Library Networks, 1986-87

Libraries in Partnership

by Susan K. Martin

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List of Acronyms

AAU	Association of American Universities
ACS	American Chemical Society
AFLI	Association For Library Information
AI	Authorities Implementation
ALA	American Library Association
AMC	Archives and Manuscripts Control project
ARL	Association of Research Libraries
BALLOTS	Bibliographic Automation of Large Libraries using an Online Timesharing System
BCR	Bibliographic Center for Research
BLIS	Biblio-Techniques Library Information System
BNB	British National Bibliography
BRC	Bibliographic Resource Center (AMIGOS)
BRS	Bibliographic Retrieval Services
BSDP	Bibliographic Services Development Program
CAPCON	Capitol Consortium
CARL	Colorado Alliance of Research Libraries
CCLC	Cooperative College Library Center
CCLN	Council of Computerized Library Networks
CLASS	Cooperative Library Agency for Systems and Services
CLR	Council on Library Resources
CLSD	Collaborative Library Systems Development project
COM	Computer Output Microform
COMARC	Cooperative MARC
CONSER	Conversion of Serials project
CRL	Center for Research Libraries
DRA	Data Research Associates
DRANET	Data Research Associates Network
ESTC	Eighteenth Century Short Title Catalog
FAUL	Five Associated University Libraries
FEDLINK	Federal Library Network
FLECC	Federal Library Committee Experiment in Cooperative Cataloging
HILC	Hampshire Interuniversity Library Center
HYCCUP	Harvard-Yale-Columbia Computer Utilization Project

IAC	Information Access Corp.
IAIMS	Integrated Academic Information Management System
ILL	Interlibrary Lending
ILLINET	Illinois Library Network
ILS	Integrated Library System
InCoLSA	Indiana Cooperative Library Services Authority
IRLA	Independent Research Libraries Association
ISBD	International Standard Bibliographic Description
ISBN	International Standard Book Number
ISI	Institute for Scientific Information
ISO	International Standards Organization
ISSN	International Standard Serial Number
ITOL	International Thomson Organisation, Ltd.
LC	Library of Congress
LCS	Library Circulation System
LSCA	Library Services and Construction Act
LSP	Linked Systems Project
LSSI	Library Systems and Services, Inc.
MALCAP	Maryland Academic Libraries Center for Automated Processing
MARC	Machine-Readable Cataloging
MIDLNET	Midwest Regional Library Network
MILC	Midwestern Interlibrary Consortium
MINITEX	Minnesota Interlibrary Telecommunications Exchange
MLC	Michigan Library Consortium
MLNC	Missouri Library Network Corp.
MULS	Minnesota Union List of Serials
NAC	Network Advisory Committee
NACO	Name Authorities Cooperative project
NCLIS	National Commission on Libraries and Information Science
NEDL	New England Deposit Library
NELINET	New England Library and Information Network
NEUCAT	Nebraska Union Catalog
NLM	National Library of Medicine
NOTIS	Northwestern Online Technical Information System
NPC	National Periodicals Center
NYPL	New York Public Library
OCA	Ohio College Association
OCLC	Online Computer Library Center
PACNET	Pacific Network of OCLC
PALINET	Philadelphia Area Library Network
PRLC	Pittsburgh Regional Library Center
RECON	Retrospective Conversion
RLAC	Research Libraries Advisory Council (OCLC)
RLG	Research Libraries Group
RLIN	Research Libraries Information Network
SDI	Selective Dissemination of Information

SMUG	SOLINET Microcomputer Users Group
SNI	Standard Network Interconnection
SOLINET	Southeastern Library Network
SPIRES	Stanford Public Information Retrieval System
SUNY	State University of New York
TEDS	Training and Education Data Service
TOMUS	The Online Multiple User System
TRLN	Triangle Library Network
VTLS	Virginia Tech Library System
WHCLIS	White House Conference on Libraries and Information Service

Foreword

Dr. Susan K. Martin's first edition of *Library Networks* (1976-77) was the first full-length book on a subject that had dominated the development of librarianship for nearly a decade, but about which there was a great lack of authoritative and timely information. Her book not only filled the need for comprehensive factual information about networks and networking, it also gave the reader a broad perspective of the network scene and a first interpretation of the complex forces shaping it. The book was an immediate success and became the standard work in the field. A second updated, revised and expanded edition was published in 1979, and a third edition followed in 1982.

This edition, *Library Networks, 1986-87,* is not merely another revision and update of the earlier books; it is a completely new publication with a much broader scope and a new organization and structure. And it is still the only available monograph on library networks. The evolution of Dr. Martin's network series parallels and reflects the evolution of the library and network environment that it describes. When the first three editions appeared networks were in their formative period, and they were being formed by librarians. The books were oriented toward librarians who were either current or potential members of networks or who were involved in their formation or governance.

The formative stage is over now, and the networks have established themselves as strong, independent players in the library world. OCLC has emerged as a powerful and aggressive competitor. UTLAS, which was recently bought by a wealthy multinational corporation, is flexing its financial muscle and preparing to invade OCLC's markets. RLG continues to expand its niche as a cooperative research libraries network. SOLINET, AMIGOS, CLASS and other regional and statewide networks are increasing capabilities and are increasing in importance.

Library Networks, 1986-87 reflects the growing competitiveness and commercialization of networking that has taken place since the publication of

the last edition. This new edition views the network scene from a more mature and broader perspective. The book is no longer oriented solely toward librarians, but to anyone who has an interest in or a need to know and understand the new forces that are at work creating a network of competitive networks. Many of the issues that are discussed at length in this new work were hardly mentioned in the earlier editions because they had not yet emerged as issues. Copyright, ownership of data, contract negotiations between OCLC and its broker networks, competition among networks and vendors, the Linked Systems Project, the roles of other players such as the Library of Congress, the Council on Library Resources, the National Commission on Libraries and Information Science and the Center for Research Libraries—these are but a sampling of the complex and frequently highly charged issues that Dr. Martin treats with clarity and courage in this outstanding volume.

Richard De Gennaro
University of Pennsylvania
March 1986

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Issues in Networking

The director of one of the larger library networks in the United States recently remarked that "cooperation is an unnatural act." This comment is notable in light of the extensive cooperative activities that have developed successfully among libraries during the past century. Melvil Dewey's insistence that each book should be cataloged only once, with copy made available for all libraries to use, and the fact that one century later thousands of libraries in North America are using computer technologies to share systems and resources, indicates that cooperation is not only successful but is enthusiastically embraced by librarians. Why would it be termed "an unnatural act?"

Cooperation and networking are endorsed by all. Arguing with the benefits derived from sharing resources with other institutions is impossible. However, local loyalties and motivations intervene; what is good for the group is not necessarily advantageous for the individual library. To increase the complexity of the issues involved, the people who administer the libraries also serve on the governing boards of networks and consortia. It is not at all unusual for a network board of directors to meet to resolve a network problem only to return home to realize that the solution has serious negative implications for the library.

Thus, the various participants in the network environment combine interests and capabilities to create a framework for networking that is at once viable and satisfactory for the solution of major issues in the library world, but also *not* natural in terms of the daily operation of each library as it endeavors to meet its clients' needs. Networking, then, can be termed an unnatural act. It requires much conscious effort and goodwill to create a networking environment that provides the maximum possible benefit to the largest number of participants.

This book describes the cooperative activities of the U.S. library world of the 1980s, focusing particularly on cooperation that uses automation as the major tool for providing the services of the cooperative. In fact, libraries have cooperated for decades, but it is only with the advent of information

technologies that cooperation has: (1) been expanded to support almost every area within the library, and (2) become more threatening to the autonomy of the networking libraries. The significant organizations and technologies are analyzed, with an effort to show how the interplay of local versus centralized interests affects the nature and growth of networks.

DEFINITION OF NETWORKS

In modern usage, a network can be defined as a group of individuals or organizations that are interconnected to form a system to accomplish some specified goal. This linkage must include a communications mechanism, and many networks exist for the express purpose of facilitating certain types of communication among their members. In the library world, institutions have traditionally formed networks primarily to achieve better sharing of resources–resources consisting of bibliographic information and of collections–and better service to patrons. To reiterate, the particular focus of this book is online computerized networks, those using computers and linking members to the computer resource by means of some kind of telecommunications connection, especially networks in the United States.

NETWORK CHARACTERISTICS

The successful online network has several characteristics worthy of mention: (1) it requires a significant level of financial and organizational commitment from participants; (2) it is based on agreement within the group of participants that specific tasks should be performed and specific guidelines adhered to; and (3) it provides an immediate facility for access through computer and communications technologies to databases, which may originate in either the public or the private sector of the information community. Because involvement entails a sizable financial commitment, representing both direct and indirect costs, libraries that are network members must actively use the network's service in order to derive benefits that correspond to their level of expenditure. Changes in internal organizational structure, while not common, happen in networking libraries; these accommodations are made in order to maximize the usefulness of the network within the member library. Even more important, during the past 15 years consensus among network members regarding the goals and objectives of the network has been achieved. Libraries have been faced with the question of conforming to a group decision. A library that does not conform risks either grossly uneconomical use of the network or a judgment by peer institutions that the library is engaged in poor bibliographic, collection development or public service practices.

The early years of online networking, in the first part of the 1970s, saw librarians with a deep commitment to a network organization as well as to their own libraries. As more libraries now become involved in networks, network systems and organizations are increasingly viewed as *vendors* that are vying for the library's business rather than as *partners* in an effort to reach a common goal. Librarians are attempting to become increasingly wise to the ways of the business world and often issue requests for proposal (RFPs) before signing any contract with a network. The businesslike nature of this transaction is undoubtedly useful for both parties, but it implies that the relationship may not necessarily be permanent; if another vendor offers better services at less cost, the library may change networks or vendors. For example, newer technologies provide a substantially stronger alternative to networks in the form of optical disc technologies offered by vendors.

The issues and problems posed by these and other characteristics of online library networks are only slightly more than a decade old and changing rapidly. They are symptomatic of a dynamic field characterized by new technologies as well as the vulnerability of libraries to society's economic trends. Simultaneously, the rapidity of change has resulted in a body of network literature consisting primarily of news releases; any substantive treatment is likely to be at least partially obsolete upon publication.

NETWORKS: SCOPE AND POTENTIAL

Every function in the operation of a library can be assisted by automated procedures. Automation in individual libraries has affected acquisitions, cataloging, serials control, fiscal control, circulation, reference, collection development, communications and management reporting. In network organizations, the initial focus was on shared cataloging, followed later by interlibrary lending (ILL), serials check-in and acquisitions. The Research Libraries Group (RLG) has shown that a network approach is an economical way to deal with esoteric applications such as the Oriental languages character sets, the Eighteenth Century Short Title Catalog (ESTC), and control of archives and manuscripts. The Online Computer Library Center (OCLC, originally the Ohio College Library Center), is by virtue of its size able to support a major research department to investigate solutions to information delivery problems–a task that would be inconceivable for any single library.

It has always been unclear whether heavily local applications such as acquisitions or serials control should in fact be operated on a central network system. Now, in the mid- and late 1980s librarians and network administrators alike realize the inevitability of distributed systems, as more libraries purchase local integrated systems for access by staff and users. Obviously, the need for a centralized database will continue, both to retrieve bibliographic

records and to allow the communication that is required for ILL. However, there may be less need for the enormous computer systems built up over the years by organizations such as OCLC, RLG and UTLAS (originally the University of Toronto Library Automation System). These networks and their boards of directors all face the serious issue of divesting some major part of their technological heritage while at the same time continuing to serve a real need. The economic implications of a shift from centralized to distributed systems can be devastating for the organizations if not planned for carefully and accurately.

NETWORK ISSUES

Single-Type and Multitype Networks

A large number of library cooperatives and networks began as single-type networks; that is, they were designed to facilitate cooperation and communication among libraries serving the same general purpose. Cooperation among public libraries within a geographic region or state has long been the norm rather than the exception, perhaps because of a strong economic link with the state library agency. Public libraries serve the same types of patrons and are rarely expected to provide research facilities. Almost always, they are funded with public monies. The sources and constraints of service are likely to be comparable from one public library to another. The rationale of cooperation includes an assumption of commonly shared problems, with solutions based on ILL, reciprocal borrowing privileges and other techniques designed to make each library's budget stretch further.

Groups of research libraries have also created single-type networks. Two large and old networks are the Association of Research Libraries (ARL) and the Center for Research Libraries (CRL) (which began as the Midwestern Inter-Library Consortium, or MILC). Like public libraries, research libraries tend to maintain common goals. Unlike public libraries, research libraries are funded privately, publicly or both. Also unlike public libraries, most research libraries have a defined community to serve, without which they would not exist.

Until expensive computer systems became involved, single-type networks predominated. The statewide network, dependent on public funding, is the major exception. With the emergence of OCLC, however, single-type networks gradually became multitype; the overhead of a large automated system made it desirable for many libraries of all kinds to share the system and the network to provide economies of scale.

Several clearly identifiable and unresolved issues arose:

1. A multitype network is likely to have many small public or college libraries with small budgets and a few large research libraries with

large budgets and resource collections. How should the governance structure reflect the membership? By one library/one vote? In proportion to library budget? In proportion to contribution to the network, however "contribution" is defined?

2. How can one accommodate within one computer database the less complex bibliographic needs of the smaller library as well as the more complicated or arcane requirements of the larger and older collection?
3. As library holdings are made known, more of the smaller libraries are being called upon for ILL. Flattered at first, the smaller libraries, which often catalog books more rapidly than the larger ones do, are realizing that ILL is a costly business and one that they may not be prepared to fund.
4. By definition, a multitype network is less able than a single-type network to address the specific concerns of a single group of libraries because it must heed the needs of all. As a result, it may satisfy no one. More likely, the single-type library concerns may be delegated to other, even newer organizations while the networks provide service for their customers by allowing computerized access to bibliographic data.

Ownership of Data

In a large computer system such as OCLC or the Research Libraries Information Network (RLIN) of RLG, much of the data comes from the Library of Congress (LC) and is in the public domain. Gradually, more and more information is contributed by the using libraries. A question that has increased in importance in recent years is: who owns the data? Is it the bibliographic utility, the regional network or the individual contributing library?

In 1983, after difficulty with establishing the concept of charging third parties for use of bibliographic data, OCLC applied for copyright of its database (see Chapter 4). Although the library profession voiced considerable concern, copyright was granted. This contrasts with the Western Library Network (WLN, originally the Washington Library Network) and RLG, which have declared that their data are available for exchange, and even to the now-commercial UTLAS, whose data are copyrighted but available to nonmember institutions.

State and Regional Networks

The networks that have been formed to take advantage of computerized services are not uniform in scope or funding, nor have they ever been so. The

most significant distinction is between publicly and privately funded networks. Publicly funded networks are likely to be statewide and have often been supported with Library Services and Construction Act (LSCA) funds through the appropriate state library agency or an arm thereof. Statewide networks, such as the Indiana Cooperative Library Services Authority (InCoLSA), Minnesota Interlibrary Telecommunications Exchange (MINITEX) and Illinois Library Network (ILLINET), are multitype (see Chapter 6). Private institutions are usually included if they wish to be; often the network includes by definition every library in the state, although it may not support every library actively. In many cases, the state heavily subsidizes the network, creating an artificial dependence on the network by the libraries. That is, whenever a library is paying full cost for network services, it has the option of pulling out and looking for more cost-effective ways of operating. When the network is subsidized, the library cannot expect an increased budget for alternative network services if it ceases to be a member of the network. Indeed, considerable political forces constrain the library from being a member of anything but its own state network.

Regional or multistate networks are usually privately funded by their own members. Examples are the Philadelphia Area Library Network (PALINET), AMIGOS, Bibliographic Center for Research (BCR) and Southeastern Library Network (SOLINET). The constraints of a statewide network do not apply in these cases; indeed, some geographical boundaries are so blurred that networks have competed with each other for the membership of specific libraries. For example, BCR and AMIGOS have overlapping territories, and unusual geographic patterns exist in almost every regional network.

Nothing restricts a library from joining more than one network. Excluding economic reasons, any library may belong to as many networks as there are services. This does not, in fact, occur, but many libraries are members of more than one network, taking advantage of the most economical or highest quality network. The federal libraries, which have their own network, called FEDLINK (Federal Library Network), are scattered throughout the country and may very well belong to the regional networks in their areas as well. RLG libraries are often members of their regional or state networks even though they no longer use OCLC services.

The Question of a National Network

The quantity of material from which librarians must select for local collections is staggering. Each year, over 40,000 trade publications are published in the United States alone. In addition, serials, government documents, foreign publications and nonprint materials must be considered by the librarian who is selecting for a collection. In the past, libraries have attempted

to serve their users from their own collections as much as possible, using ILL as a supplement. Decreasing purchasing power and increasing service goals have, in the past 20 years, caused most libraries to view a collection as comprising not only the materials owned by the individual library, but also the material owned by other institutions. ILL, reciprocal borrowing privileges, central collections such as CRL and USBE (formerly Universal Serials and Book Exchange) and commercial sources all join to form the bases of these extended libraries.

Since the development of computer-readable bibliographic files and formats, advocates of a national bibliographic network have suggested that to create the extended library, libraries of all kinds and sizes need help in the form of union catalogs giving information about each other's holdings. The philosophy underlying this view is that we should be moving toward an information-handling system that will allow any user, from any library or from a home terminal, to access not only his or her home library, but the holdings of libraries throughout the country as well. Access to bibliographic data must then be followed by access to the document itself, calling for the development of a sophisticated nationwide document delivery system.

For years, the library profession has tried to establish a national network. As efforts increased, it became clear that the loss of autonomy suggested by such a structure, together with the perceived bureaucracy, made a national network less desirable than originally thought. Librarians began to question whether they really needed to know everything about collections nationwide—and whether they could afford this knowledge. Thus, bibliographic standards continue to be promulgated and used, and several nationwide programs exist, for example, for retrospective conversion (recon). But a physically centralized national network is a fading dream and is being replaced by ideas for connecting networks and for local systems to provide access to networks throughout the nation.

Had the United States, or North America, started with strong centralized national systems, the national bibliographic system would certainly have been established. But this scenario was not to occur. Although LC is a forceful leader in significant facets of the library world in the United States, it is simply not the *official* national library; the National Library of Canada, while officially a national library, is a young organization which has had to follow in the footsteps of several major university libraries in Canada, and also has not had the power to create a true national network in that country.

Given these circumstances, as well as the remarkable entrepreneurial spirit shown by the existing online networks, it is unlikely that there will be a nation- or continent-wide network as a physical structure in the foreseeable future. Instead, the efforts to link systems, as with the Linked Systems Project (LSP), or to provide technological gateways from one system to another will prove to be far more suitable for the sociological and economic realities of this continent. Technically, there is no reason why the several