals with five or more years of managerial experience, is the second phase of SLA's Professional Development Program. Developed to provide practical training in specific areas of management, this certificate program will sharpen participants' overall organizational and decision-making skills through expert instruction and interaction with peers.

The MMI is a 75-hour sequence, consisting of five independent, yet interrelated, units including:

1. Management Skills
2. Analytical Tools
3. Human Resources
4. Marketing and Public Relations
5. Technology and Applications

Each unit is a 15-hour, two-and-a-half-day session.

MMI units take place in various locations throughout the U.S. and Canada each calendar year. The "Management Skills" and "Analytical Tools" units will be offered in conjunction with the 1989 Annual Conference Friday, June 9; Saturday, June 10; and Sunday, June 11.



Some of the Big Apple's best known skyscrapers are seen in this view from the Queens side of the East River. (Photo courtesy of the New York convention & Visitors Bureau.)

Room Rates and Hotels for the 1989 SLA Conference

Hotel	Single	Double
New York Hilton	$125–$170	$150–$195
Shearton Centre	$115–$160	$140–$185
Sheraton Squire (overflow)	$119	$139

*Suites are available upon request.

Participants will earn 1.5 CEUs for completion of each unit. Certification is based on completion of all five MMI units within an approximate two-year period.

For further details regrding Annual Conference Professional Development Activities, refer to your *Preliminary Conference Program*, which will be mailed to SLA members in March 1989, or contact: Professional Development Section, Special Libraries Association, 1700 Eighteenth Street, N.W., Washington, D.C. 20009.

Conference Housing. The New York Hilton and the Sheraton Centre have been designated as co-headquarters hotels during the 1989 SLA Conference. All meetings will take place in these two hotels. Additional sleeping rooms will also be found in the Sheraton Squire. See the table for room rates, noting that rooms in each hotel at each rate category are limited. Hotel reservations can be made only by using the SLA housing form provided in the *Preliminary Conference Program.* Rooms are assigned on a first-come-first-serve basis.

Registration. Registration will take place in the New York Hilton and Towers. We are expecting a sizeable attendance at this conference, and strongly recommend advance registration. In addition to avoiding long, time-consuming lines, advance registration can also save you money. The registration fees for this Annual conference are listed below:

*Member, Advance (by May 1)	$115.00
*Member, One Day	85.00

*Member, On-Site (after May 1)	145.00
Nonmember, Advance (by May 1)	140.00
Nonmember, One Day	105.00
Nonmember, On-Site (after May 1)	175.00
Student/Retired/ Accompanying Person	65.00

* SLA member rates apply to SLA, ASIS, ARLIS/NA, AAL, and MLA.

All SLA members will receive full registration and ticket information in the *Preliminary Conference Program.* If you have any questions regarding the Annual Conference, or if you are a nonmember and wish to be placed on the mailing list to receive a *Preliminary Conference Program*, please contact the Manager, Conference and Exhibits, Special Libraries Association, 1700 Eighteenth Street, N.W. Washington, D.C. 20009; 202/234–4700.

JOIN US IN NEW YORK FOR SLA's 80th ANNUAL CONFERENCE!

SLA's Museums Group in Moscow: A Report

PRIOR to the historic Reagan-Gorbachev summit, a team of SLA members went to Moscow to study library practices in the Soviet Union. The particular emphasis of the trip, according to Dr. David R. Bender, SLA's Executive Director, was on "experiences in museum work and its research literature." Dr. Bender and Dr. Barry Hennessey of the University of New Hampshire (and, at the time, Chair of SLA's Museums, Arts and Humanities Division) put together an exchange program, which grew out of a general agreement on contacts, exchanges, and cooperation made between the United States and the USSR and signed in Geneva in 1985. The dates of the exchange were May 18–28, 1988.

Four Americans with expertise in humanities or museum library specialties were chosen to work with the Soviets, and Dr. Bender, having served as the U.S. project leader of the USSR/US museum initiative since its inception in January 1986, went as facilitator for the exchange. The others in the group were Jean Adelman, University Museum of Archaeology/Anthropology, University of Pennsylvania, a specialist in world-wide exchange arrangements for museum libraries; Clayton Kirking, Phoenix Art Museum, a leader in the Art Libraries Association; Sandra Kitt, Richard S. Perkin Library, American Museum of Natural History, a specialist in literature and artifact conservation and restoration; and Guy St. Clair, president of a management consulting firm specializing in library and archival systems, especially in humanities institutions.

American participation in the project was organized through the International Research and Exchanges Board (IREX), an activity of the American Council of Learned Societies (ACLS). Since last year, ACLS and the Soviet Library Council have been working together to establish a Commission on Library Cooperation, and this exchange was a first program in that work.

At the State Lenin Library, the exchange was coordinated by Mrs. Tamara Lapteva, chief of the Information Centre on Culture and the Arts in the USSR. Throughout the course of the exchange, some 45 or so Soviet library and information professionals and workers were involved in the program.

The delegation's introduction to Soviet museum librarianship was through the research library of the All-Union State Museum Amalgamation "Tretjakov Gallery," which might be compared to some of the major national galleries in the West. The museum library, with some 350,000 items, supports the research work of the museum staff. The delegation visited the library and heard a presentation about the role of the library in the creation of a comprehensive, illustrated catalog (expected to be 40 volumes). Also connected with the gallery is what seems to be the only state-of-the-art restoration and preservation laboratory in the area, which the delegates visited.

There were numerous presentations by librarians and information specialists about museum libraries in Moscow and vicinity. Among the museums visited, and for which staff had prepared special presentations for the delegation, were the Tchaikovsky State Museum and Archives at Klin, the Pushkin State Museum of Fine Arts, the Tolstoy State Museum House and Library, the State Museum of the Peoples of the Orient, the Glinka State Museum of Musical Culture, the Zagorsk State Literacy-Historical Museum, and the State Museums of Vladimir and Suzdal (including at Suzdal a Museum of the Book which, in its completeness and the sophistica-

tion of its installation, rivaled the Museum of the Book at the State Lenin Library). In several of these museums, delegates were shown excellent exhibition installations, and the point was made that the libraries of each of these make heavy use of the Information Centre on Culture and Arts, State Lenin Library, either through direct use by the scholars, curators, and researchers or through the use of inter-library loan procedures specifically established for their support.

The Deputy Minister of Culture of the USSR, Mrs. Nina Silkova, stated the primary theme of the exchange: to explore the possibility for widening contacts between the two countries, especially in terms of expertise in particular subject areas. She noted that Americans are considered to be "businesslike people," and indicated that she welcomed these initial personal contacts, with the hope that additional contacts would come from these meetings. The Deputy Minister suggested that this series of meetings might be our "small contribution in the cause of peace."

Mrs. Silkova brought up the subject of technical development in museum librarianship, and noted that the USSR accepts the fact that, in information technology, Soviet libraries are still catching up with those of the United States. She pointed out, as did others, that the lack of technological equipment, expertise, and advanced technical training, as well as sufficient funds for instituting rapid change, were weak points in the program. There is sufficient personnel to perform all tasks and, as the delegation could see, more than enough work to be done.

In addition to discussing technology, however, Mrs. Silkova solicited from the members of the American delegation their opinions about some of the more general problems in museum librarianship in the USSR. The Deputy Minister offered her own list of concerns–collection maintenance, facilities, the need for professional information, and the fact, that technology is not reflected in libraries–and encouraged the American delegates to discuss other problems which needed to be addressed. These included such subjects as the lack of prestige of librarianship as a profession (including concerns about low salaries), the vast wealth of resources—with Soviet museums and libraries having so much to offer the rest of the world, the size of the problem and the enormous amount of work to be done, and the need to analyze and recognize priorities for resolving these issues.

The Deputy Minister received with enthusiasm the American delegation's suggestions about the value of a networking organization or professional association for librarians and library workers. The formation of such a group is presently under discussion, and Mrs. Silkova welcomed Dr. Bender's suggestion that SLA would contribute materials about association management for the State Lenin Library. The general offer of assistance from various members of the American delegation, all of whom are active in various library associations in addition to SLA, was also welcomed by Mrs. Silkova.

The Americans agreed that the meeting with Deputy Minister Silkova was important, not only because of the subjects discussed, but because it added a certain level of credibility to the exchange, showing specifically where such an exchange is positioned in the thinking of the library establishment in the USSR. For those who follow the USSR scene closely, this meeting says much about the relative importance of the visit of five American librarians and the thrust, in the Soviet Union, toward enhanced library management.

Information technology was considered in other meetings, when Mrs. Lapteva described the massive work of the Information Centre on Culture and Arts of the State Lenin Library. The automation system now in use at the State Lenin Library was described by Mr. Anatoly P. Repin, Head, EDP, Information Centre on Culture and the Arts, and representatives of the Institute of Social Sciences described work on thesaurus construction in the USSR. In discussing thesaurus work, three suggestions were made:

- that research in linguistics be continued;
- that a plan of cooperation be established,

particularly in the field of translating Russian into English and English into Russian; and

- that there be further discussions in the field of bilingual thesauri.

It became clear that the American delegates should identify thesaurus specialists in the United States who can be put in touch with the State Lenin Library. Additionally, at Dr. Bender's suggestion, it was agreed that it is necessary to determine the focus of the thesaurus, with the signing of an agreement, perhaps a protocol, determining whether such a thesaurus is to be limited to art and architectural terms. Mrs. Lapteva suggested that the area of thesaurus study should be one of the main directions of our cooperation, primarily by putting specialists in touch with one another. As far as the subjects are concerned, Mrs. Lapteva strongly recommended that bibliography and librarianship be the first subjects studied, as the work might go faster since it would satisfy professional concerns. Serious work is already being done in these subjects in the USSR, and the Soviets are anxious to see the basics of thesaurus construction defined before more subjects are tackled.

Thus, the American delegates are prepared to undertake several initial steps. Under the aegis of the International Relations Committee of the Museums, Arts and Humanities Division of SLA, the following activities have been proposed:

1. Compilation and distribution to USSR delegates of a list of experts in thesaurus construction,

2. Distribution and coordination of materials sought by and offered by the Pushkin Museum Library,

3. Compilation and distribution to USSR delegates of a bibliography on restoration and preservation of works on paper (including books and manuscripts),

4. The compilation of materials and resources for network development, especially pertaining to the formation of professional library associations, and

5. A continuing dialogue, through correspondence, between the members of the delegations.

The American delegates agree the meetings were a success and expect, through these efforts, to contribute to the advancement of relations between the museums libraries communities of the USSR and the United States.

IFLA 1988 Living Together: People, Libraries, Information

Frank H. Spaulding

The International Federation of Libraries Association (IFLA)'s 54th Conference convened from August 27-September 2, 1988, with representatives from 59 countries (132 from the USA). Because the Library Association of Australia's annual conference took place before IFLA's, many Australian librarians were able to attend their first international conference. The high level of interaction and exchange of ideas proved useful.

Hans-Peter Geh, IFLA President, stated this conference with its theme "Living Together: People, Libraries, Information", appeals to working together and mutual understanding on both national and international levels. In view of the interdependence of countries and increasing demand for information in all parts of the globe, the international exchange of information is crucial. Free exchange of information over national borders, the universal accessibility of literature and information by traditional and electronic means, as well as the preservation of cultural heritage in the form of the book are the prevailing concerns of the International Federation of Library Associations and Institutions. The Council, composed of association and institution representatives, did not meet this year.

Programs

Following the general session, the remainder of the programs took place at the University of New South Wales. On the first day the Professional Board Chair presented a review of progress achieved in IFLA's core programs.

The Universal Availability of Publications (UAP) program reported a contract had been signed with UNESCO for preparation of a document on *Measuring the Performance of Document Supply Systems*. Also, a contract was awarded to update the 1984 publication *The Impact of New Technology on the Availability of Publications*. The Universal Dataflow and Telecommunications (UDT) program's two projects for 1988 were: 1) Use of Open Systems Interconnection (OSI)-based Interlibrary Loan (ILL) protocol for the international exchange of electronic ILL messages; and 2) creation of a technical working group within IFLA to formulate the positions of the library and information community on OSI-related issues.

The Universal Bibliographic Control and International MARC program (UBCIM) has published the long-awaited *Guidelines for the Application of the IBSD's to the Description of Component Parts* and continues work on the *UNIMARC Manual*. This program's work will likely change due to the rapid developments in computing technology, telecommunications and in media for the distribution of bibliographic records. The Preservation and Conservation Program (PAC) continues educating and training professionals in conservation and preservation work. They have issued many publications on disaster planning, preservation microfilming, mold prevention, etc. Consultation and assistance was given to the

USSR due to the serious loss of 398,000 volumes destroyed by fire in the library of the Leningrad Academy of Science. The Advancement of Librarianship in the Third World program (ALP) reported the initiative of the three year Nordic Proposal on "How Best to Serve Third World Countries with Library and Information Service." Also, work has begun on the revival of the Alexandria Library, which was a landmark of the famous Egyptian metropolis.

Program highlights (summarized by attendees): The Science and Technology Section presented an excellent program on "Networking Potentials and Limitations in Socialist Countries, Developing Countries, and in Europe and North America." Roland Brown of OCLC talked of the potential of global networking beyond the focus on library technical services activities to reference services, improved access, and full text delivery.

During the Art Section, Nancy Allen, of Boston's Museum of Fine Arts, discussed the possibilities of special membership afforded museum libraries who contribute to the RLG database and the Art and Architecture Program committee of RLG. Social Sciences Section delegates presented a report on the remarkable increase in attention paid to information and information technology by general business literature in recent years.

Marianne Broadbent of Melbourne's Institute of Technology, and Mike Koenig, of Rosary College's GSLIS, discussed information and information technology for competitive advantage, management of the information and information technology archipelago, information enterprise analysis, development of information technology and systems upon organizational structure, competition, and productivity.

Dorothy McGarry, SLA representative to the Cataloging Section, reported the Working Group of the Section on Classification and Indexing is doing important work on *"Guidelines for Subject Authority Files."* This group will formulate guidelines for subject authority records and their interrelationships with subject authority files, evaluate the suitability of the UNIMARC authorities format for subject authority records and will consider relationships between subject records and classification. The Paris program will include a workshop dealing with the online 20th edition of DDC.

Carolyn Brown, SLA representative to the Biological and Medical Libraries Section, attended a program explaining the Australian health education and promotion system network, cooperative efforts of European medical libraries, and a description of a Maori health knowledge database—with emphasis on the importance of culture to an individual's health.

Mary Murphy, SLA representative to the Geography and Map Libraries Section, flew to Canberra (Australia's national capital) to tour the National Map Collection and the Australian Surveying and Land Information Group. She also attended two presentations on "Geographic Information Systems" and "Promoting Maps to the Australian Public-Nationwide Map Week". This section's 1989 projects will include a workshop (January 1989, Jamaica) and a manual of map curatorship as well as a revised edition of *Worldwide Directory of Map Collections.*

Lolly Gasaway, AALL representative to IFLA, attended two substantive programs sponsored by the International Association of Law Libraries on the settlement of international commercial disputes and the formulation of policies regarding access to legal information. AALL is seeking a stronger involvement in IFLA to increase its international presence.

David Bender, Executive Director, SLA, is an active participant in IFLA's Round Table for the Management of Library Associations. This year's focus was on four projects: 1) model library associations; 2) *Guidance for the Management of Library Associations* (original manuscript by D. R. Bender, written by Ray Palmer of MLA); 3) status of librarians and information workers (a state-of-the-art report is being investigated); and 4) management of library associations seminar (based upon a program drafted by D. R. Bender). The

seminar will take place in April, 1989, the Netherlands.

IFLA's Section on Information Technology presented a marvelous program to a standing-room-only audience on "Information and Control: OSI and Networking Strategies". Both Neil McLean, Polytechnic, London, and Mike Malinconico, Pratt Institute, Brooklyn NYC, USA, emphasized the need of OSI systems to couple functions, organizations and nations. The Library Theory and Research Section presented papers on "Research in Australia" and "The Image of the Library". The latter paper by Valeria Stelmakh of the Lenin Library of the USSR, stated there was little research in this field and was nothing more than a "content-analysis of fiction and professional literature that serve as an ideal field for exploiting stereotypes of libraries and librarians"—amusing but not substantive research. During the discussion period I told the audience about the current SLA Presidential Task Force that is conducting research on the image of the librarian/information professional.

Miriam Tees (SLA President, 1975–76), Chair of the Education and Training Section, presented an excellent program on "Human Relations in Library Education." Patricia Willard of the University of New South Wales spoke on the importance of developing respect for the user in library science students as the guiding force in professional practice. The user is central to library purposes. Robert Stueart of Simmons College gave an excellent talk on human relations or interpersonal skills among colleagues. Peer relations reflect the concern of individuals working in the organization and group interactions are necessary to achieve both goals and the management view of "getting things done through people". The human resource is the most important of all the library resources. Truisms well retold.

Of the 86 conference papers submitted prior to the IFLA Conference, 12 were by US information professionals and of this, 3 by SLA members. Not a very large contribution from an advanced information-driven country. Copies of many of the presented papers are available from the Special Libraries Association Office.

Participation in IFLA

President Joe Ann Clifton has asked me to evaluate "SLA's role and participation in IFLA, including a review of the committees to which we may belong, and those to which we do belong; with a plan of implementation if we are to remain active participants." A report is required at the 1989 SLA Winter Meeting. I have asked all SLA representatives and attendees at the 1988 IFLA Conference for their advice and guidance. I would also appreciate receiving comments from previous SLA representatives and attendees to IFLA meetings.

The 1989 IFLA Conference will take place in Paris, France, August 19–26, with the theme "Libraries and Information in Yesterday's, Today's and Tomorrow's Economy." Information on the 1989 conference can be obtained from the Special Libraries Association, 1700 Eighteenth Street, NW, Washington DC 20009.

Frank H. Spaulding is a library/information consultant and a past president of Special Libraries Association.

SLA Interviews Pat Molholt

Elaine Hill

Pat Molholt is associate director of libraries at Rensselaer Polytechnic Institute in Troy, New York. Her background in the information profession includes experience as a physics librarian at the University of Wisconsin, and assistant professor and director of the Science and Technology Library at the University of Wyoming. She has authored numerous articles, served as adjunct lecturer for the School of Library and Information Science at SUNY/Albany, and spoke at the Special Libraries Association (SLA) 1987 State-of-the-Art Institute on "The Influence of Technology on Librarianship." Her name has appeared in Who's Who of American Women *since 1978.*

Ms. Molholt has been an active member of SLA since 1970. During 1983 to 1984, she served as SLA president, and, in 1987, she received the Fellows Award for serving as an outstanding leader in the profession and making a significant contribution to the Association.

During 1987 to 1988, while on sabbatical from Rensselaer, Ms. Molholt worked with the Office of Library Programs, U.S. Department of Education, studying the role of libraries in regional and national network environments. Her subsequent report, "Library Networking," which was released by the U.S. Department of Education in June 1988, summarizes the current situation of networking and outlines a potential role for the Office of Library Programs in developing library networks.

On May 25, 1988, I haa the pleasure of meeting with Ms. Molholt to discuss the results of her work with the U.S. Department of Education and the impact of new technologies on special librarians and information professionals. The conversation, which follows, provides an interesting and thought-provok ing overview of the future of the information profession.

EH: In your speech at SLA's 1987 State-of-the-Art Institute, you stated that "Amplifying technologies open to users vast information resources that are unavailable in other, more traditional forms." In particular, you emphasized the integration of multiple technologies to serve a single purpose. Could you discuss this trend and how it will impact special librarians and information professionals?

PM: As new technologies come along, new applications are constantly being created, resulting in a collection of different pieces. We have CD-ROMS, external databases, video disks; we have an array of different technologies. What we need to do, and what is happening in the field, is to integrate these different technologies so that they work together. I think we are going to see the creation of a new concept of visual/textual literacy, one that combines a lot of the different approaches to information. We're going to create information environments—systems that, in a sense, surround us with information.

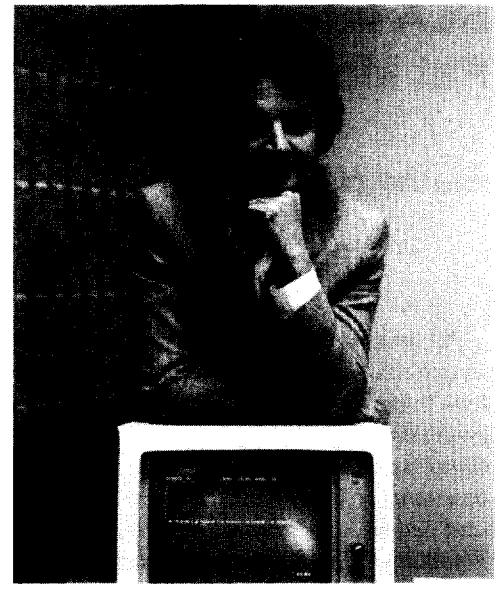
Special libraries represent, in my view, special circumstances. I think they have a uniqueness in being close to users, and they're generally better integrated into the organization. Typically, special libraries have the ability to innovate, since they often have resources available to them within the organization. They also have the incentive to innovate. As cost recovery centers, they often have to be more conscious of what's happening in the organization. For them, integration is going to be seen as a useful and natural step.

EH: How will this technology impact users?
PM: It will impact users by extending their ability to access information. Artificial intelligence (AI) technologies, and other merged technologies, have to get to the point where it's the touch of a screen, a voice spoken to a voice-activated system. These technologies will become integrated in such a way that the user is unaware of their existence. This is already beginning to happen with the result that users have easier and more extensive access to information and the ability to access in ways that are more convenient and comfortable.

EH: In the past, you have described computers as having taken on the image of collaborator. Would you discuss this in more detail?
PM: This has to do with a basic difference in perspective. In earlier days, we worked for the machines. Although they did things for us, we had to adapt tremendously to what it was that they were capable of doing. Now we are seeing a change in that machines are working for us, technologies are working for us, and we are able to use them in more creative ways.

There are two people that I know of who are speaking very actively about the collaborator concept. One is John Scully, CEO of Apple Computer. His label for it is the "knowledge navigator." The other person, Robert Kaun, Corporation for National Research Initiative, calls them "knowbots." In both cases, the implication is that technology will be personalized to the needs of the individual using it. Users will have a software program that models their needs and their preferences, and which will be able to operate within the complex electronic information environment on behalf of the user. That concept of the collaborator is really quite an exciting one and there are a number of people, including Scully and Kahn, who are trying very hard to make this a reality.

I'm concerned about the role of the librarian, and I am trying to see that we, and other information professionals, have a presence, a role in the creation of these "knowbots" or knowledge navigators. Our experience is so extensive. Our profession has the most extensive experience with information handling, albeit in a manual mode. I'm trying to be sure there's a role and a place for the profession in this development. I am concerned about what I see happening. There are individuals from other fields—electronics, engineering, cognitive sciences—who are coming in with great fanfare and promoting concepts that in a way trample on our profession. We are not being taken adequately into account. Our incredibly relevant experience, that we have had as a profession in designing information systems, is being ignored.



Pat Molholt, associate director of libraries at Rensselaer Polytechnic Institute in Troy, New York.

EH: Would you discuss the "individuation of access techniques" and how this will affect users and information professionals?
PM: Libraries, whether we like it or not, are not "user-friendly." We designed them to handle massive amounts of information, and, to do so effectively, people and questions and responses are structured and categorized. The only way we have been able to deal with millions and millions of books was to devise very rigorous systems for describing those books. In order to cope with the vast amount

of information, we've had to categorize it. We've had to insist that users go about meeting their information needs in particular ways, using our definition of author and our definition of title. Individuation is changing that. We're getting rid of those boxes and, in a sense, creating a landscape of information which focuses on concepts embedded in those authors and in those titles. With an individuated system, people will be able to more effectively use their own definitions and their own approaches to information. For example, you organize your own desk files in ways that make sense only to you. Yet when you walk into a library, no matter what your individual view is, you have to conform to the system someone else set up. We're getting rid of that. We're opening that up and allowing users to come into even the large systems, not just their personal system, by means of their own way of thinking about the world and about information. This is changing the whole mind set of how we go about creating systems.

EH: How will AI assist in accomplishing individuation? What are the implications?
PM: AI is really the technology for accomplishing that individuation. Because of the way it structures information, the way it approaches information, it has a double impact. One is that it requires that we work with the technology and shape it to our own needs. No technology really was designed specifically for the library. It was designed for others. The first aspect is to modify the technology to meet our needs. That's where AI is very flexible. The second aspect, which I think we have failed to pay adequate attention to, is that we have to modify the environment we're working in; we have to make it receptive to the technology. It's that aspect that I think is a feature we need to pay more attention to.

AI has a tremendous amount of potential at many levels. You can get involved in some very simple, inexpensive packages of expert systems for $49.95 and get a feeling for what it can do. Or you can go way out on the expensive end of things and have someone build these very complex systems. It's a very flexible tool, it ranges very widely, and it's going to start underpinning, or supporting, more and more of what we do without our even knowing it. It's just going to be there. Query systems will start to show features of AI. If it's done well and done right, it should come in very gently and very quietly and not be obtrusive at all.

EH: A number of individuals, including yourself, have mentioned a trend toward the disembodiment of libraries. Could you extrapolate on this?
PM: Yes, I called it the "Cheshire Cat Syndrome." This is a very deliberate analogy. What I mean by this is that the big body of this cat that we've been used to dealing with is slowly fading out, is disappearing, but there is something left—a smile, which I interpret optimistically, i.e., that there is still a role for the profession. The traditions that we've dealt with may be disappearing, but there is something left for us in this new environment.

There seems to be more questioning than usual about what the future of the library is going to be. I encounter it again and again. I think it's because there is some truth to this concept of disembodiment. People are worried about AI technology which is going to foster that disembodiment. We have to deal with information taking on new forms, moving away from book packages to information packets. As long as libraries held the *actual* information, and only references or citations were in electronic form, then the library was in the loop. Libraries had a clear role—they held the information. We are seeing now that more actual information is coming out in electronic form. The electronic information environment is already very complex; we have to assume that there's going to be an intermediary, whether it's a person or this "knowbot" concept. We don't, however, need the library to hold the electronic information because information won't exist in a form that we can stick on the shelf. This whole area, however, is rife with social questions. What do we do to avoid creating the information rich? The information poor? Is there a longer term role for

the library as an equalizer, as an access point, for that part of the population which cannot afford its own access mechanisms? Those kinds of questions have to be asked and are very important ones.

The library is disappearing; I firmly believe that. There will be pieces left. We've got a tremendous amount that is in paper form. Humanists, in particular, are concerned about their areas because their use of information is far more intense, in-depth, than in science and technology. Normally a scientist or engineer goes in looking for a rather limited kind of fact or table, or something that is quite precise, and they need it for a very particular purpose. In the humanities and social sciences, research is much broader. They go through volumes and volumes and masses of material trying to build cases, trying to build connections. This is putting it all on a simplistic level, but for these individuals there is a great deal of fright. The idea of having to look at a screen for hours on end because they don't have a book that they can sit comfortably with is frightening. We have to deal with that; we have to devise access systems that are going to allow individuals to facilitate what it is they do without the threat of having to sit in front of a terminal just looking at a screen. There are a lot of issues, but it's a fun thought in my mind, not a frightening one.

EH: How will this impact special librarians and information professionals?
PM: I think they're going to move with it or they're going to move out of it. They're going to move with the changes in the information environment, incorporating them, making them work to their advantage, and serve their corporate users, or they're going to choose, or be forced, to move out, go into some other field, or stay in the much more traditional library environment which will exist for quite a long time. We are not capable of digitizing all information in the Library of Congress, for instance. It's not that it's not being talked about, but it is, at this point, a physical impossibility. There will be the option for some individuals to stay in a very traditional environment. Some of us, as I have said in other contexts, will be designed out of the system. There will not be the traditional role, for instance, of collection development. It just won't be relevant any longer. Individuals will have access to what they want and need. No one will select whether it's going to sit on the shelf.

Library schools are caught in a bind right now. On the one hand, they have to graduate individuals who are able to deal with the traditional environment, while at the same time recognizing that there is a new information world out there starting to develop. It is difficult to play both of those roles effectively.

EH: During 1987, you spent five months at the U.S. Department of Education's Office of Library Programs studying the role of libraries in regional and national networks. What were some of your findings?
PM: I'd like to start off by saying I had a wonderful time. I really enjoyed it. It was a true sabbatical, a true break from all the daily routines, and it confirmed to me the value of freeing up the staff, disengaging them, allowing them real time for creative thinking. Second, I have to clarify that the work I did with the Education Department had to do with telecommunications networks, not interlibrary loan networks. It was a technology-based piece of work. In a very real sense, however, I did come around full circle to considering the resource-sharing networks and looking at them in context of telecommunications networks.

In my investigation, it became clear that, in all aspects of the profession, economics are playing an increasingly dominant role, to the point that they are affecting our decisions to share our resources. We have libraries buying cataloging copy from third-party vendors and mounting that in their own internal systems with no interest in making that information available outside of their local systems. They can then serve their immediate clients, but no one in their county, state, or in this country knows that they have a particular item. The whole interlibrary loan system then grinds to a halt.

I made a number of recommendations in my report, available from the U.S. Department of Education, Office of Library Programs. We need standards and mechanisms to enforce them. We have standards now for what constitutes acceptable cataloging, preservation, microfilming, and other areas. We need to take those standards more seriously because they underpin our ability to share information. We have to be able to rely on the fact that what one unit is doing, the other unit is doing in the same fashion so there is compatibility. In addition, we need research and experimentation.

There is now emerging a new standard for activity between telecommunications systems. The library community has been instrumental in developing the Open Systems Interconnect (OSI) model of networking. Further research is still needed on connecting different systems. For example, how does the NOTIS system get connected in an OSI environment? How does any other particular vendor system get connected in that environment? If we are able to get connected, if are able to share our resources, the effect on the user will be dramatic: Users will be able to have access directly to information resources. For instance, my library happens to have its information system available on the New York State Educational Resources Network. You can zing into it on the wire and look at what my collections are, but you can't touch them. Just because you can come into the system and you know I have a particular item doesn't mean you have access to it except by the traditional means of going back to your local library, filling out a form, and having that interlibrary loan request sent to my library, etc. Therefore, we need to experiment with resource sharing and service to patrons in models that we have not operated on. What sort of national mechanism do we need to implement to facilitate that? There is work going on in this area. OCLC has created a category of library users that agree to share on a direct basis with the patrons of other libraries. RLG has done something similar. But we need to start at the very local level and move toward even larger circles. These circles will start to intersect, and we will have another whole set of networks and connections. There will be an impact on services, so we need to rethink how our services are offered and exactly what services users want.

EH: How can special librarians and information professionals become more involved in these networks?
PM: In the sense of telecommunications networks, special librarians and information professionals have the chance to be in the forefront, depending on what their organizations are already connected to, what kinds of networking activities exist, and their ability to share access with other members of the same corporation. How they cross types, how the special library exchanges its information and resources with the academic and public libraries by means of telecommunications nodes is much more difficult to work on because we don't have the systems in place which link the public library and academic library and special library. Just as there has been acceptance, or a tolerance if not acceptance, of the for-profit sector in conventional resource-sharing networks, we need to look for that same kind of involvement and acceptance in the telecommunications area. There have been, at times, a feeling that for-profits were a different kind of animal, that they couldn't get involved in multitype library networks. We have pretty much proven that there are no laws restricting it. We just have to keep building on those programs.

EH: What do you forsee as the future for the information profession?
PM: I want to see it as a positive future that starts with information professionals continuing to learn, continuing to develop skills. I firmly feel that librarians have a role to play. My biggest question is will we choose to play it? Will we as a profession carve out a new role for ourselves or will we operate in very much the same fashion that we have for centuries? This has me very concerned. Not only do we seek candidates for the profession based on

certain qualities they have, but individuals come to this profession with particular expectations. I'm suggesting that the criteria we have used in the past may no longer be appropriate for the new information environment; we may need to develop new standards against which we select individuals for the profession and get the individuals who wish to enter our profession to understand that it is not what is has been. It's a new ball game.

Elaine Hill is editor of non-serial publications for Special Libraries Association.

Actions of the Board of Directors October 20–21, 1988

The SLA Board of Directors met at Association headquarters in Washington, D.C., October 20–21, 1988. Actions taken and reports of note are summarized below.

Presidential Task Force—SLA President Joe Ann Clifton started the meeting by discussing the progress of the Presidential Task Force on the Enhancement of the Image of the Librarian/Information Professional. The task force, which met in Denver following the Annual Conference and in Washington, D.C. in September, is on schedule with work on its project. A survey, which will solicit information on the perception of librarians and information professionals, will be mailed to six groups and will provide the core of information needed for the report. A presentation of the task force findings is planned for Tuesday, June 13, at the 1989 Annual Conference.

In the Executive Session, the Board received and approved the report of the nominating committee for the 1989 election. The candidates for the spring election are:

President-Elect:

Ellen Steininger Kuner, Burson Marsteller, Chicago, IL
Ruth K. Seidman, Massachusetts Institute of Technology, Cambridge, MA

Chapter Cabinet Chair-Elect:

Richard L. Funkhouser, Purdue University, West Lafayette, IN
Eleanor MacLean, McGill University, Montreal, Canada

Division Cabinet Chair-Elect:

N. Bernard "Buzzy" Basch, EBSCO Subscription Services, Barrington, IL
Judith Genesen, Chicago Transit Authority, Chicago, IL

Directors:

Annie M. Brewer, Omnigraphics, Inc., Detroit, MI
Harold W. Miller, Touche Ross & Co., New York, NY
Frederick W. Stoss, Center for Environmental Information Services, Rochester, NY
Lois Webster, American Nuclear Society, Chicago, IL

The Board also elected the 1990 Nominating Committee. Members of the committee are: chair, Paul Klinefelter, U.S. Department of Defense, Alexandria, VA; Barry Hennessey, University of New Hampshire, Durham, NH; Bob Issacs, Fort Lauderdale News-Sun Sentinel, Fort Lauderdale, FL; Ellen Mimnaugh, Information Consulting, Inc., Columbus, OH; and Sylvia E.A. Piggott, Bank of Montreal, Montreal, Canada.

Special Programs Fund Grant Award. The Board also reviewed eight applications for the 1988 Special Programs Fund Grant and selected two recipients. The programs, recipients, and funded amounts are: 1) "SLA Members Recruited as Students: What Influenced Their Decision," Tillie Krieger, College of Staten Island Library, Staten Island, NY; $750 and 2) "Management of Information in Corporate and Academic Environments in the 1980s," Marianne Cooper, Queens College, Flushing, NY; $5,600.

The Board, in their final business in Executive Session, reviewed and approved the performance evaluation of the Executive Director as recommended by the Association Office Operations Committee (AOOC).

1989 Budget Approved. In their discussion leading to the approval of the 1989 budget, the Board reviewed the August Financial Report and the Merrill Lynch Investment Account. Association Treasurer, Cathy Jones, reported on the financial health of the Association and reviewed a recommendation for fund-

ing priorities in the event of a surplus in the 1988 budget.

At the recommendation of the Finance Committee, the Board approved a $150,000 paydown on the mortgage of the Association's headquarters building. This will save the Association an estimated $89,149 to $104,370 over the period of the loan and will make the last payment on the building due in September 1994 rather than March 1995.

An analysis of the costs-per-member for SLA was also reviewed by the Board. In 1989, the cost to service a member has been estimated to be $143.18 as compared to $134.19 in 1988. In 1984, the cost to service a member was $84.42.

The Board also approved a revised Travel and Expense Policy for the Association. In related financial matters, the Board reviewed the purpose of the seven existing Subsidiary Funds: Reserve, Scholarship, Special Programs, Computer, Building Reserve, Coplen, and NSP. Additionally, the Board approved the purpose statement for the Research Fund. The Board approved the appointment of Canto, Metro, Meyer & Company as the Association's auditors for fiscal year 1988.

Committee Business. Twelve of 18 Association units requesting funding for the coming year received approval of their requests. Requests for funding have increased substantially in recent years. Those Association committees receiving funding are: Awards, Cataloging, Committee on Committees, Consultation, Copyright, Networking, Pittsburgh Conference, Positive Action Program for Minority Groups, Professional Development, Scholarship, Standards and Strategic Planning. New brochures were approved for the Consultation Service and Positive Action Program and funds were allocated for those items in the Association's Public Relations budget. A slide/tape show, to be developed by the Copyright Committee, was also approved and will also be funded through the Public Relations budget.

The Committee on Committees recommended a charge for the Research Committee which was made a standing committee by Board action in June. The charge of the committee states the committee will "advise the Board of Directors and Association on matters pertaining to research in library and information science and related fields...and will encourage cooperative efforts with other groups toward the advancement of research in library and information science and allied fields." A complete copy of the charge of the Research Committee is available from SLA.

Environment and Resource Management Division. The Board reviewed and approved the proposed merger of the Environmental Information and Natural Resources divisions which will be renamed the Environment and Resource Management Division. In a separate action, the Board also funded a request of the division to prepare a brochure and comprehensive directory to "facilitate the merger" of the two divisions.

Conference Updates. William Woodruff, chair, 1989 New York Conference Planning Committee, presented an update on the work of the Committee for the coming conference. Among the events conference participants can look forward to are a First Time Attendees Reception Sunday afternoon, two keynote speakers, two contributed paper sessions, and a repeat of the successful "strategy sharing roundtables." The Annual Awards Banquet was changed to an Awards Luncheon to reduce the cost of the ticketed event for participants. The fundraiser will be an art auction Sunday evening. Other events, including a reception at the New York Public Library and a contributed paper session of special librarians from Japan, are being finalized.

Harold Miller, deputy chair of the 1990 Annual Conference, presented the theme for the Pittsburgh conference, "The Information Professional: An Unparalleled Resource." The Board enthusiastically approved the theme.

Government Relations. Three resolutions were brought to the Board by Donna Scheeder, chair, Government Relations Committee. The first, on Canadian Copyright, encourages the Government of Canada to approve the second phase of its copyright revision with all deliberate speed. Entitled "Dissemination of Government Information in Electronic Formats," the second resolution supports the demonstration project initiated by the Government Printing Office and the Joint Committee on printing

and urges the implementation of the Federal Depository Library Electronic Dissemination Information Project. The final resolution, on the White House Conference on Libraries and Information Services II, reiterates SLA's support of the White House Conference and asks the President of the United States, the Congress, and the National Commission on Libraries and Information Science to appoint members to the Advisory Committee as soon as possible. All three resolutions were enacted as official policy of the Association.

Professional Development. Executive Director David Bender reported that SLA's Resume Referral Service will be implemented in January 1989. An article on the service appeared in the November issue of *SpeciaList*.

In related issues, the Board acted on the recommendation of the Professional Development Committee to increase fees for full day continuing education courses to $125 for members and $150 for non-members. Fees for other offerings, such as half day workshops, will be based accordingly, taking into account instructional hours, and development and promotional costs.

President-Elect Muriel Regan made a motion, which was passed by the Board, that the Association institute a scholarship for the Executive Development Academy beginning with the 1990 Academy. The Board moved that the Scholarship Committee develop the criteria and procedures for the scholarship for approval by the Board.

Caucus Approved. The Board approved the formation of the Solo Librarians Caucus. The purpose of the caucus is to "share ideas, problems, and solutions unique to the librarian or information collector/provider who has no professional peers within the immediate organization." The convener for the Solo Librarians Caucus is Martha Rhine, Olin Corporation, Marion, IL.

The Board did not approve the petition of the Caucus on the White House Conference on Library and Information Services because it was found to be in conflict with an existing Association unit, the Government Relations Committee.

Interassociation Cooperation. The Board approved a motion to join the National Institute for the Conservation of Cultural Property and the National Alliance of Business.

Next Meeting of the Board of Directors. SLA's Board of Directors will meet again in San Francisco, January 25–27, 1989, as part of the activities of the Winter Meeting.

Reviews

Unequal Access to Information Resources: Problems and Needs of the World's Information Poor; edited by Jovian P. Lang. Ann Arbor: Pierian Press, 1988. 250 pp. ISBN 0–87650–239–7. $35.00 (softcover).

The underlying thesis of *Unequal Access to Information Resources* is that the flow of information is basic to the democratic process, and access to that flow should be the inalienable right of every citizen. In recent years, however, the broad perspectives of technology and user's fees have threatened the tradition that the library community should provide free information. In addition, government is a major provider of information in all forms. It both compiles and funds the collection of information. When government curtails funding, access to information is in jeopardy, not just in government outlets, but in libraries of all kinds all across the country.

This volume has been put together as a reference resource on access to information, one of the three major areas of concern pinpointed for the next White House conference on libraries. The collection of papers is an amalgam of the proceedings of the Congress of Librarians which took place at St. John's University, Jamica, New York, early in 1986, combined with additional papers gathered to reinforce the gaps not covered in a one-day session. The papers document most of the obstacles encountered, even in an open society, by different segments of the general public which libraries are designed to serve, particularly public libraries: youth and the elderly, the poor and the illiterate, disabled or gifted, inner-urban, rural; and outside the United States, the Third World. Each group has its own limitations in dealing with information which should be in the public domain. Some special categories have been overlooked, probably because they can be subsumed in one or more of the general categories. Professionals and semi-professionals are an example: those whose work location keeps them out of touch with the major information resources in their field. The geography of distance, which is cited as one of the major causes of inequity in information delivery, puts them in a double bind as well as their neighbors, since it affects the quality of the services they can provide to their remote community.

These disadvantaged citizens are the people who are normally invisible to librarians. They are the ones who don't use our libraries, the ones we forget to notice are not there. And because the people are invisible, the reasons they are not in libraries escape us. Most of them—the disabled, the illiterate, the elderly—have their own specific inabilities to contend with, as well as the inflexibility of library policies and library buildings. In discussing the obstacles and equipment that can assist them if available, including staff time, cost and budget limitations have been acknowledged; but an equally awkward element of the library environment has not been highlighted. Librarians may want to help, but they must know how—and each disability requires a different set of skills to meet it, and probably a non-print format to match.

The blind, the lame, and the dyslexic among us experience major blocks in their search for information with which order their lives—blocks that are physical, fiscal, effective, and beyond their control. The plight of people in the Third World is worse. Their problems include computers, satellites, finances, illiteracy, nationalism and government restrictions both inside and outside each country, in addition to individual incompetencies. It is not just a matter of beaming databases across the darker continents. Even if all the obstacles of international rivalry and profit-taking should be overcome, most of the database information is designed for application in the developed countries, and presupposes infrastructures and capabilities which are not available in other societies.

The editor of Unequal Access is to be congratulated for including the piece on *Setting Priorities* by William D. Carey. In many ways it is the high point of the collection. Coming, as it does, in the midst of a litany of almost insoluble problems in the delivery of information to all people in all possible forms, it inserts a shaft of hope that at least some of them can be solved, and provides a glimpse of the "good society".

One of the major obstacles to access information which impinges ultimately on the activities of all types of libraries in the United States is the posture of the federal government. This has been topic of increasing concern in the Regan years. The Special Libraries Association put out a special issue on the subject last summer (1988). The implications are thoroughly documented in *Unequal Access* as well. Articles on the subject are supplemented by a series of appendixes which profile the trend toward privatization and commercialization of government information, as well as increasingly narrow access. Indeed, this is a well-rounded reference resource on the constrictions to knowledge in a democratic society. It should fulfill its purpose with great

credit. As a final contribution an extensive bibliography has been included. it covers all the aspects of unequal access which have been identified, in addition to the references attached to th individual papers.

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Ethical Challenges in Librarianship, by Robert Hauptman. Phoenix, Arizona: Oryx Press, 1988. 110 pp. ISBN 0–89774–271–0. $22.50.

The issue of professional ethics in library and information service is a complex and difficult one. Although codes of ethics and standards of behavior exist, most librarians and information providers do not give the issue enough serious thought, says Hauptman, reference librarian and assistant professor at St. Cloud State University, St. Cloud, Minnesota. In his book he seeks to raise our consciousness by providing both an overview of ethics and a specific, wide-ranging survey of situations in library and information work in which ethics come into play.

Hauptman's point of view is, as he expresses it, one of "iconoclastic advocacy" (Preface, p. xi), in which he attacks unquestioning adherence to such codifications of professional ethics as the American Library Association's Statement of Professional Ethics, the Library Bill of Rights and the Freedom to Read Statements. He focuses on areas where professional ethics may clash with personal ethics or social responsibility and argues that ethical codes and statements rob one of, or allow one to avoid, personal and social responsibility.

The two introductory chapters on ethics, librarianship and professionalism set forth Hauptman's position. In the following chapters, he examines ethical concerns in selection and technical services, access services, reference, computers, censorship, special problems (administration, fees for service, government information, academic advancement, children in the library, and book reviews), and consulting, freelancing, and information brokering. Each chapter opens with descriptions of various activities and their ethical (and sometimes legal) implications, followed by case histories which include questions for further discussion. A variety of library and information settings are used in the examples, and many of the issues are common to more than one type of setting, including special libraries, information centers and independent information providers.

Although the author sets forth some general ethical axioms and comments generally on the ALA Statement of Professional Ethics, the overview is very brief and offers little in the way of a conceptual framework, either professional or personal, by which the specific ethical challenges may be considered. Such a framework might include some professional obligations as access to information, confidentiality, and avoiding conflict of interest, of which Hauptman seems to approve in some contexts and to which he frequently refers in the examples. Some of the examples do not seem to be particularly relevant to the discussion—the issue of salaries, for instance—and thus distract from rather than add to the book.

Nevertheless, *Ethical Challenges in Librarianship* is a provocative book and Hauptman's viewpoint is one to be considered. A reader who is seriously interested in professional ethics in library and information service should read *Professional Ethics and Librarians* by Jonathan A. Lindsey and Ann E. Prentice (Oryx Press, 1985), the various statements of professional ethics, and other writings on professional ethics. Hauptman's book can then serve as a resource for further reflection and discussion.

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Developing Microcomputer Work Areas in Academic Libraries, by Jeannine Uppgard. Westport, CT.: Meckler Corporation, 1988. 124 pp. ISBN 0–88736–233–8. $37.50

Here is a brief but valuable account of some of the practical aspects of setting up a microcomputer work area. Presented as a series of case histories, the work describes how it was done in five different academic libraries. The book was actually edited rather than authored by Ms. Uppgard, for each of the narrative chapters was written by a different person intimately involved with his/her library's microcomputer services.

The introductory section, in less than two pages, identifies the main problems and issues which must be addressed in implementing a library microcomputer laboratory. The next five chapters constitute the case history portion, one library per chapter. Each one describes how installation of the microcomputer work area was approached and handled in one academic library. Although the descriptions differ to some degree, they all cover most of the crucial issues of planning, policy, site selection and preparation, staffing, funding, hardware, software, and changes and modifications in succeeding years. Photographs, which were provided in four of the

chapters, are useful adjuncts to the text.

Each chapter also presents at least one additional illustrative item: the guidelines for group use, plus a promotional flier from the University of Wisconsin-Parkside, the floor plan of the Fraser Library at State University of New York, Geneseo, a diagram of the microcomputer laboratory at Raymond Walters College, University of Cincinnati, the use survey form used at California Polytechnic State University in San Luis Obispo, CA, and a sample page from the Rhode Island College microcomputer center newsletter *Software Resources*.

The sixth chapter presents, from a library manager's point of view, an overview of the "issues and areas" involved in the implementation of a library microcomputer service. The author of this chapter emphasizes that no one guide could possibly serve all academic libraries; each library must determine for itself what the scope, objectives, implementation, funding sources, etc. will be. It is imperative to begin with an assessment of the "culture" of the institution, including its type, size, mission, strength of its central authority, wealth and sources of wealth. Also, the importance of the relationships between the library and other campus units, particularly the campus computer center, as well as links to academic departments and faculty, is noted. In general, the main issues and accompanying questions which must be addressed are raised but not answered.

The last two chapters are comprised, respectively, of an annotated bibliography and a directory of library installations. Since it is arranged by state and includes the name of a contact person, the directory should be helpful for those wishing to consult with someone at a nearby institution. Finally, the book's index seems adequate but could easily have been expanded using the same allotted space.

Although other books have been written on the subject, most of which are included in this book's own bibliography, this volume is a useful and timely addition to the literature. It should have particular value for those about to participate in their library's installation of a microcomputer center.

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The Culture and Control of Expertise: Toward a Sociological Understanding of Librarianship, by Michael F. Winter. Westport, CT.: Greenwood Press, 1988. 154 pp. ISBN 0–313–25537–7. $37.95.

As intended, this book may "change the way librarians think about their work, and indirectly the way they work," (p. xiii)—if they can be coaxed to read it. The book's subject and method are both theoretical and interpretive and the material is presented in wordy, esoteric style.

Michael Winter's subject, the nature and development of librarianship as a profession/occupation is quite interesting. The first chapter, "The Rise of the Modern Professions," describes the development of the contemporary professions from highly organized groups including the professional school, the occupation itself—including many diverse professional associations, and the organization with which the work is done i.e. university, hospital, corporation, etc. The older idea of the professional working independently of complex organizations has changed drastically.

The following four chapters are sociological discussions including the trait theory of professions, the functionalist view of the profession, the occupational control approach, and the wider social context involved in controlling work. The second chapter, in discussing the trait theory, contains a good definition of a professional. "A professional is a person who can solve many different kinds of client-related problems because he or she can entertain solutions intellectually, without needing to subject each one to trial and error." (page 27). Also discussed in the remaining chapters is the occupation/profession debate and a current study of the profession. The final chapter suggests case research on librarianship as an occupation.

Having read the entire work, this reader admits defeat in trying to understand it. The assessment of this work is that it is very difficult to understand many of the ideas presented either because of limited exposure to sociological theory, or lack of interest in it, or both. My recommendation is: if your interests lie in this area, you may find The *Culture and Control of Expertise* extremely informative and inspiring. No one will dispute the need for research in the area of librarianship as an occupation, and any work that provokes such study is noteworthy.

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Librarianship: A Third World Perspective, by Rosario Gassol de Horowitz. Westport, CT.: Greenwood Press, 1988. 140 pp. ISBN 0-313-25507-5. $37.95.

Professor Horowitz, of the Simon Bolivar University, Caracas, Venezuela, states developing countries have begun to understand the need to consider librarianship as an important part of their development. A nation informed about its society can help its country to grow. Unfortunately, library science in Latin America does not meet the different needs of its patrons. The problems of illiteracy, a nondemocratic government, and poor economic and social conditions remain. The librarians in Latin America have been trained in unsatisfactory facilities with a shortage of experienced professors and few text books and materials written in Spanish.

Another reason why Latin American countries are not developed is that library science in Latin America reflects the ideology of industrialized countries. Information technology and library education programs are based upon the culture of developed countries and not underdeveloped nations. Additional weaknesses are inconsistencies in the definitions of terms and the role of the librarian.

After analyzing several approaches to information research, which theory of communication is applicable to librarians, and various definitions of "knowledge" from Brazilian educator Paulo Freire and Spanish philosopher Ortega y Gasset, and other professionals, the author concludes librarianship "has been unable to develop strong theoretical foundations based on an understanding of human nature and human thought processes...This is the most urgent task confronting libraianship..."(pp. 120-21).

Librarianship: A Third World Perspective is recommended to all librarians who want libarianship to become a stronger profession internationally.

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Gary Indiana.

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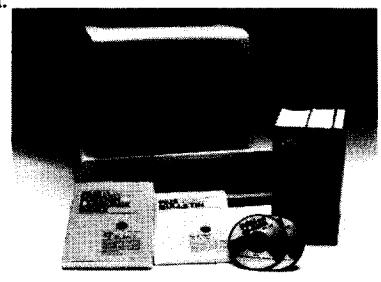

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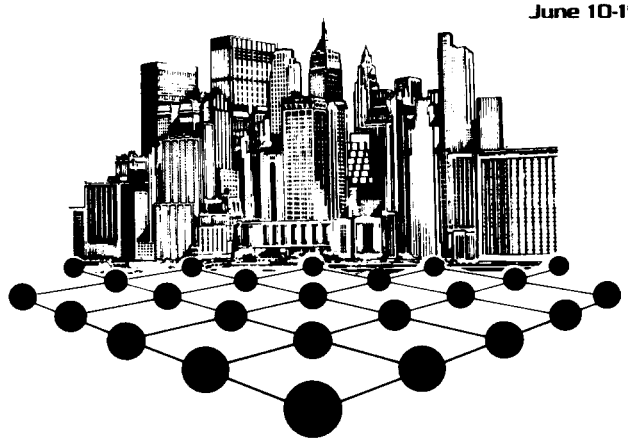

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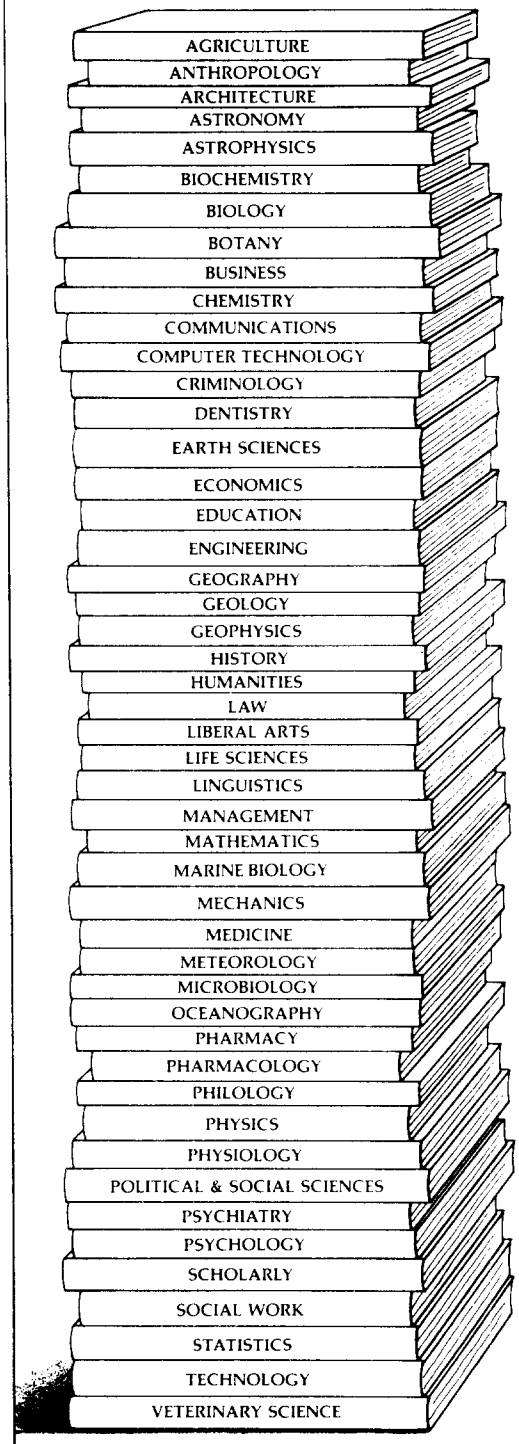

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Contributions are solicited from both members and nonmembers. Papers are accepted with the understanding that they have not been published elsewhere. *Special Libraries* employs a reviewing procedure. When reviewers' comments have been received, authors will be notified of acceptance, rejection, or need for revision of their manuscripts. The review procedure will usually require a minimum of eight weeks.

Types of Contributions. Three types of original contributions are considered for publication: full-length articles, brief reports, and letters to the editor. New monographs and significant report publications relating specifically to library and information science are considered for critical review. Annotations of the periodical literature as well as annotations of new monographs and reports are published—especially those with particular pertinence to special libraries and information centers. Articles of special relevance may be reprinted occasionally from other publications.

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Smith, John and Virginia Dare. "Special Librarianship in Action." *Special Libraries 59* (no. 10): 1241–1243 (Dec 1968).
Smith, John J. "The Library of Tomorrow." In *Proceedings of the 34th Session, International Libraries Institute, city, year.* 2v. city, press, year published.
Featherly, W. "Steps in Preparing a Metrification Program in a Company." ASME Paper 72-DE-12 presented at the Design Engineering Conference and Show, Chicago, Ill., May 8–11, 1972.

References to books should be in the order: authors, title, city, publisher, year, pagination.

Brown, Abel. *Information at Work.* New York, Abracadabra Press, 1909. 248p.
Andrei, M. et al. *The History of Athens.* The History of Ancient Greece, 10v. New York, Harwood Press, 1850.

Samples of references to other types of publications follow.

Chisholm. L. J. / "Units of Weights and Measure." National Bureau of Standards. Misc. Publ. 286. C13.10:286. 1967.
Whitney, Eli (to Assignee), U.S. patent number (date).

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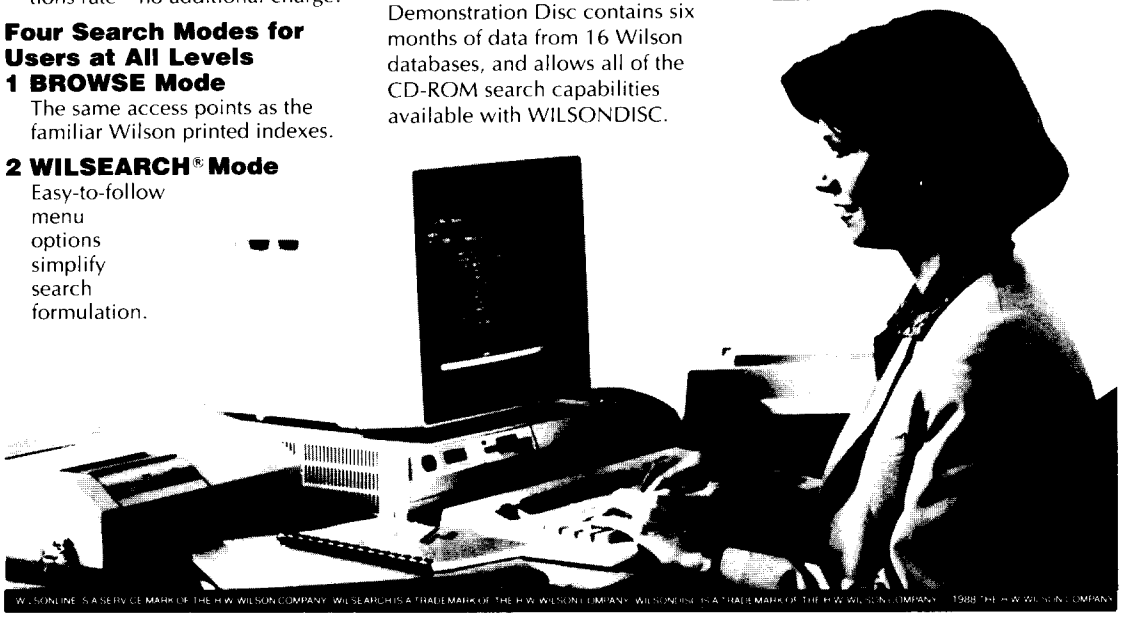

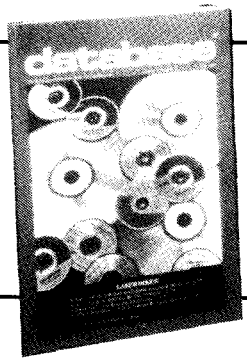

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