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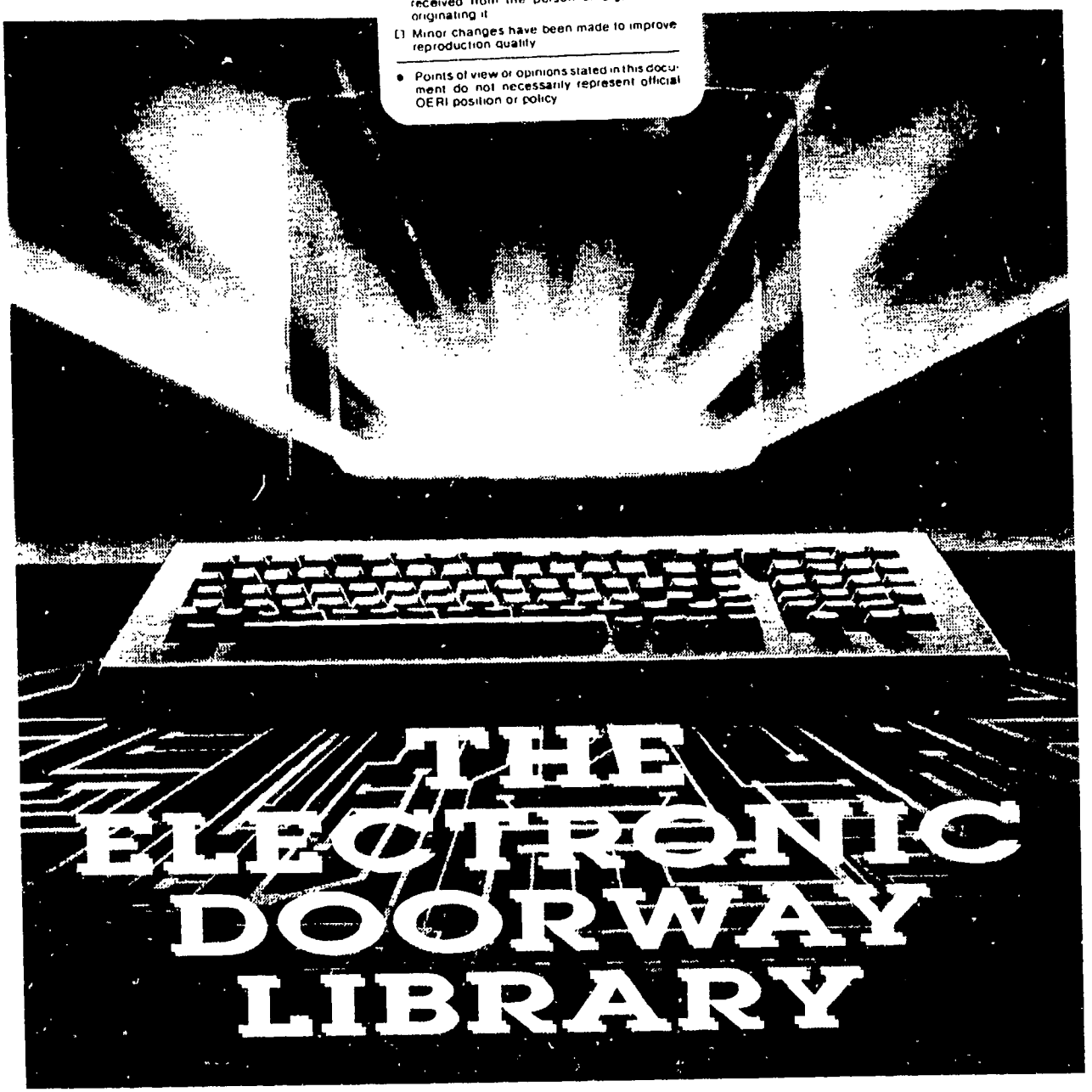
ABSTRACT

This document, like its predecessor, will serve as a blueprint for and a means of communication about statewide library automation. The original plan introduced the concept of the electronic doorway library as a way to explain the changes occurring in the delivery of library services. Through 14 assumptions, 32 recommendations, and implementation guidelines, the new plan further develops this concept as the mechanism by which libraries in New York will be best able to serve their users in the developing networked world. The electronic doorway concept captures the idea of what libraries in New York are becoming or should become. Appendix A presents the electronic doorway implementation guidelines, while appendixes B, C, D, and E present an application form, a glossary, standards and protocols, and a list of committee members. (SLD)



MEETING THE INFORMATION NEEDS OF THE PEOPLE OF NEW YORK STATE

The University of the State of New York ▪ The State Education Department
New York State Library ▪ Division of Library Development ▪ Albany, New York 12230

THE ELECTRONIC DOORWAY LIBRARY

MEETING THE INFORMATION NEEDS OF THE PEOPLE OF NEW YORK STATE

Prepared by the
Statewide Library Automation Plan Biennial Review Committee

This document is the second Statewide Automation Plan for Libraries. It succeeds the combination of *Libraries & Technology: A Strategic Plan for the Use of Advanced Technologies for Library Resource Sharing in New York State* (1987) and *Technology & Access: The Electronic Doorway Library* (1989).

The University of the State of New York
The State Education Department
Division of Library Development
Cultural Education Center
Albany, New York 12230
1993

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INTRODUCTION

The Electronic Doorway Library: Meeting the Information Needs of the People of New York State is the second edition of the Statewide Automation Plan for Libraries. The first edition was a two-part plan. *Libraries & Technology: A Strategic Plan for the Use of Advanced Technologies for Library Resource Sharing in New York State* was published in 1987. *Technology & Access: The Electronic Doorway Library* was issued in 1989 as the operational part of the plan.

The initial Statewide Library Automation Plan recommended that a committee be convened biennially " . . . to review administration and technological progress on the statewide automation plan and recommend updating and revision." Roberta Cade, Director of Library Development in the New York State Library, appointed a Biennial Review Committee in August 1992. The 23-member Committee was broadly representative of all types and sizes of libraries and also included people from related fields. In developing the second edition of the plan, the Committee met nine times and obtained input from the field at five regional hearings.

Like its predecessor, the new Statewide Automation Plan will serve as a blueprint for and a means of communication about statewide library automation. Statewide library automation is substantially advanced through the Regional Bibliographic Data Bases and Interlibrary Resources Sharing Program and the Library Services and Construction Act. Funding from these programs has facilitated the evolution of automation in New York State libraries from being limited and disparate to being more widespread and part of a coordinated statewide effort to make electronic services routinely available. However, much remains to be done.

The original plan introduced the concept of the electronic doorway library as a way to explain this change in the delivery of library services. By means of 14 assumptions, 32 recommendations, and implementation guidelines, the new plan further develops this concept as the mechanism by which libraries in New York will be best able to serve their users in the developing networked world of today and tomorrow. The electronic doorway library concept captures the essence of what libraries in the State are becoming or should become. The goal is for all libraries in New York State to become electronic doorway libraries.

STATEMENT OF PURPOSE

The library situation today is very different from what could have been envisioned even a few years ago. Not only is the technological and telecommunications world changing at an unprecedented rate, the fiscal crisis in the country and in New York State is increasingly influential in every sphere of library service. The financial condition of the State has significantly affected the ability of the library systems that form the Statewide Library Network to promote increased resource sharing and assist member libraries to become electronic doorway libraries. The future of library and library system services and programs, including technology and telecommunications, is at stake.

Individuals residing in New York State cannot live, learn, and work without information. They need to be able to think critically and problem-solve to survive in all aspects of life. These skills are dependent upon access to and the productive use of information. While libraries of the future may be configured in dramatically different ways, the traditional roles that librarians and libraries have played will continue to be needed and even strengthened. The organizing, interpreting, and teaching skills of librarians and their proven commitment to equality of access will be critical to ensuring each individual's ability to effectively use information in an era of what might otherwise become electronic chaos.

Librarians will continue to collect, organize, and make available the intellectual and artistic record of the human race. They will continue to be educators and mediators between the creators and consumers of information. Librarians will be challenged with developing and implementing standards for organizing, accessing, and authenticating information in the electronic networked environment and with creating the sophisticated tools needed to navigate electronic networks. They will select and teach the use of reliable electronic information sources to meet the needs of individuals.

In recognition of the wide diversity of the people who are served by over 7,000 libraries in New York State, the purpose of this report is twofold: 1.) to support and guide initial and advanced electronic doorway library efforts; and 2.) to envision an immediate future of evolving and more sophisticated services.

This document, as a new edition of the Statewide Automation Plan for Libraries, is intended to provide assistance in the continuing development of statewide library automation over the next three years. It outlines how individual libraries, library systems, and the State must share a vision for serving people in a networked environment in ways that are compatible with local and regional initiatives, flexibility, and ingenuity.

ASSUMPTIONS

Today's information society and information-based economy require a major reexamination of library mission and a refocusing of program. Easy and inexpensive access to computer and telecommunications technology is available from homes, workplaces, and other locations. Electronic doorway libraries can offer equality of access to a wide variety of users and play a vital role in the 21st century. The Committee assumes that:

- With the proliferation of microcomputers and networks, the information environment is being radically transformed.
- An increasingly computer literate population will demand access to electronic information.
- Without libraries, a significant segment of the population will continue to be unable to access electronic information sources due to financial, physical, educational, geographical, and/or other constraints.
- Although hard copy will remain a significant source of information for the foreseeable future, other information formats (multimedia, video, audio, electronic, tactile, etc.) will also become primary sources of information.
- Electronic access to information will become increasingly important. The primary means of locating information will eventually shift from print to electronic.
- There will be enormous growth in the volume of electronic information and an increase in information available only in electronic form. An increase in competition among information providers will reduce dramatically the unit cost of electronic information and the cost of delivery to individuals.
- A growing number of information providers will be directly accessible by users in the electronic marketplace.
- Librarians are well-suited to be the important and necessary link between information providers and consumers because of their skills in selecting, organizing, evaluating, and preserving information and in educating people in the most effective use of libraries.
- Changes and advances in the information industry will continue to occur at an accelerating rate.
- Community networks, such as Free-Nets, are emerging nationwide as mediums for public communication among individuals and groups via electronic mail. Libraries need to be sensitive to the development of community networks and the opportunities they offer for library services.
- All libraries will participate in State-supported automation and resource sharing programs and contribute records and holdings to system/regional/statewide electronic databases.
- As New York State establishes and codifies its telecommunications policies, the State's networks will interact at increasingly sophisticated levels and facilitate access to resources on those networks. As part of this development, a growing number of State agency databases will become available on these networks.
- For many libraries the most cost-effective regional union catalogs are in CD-ROM form. It is assumed that these catalogs will continue to play a role in identifying and locating library materials in New York State, and that their value will grow as they become increasingly accessible via networks.
- Funding available for libraries and the services they provide for people will continue to be constrained.

I. THE ELECTRONIC DOORWAY LIBRARY: THE LIBRARY'S ROLE TODAY AND TOMORROW

Every individual in New York State will have access to electronic doorway library services to meet his/her information needs.

> An electronic doorway library will use computer and telecommunications technology, a full range of library resources, and the services of skilled librarians to meet the library and information needs of business, government, and people of all ages, backgrounds, interests, and abilities **extending services into people's homes, workplaces, and other locations, going beyond the library's walls** to obtain information and resources, **facilitating access** by people with disabilities, and **providing powerful new ways of assembling, evaluating, and using information.**

A. The Vision

People in an information society cannot live, learn, and work without information. The primary role of libraries is to provide information services to people. Libraries with electronic networking capacity have new opportunities to meet people's information needs. That electronic networking capacity is now available in almost every sector of American enterprise — from The White House where the staff have access to the most sophisticated technology to the apartment down the street where a family uses an information service that came with its new microcomputer.

This "universal" networking technology will create expanded roles for librarians who will organize data, develop navigational tools, and guide their constituents through the expanding world of networked information. Even many of those who have access to such technology need the help of information professionals — librarians — in using the services available on the network.

The vision is that every individual in New York State should have access to electronic doorway library services. (Recommendation B-1)

B. What Is an Electronic Doorway Library?

An electronic doorway library uses computer and telecommunications technology to assist its users by means of information retrieval and resource sharing. It is a library of any type, size, or location.

A basic level electronic doorway library is described in *Library Systems Toward the 21st Century* as one which:

- **Has converted or is actively converting its catalog records into machine-readable form;**
- **Allows for electronic access either online or offline to its holdings from both inside and outside the library;**
- **Provides electronic access to at least one other database located outside of the library;**
- **Adheres to the database development guidelines established in *Libraries & Technology* and *Technology & Access*;**
- **Is equipped with a microcomputer or terminal, modem, and telephone line;**
- **Meets the basic standards for its type of library;**
- **Is a member of a library system;**
- **Has a board or administration, director, and staff committed to using technology to provide quality library service;**
- **Participates in State-supported automation and resource sharing programs which are currently operating and being developed; and**
- **Works with its library system in making full use of present and future technologies.**

A basic level electronic doorway library must provide electronic access to its holdings for its own users and for other libraries statewide. As an electronic doorway library moves beyond the basic level, it may also make its holdings accessible for users in other libraries statewide as well as for users from homes, workplaces, and/or other locations.

The electronic doorway library that is beyond the basic level may also provide an almost infinite number of other services for users. This level of electronic doorway library will be connected to the Internet. With full Internet access, the services provided can be both local and global in scope.

The Internet now provides connections to hundreds of online catalogs throughout the world. With the software technology of windowing, the librarian can conduct multiple concurrent online sessions allowing access to several systems on the same screen at the same time.

A beyond-basic (advanced) level electronic doorway library is better able to address the needs of disenfranchised individuals — socially and economically disadvantaged and physically challenged. It will meet a changing continuum of people's needs through services which enable and empower them to thrive in the complex, electronic information environment. (Recommendation B-1)

Both librarians and users of an advanced electronic doorway library will routinely access and benefit from the following services among many others:

- Network navigational systems such as Gopher, WAIS, Archie, Veronica, and World Wide Web;
- Databases on a variety of computer systems via a single user interface based upon the Z39.50 standard for information retrieval;
- Full text reference sources such as encyclopedias, dictionaries, and direct news wire feeds;
- Electronic mail connections to local, State, and Federal agencies;
- Data export to personal electronic mail accounts anywhere on the Internet;
- Full text and statistical data from local, State, Federal, and international governments;
- Bibliographic data in a variety of formats compatible with personal bibliographic database software;
- Full text journals which will increasingly include graphical information;
- Electronic publication of documents; and
- Community networks and online networked kiosks.

Scenarios/Examples of Electronic Doorway Library Services to Assist Users

- **American students participate in a collaborative science project with students in Chile using electronic services at the school library.**
- **A patron plans a trip to India using U.S. State Department travelers' advisories for that country provided electronically by the public library.**
- **A researcher needing journal citations and articles beyond those held locally uses a document delivery service at an academic library.**
- **A patient in New York receives life-saving treatment when a hospital library in California transmits data on experimental surgery.**
- **An executive prepares a report for a board meeting incorporating a printout of the latest polymer research obtained from the corporate library.**
- **Children attending a summer reading program at a rural public library share their enthusiasm and ideas electronically with children at an inner-city branch library**

Today many libraries have already gone beyond, perhaps well beyond, the basic electronic doorway library requirements. But there are more libraries that have a long way to go before they will function as electronic doorway libraries. Library systems will play an important role in helping their member libraries provide electronic doorway library services. Systems will assist member libraries through education, information dissemination, facilitation of initiatives such as shared integrated systems, and development of local area networks, gateways, and navigational tools. Library systems will help libraries to understand and meet pertinent technical standards by being resource centers that provide access, education, consulting, and troubleshooting. (Recommendations A-1, C-1)

C. Why Should Libraries Provide Electronic Doorway Library Services for People?

Today, most libraries are print- and building-centered depositories using traditional methods to access information. In an increasingly networked society, these libraries will want to meet more fully the electronic information needs of their communities. In order to meet those needs, libraries will acquire the technology and expertise to become electronic doorways to information sources for their users.

Library systems must educate their member libraries about the benefits to users of becoming electronic doorway libraries and the detrimental impact on citizens who do not have access to electronic information. Further, systems must provide assistance to those libraries that take up the challenge of meeting the electronic information needs of their current and future users. (Recommendations A-1, C-1, C-2)

Libraries must be strongly encouraged to provide electronic doorway services to users as a means of offering the highest possible quality access to information. As the people of New York State become increasingly aware of their electronic living and working environments, they will perceive electronic doorway libraries as the most relevant sources for needed information. Support for libraries by local, regional, and State agencies, as well as the general public, will be strengthened by the provision of electronic doorway library services. (Recommendations A-1, A-9)

Systems and the New York State Library's Division of Library Development (DLD) must work together to educate local library boards of trustees, decision makers, and funding sources of the benefits of libraries serving people by becoming electronic doorway libraries. Decision makers and governing bodies must be committed to educating the general public about the benefits of electronic information services. Financial and service incentives should be used to help libraries improve information services to their communities. (Recommendations A-1, A-3, B-2, C-2, C-3, G-1)

D. Why Do People Need Electronic Doorway Library Services Beyond an Internet Connection?

Access to information and the most effective ways to obtain it are at the heart of electronic doorway library services. An Internet connection is not equivalent to an electronic doorway library. Electronic doorway library services extend beyond those that can be provided by an Internet connection.

While some individuals now use the Internet to conduct electronic mail and gain access to information resources, many others need a library to be able to take advantage of these electronic services. Electronic doorway library services also include the assistance of librarians — information specialists — who can help people refine their information questions, locate information, and use it. The role of staff in an electronic doorway library will become more important as people face a glut of unorganized, disparate, and unevaluated information. The librarian can provide organization for what might otherwise be chaos in gaining access to and using electronic resources. Even those who have their own access to the Internet may find the help of a librarian indispensable.

An electronic doorway library can fulfill people's information needs by integrating and using telecommunications to provide a full range of printed, graphic, and other resources. It leads people with disabilities to specialized resources in their community libraries. (Recommendation B-3)

II. STATEWIDE ELECTRONIC LIBRARY NETWORK

A. Virtual Network

Library Systems Toward the 21st Century describes the Statewide Library Network as having professional, electronic, economic, and political mechanisms and linkages for connectivity and resource sharing. The electronic component of the Statewide Library Network, hereafter called the Statewide Electronic Library Network (SELN) or just the Network, will permit databases located on hundreds of computers in the State to be accessed by all electronic doorway libraries.

The SELN is a virtual network which includes existing and future physical networks in New York State applicable for library purposes. The key concept underlying the SELN is interconnectivity among separate physical networks thus, in effect, resulting in one logical statewide network for libraries. (Recommendation A-3)

The primary networks that make up the SELN are NYSERNet, SUNYNet, and TNT. Within the past two years, connections have been established among all three of these networks to varying degrees. This connectivity permits increased electronic communication among libraries in the State. But as important as they are, network connections constitute only the beginning of the virtual network. The Network will develop in terms of the effectiveness of connectivity among existing networks and the expansion of connectivity to include new networks.

The SELN also provides network connections throughout the world via the Internet. NYSERNet is the NSFNet mid-level connection for Internet access in New York State, and SUNYNet and TNT are connected to the Internet through their gateways with NYSERNet.

B. Data Resources Available

Most publicly purchased information in electronic formats should be made available for use by all libraries and library users via the SELN. Public data resources should include, at a minimum, the electronic bibliographic records of all libraries, historical record repositories, and local governments in the State as well as all legislative and legal statutes, case laws, and regulations. Nonpublic information should also be accessible through the Network. This information should include indexes of all published periodicals, special indexes, electronic newspapers and journals, and commercial data resources such as Medline, BRS, Dialog, OCLC, Lexus, and Nexus. (Recommendations A-4, A-7, A-8, A-10, A-11, D-1, F-3)

C. Equal and Efficient Access

The SELN will assure maximum, upgradable access by all libraries in the State. Toll-free dial access to the SELN should be available to all library users regardless of geographic location. Standards are required to assure efficient use of the Network. (Recommendations A-5, A-6, E-1, E-2)

Electronic networks are the backbones of information provision. While telecommunications speeds of T1 or T3 are ideal, toll-free modem access will be sufficient in many cases. Given the changing nature of information and services and the downward spiral of costs, today's powerful personal computers and high-speed modems should be within the financial reach of most libraries in the State. (Recommendations A-2, A-3, A-5)

Enactment of the High Performance Computing Act of 1991 has given networking activities in the United States a focus through the authorization of the National Research and Education Network (NREN). The NREN will be the defining network infrastructure for educational institutions and libraries. NSFNet, a major network maintained by the National Science Foundation (NSF), is known as the interim NREN. NSFNet is a key component of the Internet with end-user delivery provided by

mid-level (regional) networks such as NYSERNet.

The Internet uses the protocol convention Transmission Control Protocol/Internet Protocol (TCP/IP). TCP/IP, which allows for connectivity with a wide variety of equipment, has been embraced by the current network community. Advanced protocols and standards, such as those developed according to the International Organization for Standardization/Open Systems Interconnect (ISO/OSI), have not yet been widely implemented, especially in the United States. (Recommendations A-3, A-4, D-3, E-1)

Important goals of the library community are to make resources and information on the SELN available to libraries and library users and to assure library participation in the NREN. Standards defining file content, information retrieval, and information sharing must be used to achieve interoperability, ubiquity, and information delivery. Other standards for content of full text records, electronic journals, and similar files are needed. (Recommendations A-4, A-7, A-8, A-10, E-1, E-2)

D. Human Resources and Navigational Aids

Skilled educators are needed to teach network administrators, network mediators, and end users how to use the Network effectively. Telephone/e-mail assistance hotlines must be developed, and teaching tools must be created and distributed. (Recommendations A-3, C-1, C-3)

Library systems have successfully provided professional development for librarians for several years. Systems should educate library staff so that they can access the SELN for the benefit of users and teach users how to access the Network themselves. Technical training for staff in the maintenance of network connections and education of users about Network protocols and content are greatly needed. (Recommendations A-2, C-3)

Given the increasing emphasis on telecommunications within and among libraries, permanent telecommunications expertise at DLD must be made available to the library community. The telecommunications expert will help library systems, individual libraries, and their communities evaluate telecommunications solutions for specific institutions and determine the most cost-effective and technically feasible methods of integrating libraries and systems into the SELN. (Recommendation C-4)

As is evident for anyone now attempting to locate and search resources on the Internet, more navigational tools are needed to simplify access. Because the development of such tools is challenging, time consuming, and costly, coordination is needed to avoid duplicative efforts. (Recommendations A-4, B-4)

E. Connections to Non-Library Resources

As noted in *A New Compact for Learning*,* it is vital for educational resources such as libraries to function as part of a greater community. In the case of the SELN, the library community must work in partnership with other groups involved in the creation of the electronic infrastructure. These groups include vendors of access to high speed telecommunications networks such as NYSERNet, local telephone companies, and other telecommunications carriers and providers. The library community must also position itself to represent library access issues within State government and the State telecommunications regulatory process. (Recommendations A-5, A-6, A-7, A-10, D-1, D-2)

Other partnerships should be pursued in support of the SELN, particularly with the business community and local governments, both of which will make extensive use of electronic information resources. DLD should work with the library community to identify potential partners and develop cooperative approaches that will facilitate effective use of the Network. (Recommendations A-7, A-10, D-2, F-4, F-5)

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* *A New Compact for Learning: Improving Public, Elementary, Middle, and Secondary Education Results in the 1990s*, The University of the State of New York, The State Education Department, March, 1991. This document "...sets forth in broad terms the context of relationships and responsibilities within which we seek to educate our children, particularly in the State's public elementary, middle, and secondary schools."

III. NETWORK INFORMATION CONTENT AND ACCESS

A. Challenges to Libraries in the Evolving Information Environment

With the proliferation of microcomputers and networks, the information environment is being radically transformed. The role of the librarian as a point of first contact and as a filter in the information seeking process is rapidly changing. There will be a reduced traditional role and an expanded new role in the electronic information environment. The skills of librarians make them natural and appropriate intermediaries between information seekers and the information they need. Librarians are well-qualified to select, organize, locate, and interpret information appropriate to their user communities.

As electronic doorways, libraries have a major responsibility for supporting access to information. The support of information access by an electronic doorway library will be driven by the changing information needs of that library's user community. Libraries should be encouraged to define their user communities in the broadest possible terms. Based on user needs, a library will select a suite of information resources and services appropriate to the community. Some resources and services will be provided by the library, and others will be available remotely via electronic means.

Electronic doorway libraries should strive to be a productive initial step for those seeking information regardless of format or location. Materials in their collections must be indexed electronically so that remote users can locate information elements pertinent to their needs. And they must provide access to materials external to the library via tools that are easy to use. An electronic doorway library is actually a virtual library, i.e., a library that uses electronic indexes at remote sites to gain access to resources located elsewhere. All electronic doorway libraries should stress equity of access. (Recommendation B-3)

B. Information Content

There are three types of information resources available on the SELN: information itself, information about information, and forums for information exchange.

Information includes traditional hard copy materials housed in libraries. These materials will continue to be important for the foreseeable future. Information also includes resources in electronic format, e.g., electronic journals, full text databases, digital sound, and images. Electronic resources may be stored locally or on a computer somewhere on the network. (Recommendation A-8)

Information about information refers to bibliographic access tools such as online catalogs, indexes, abstracts, and table of contents services. These tools improve access to information by providing pointers to or summarizing information resources. (Recommendation A-4)

Electronic forums permit communication among those with common interests on the network. Examples include listservs, Usenet sites, and interactive electronic bulletin boards. In addition to facilitating communication, these forums are powerful location tools. Such forums enable library staff to continuously seek improvement by learning from colleagues outside the immediate geographic locality. They also enable library users to exchange information with associates.

C. Information Access

People need to use the SELN to gain access to information. Access includes both information discovery and delivery.

Information discovery involves the use of finding tools to locate resources of interest to the user. At present, many library catalogs include only local library holdings. These holdings should be recorded in the MARC format at either the full or minimal level. Some catalogs also contain holdings of branch libraries or

other libraries within the institution or school district. (Recommendations A-4, E-1)

Library users will not usually find references in a catalog to remote resources such as those found in databases available on the Internet. Nor are remote resources easily located using current network navigational tools. As just one example, a menuing software such as Gopher lacks the standards that apply to bibliographic databases. Considerable work must be done to improve upon access to remote resources. Users may discover remote resources through the library, through an intermediary other than the library, or directly without the involvement of any intermediary. (Recommendation E-2)

Information delivery becomes important once the user locates a needed resource. Materials may be obtained by either surface or electronic delivery. Either type of delivery introduces the possibility of access to rather than ownership of resources as a means for a library to make information available to its users.

The American Library Association/ Reference and Adult Services Division/ Interlibrary Loan Committee is in the process of revising the 1980 National Interlibrary Loan code. The most recent draft states, "... interlibrary borrowing must now be considered a primary element of collection development for all libraries, not an ancillary option." To enable interlibrary loan to become an integral part of collection development would require surface and electronic delivery mechanisms which are both effective and efficient.

For surface delivery, the speed with which library materials are provided must be improved. Existing regional and local surface delivery systems should be linked into a statewide mechanism that is timely and convenient. Among other things, statewide protocols to promote equitable resource sharing patterns for both borrowing and lending institutions should be developed; the role of library systems in facilitating and processing interlibrary loan requests should be reviewed; the possibility and implications of patrons placing requests directly to holding institutions should be examined; and issues such as the drain on and compensation for net lenders should be considered. (Recommendations A-9, B-5)

Electronic delivery includes telefacsimile transmission, downloading, and/or using information on a remote database. This type of delivery adds a new dimension to the issue of ownership vs. access, i.e., the replacement of "just-in-case" ownership of resources with "just-in-time" access to (or "on-demand" delivery of) needed information. However, the "on-demand" philosophy may make it increasingly difficult to locate copies of certain expensive, rare, or esoteric materials. A statewide approach to cooperative collection development and "last copy" retention of electronic and specialized print resources should be considered. (Recommendations F-1, F-2, F-3)

The "on-demand" philosophy also makes legal and control issues more complicated than ever. Legal and control issues include such items as copyright and licensing agreements. Such agreements may make it difficult to obtain many electronic resources free-of-charge. For security or economic reasons, free access to resources may be limited to an identified body of users. Others may have to pay for access or may not be able to gain access at all. Additional examples of legal and control issues are the security of information resources and confidentiality of personal requests for information.

"On-demand" delivery will increasingly become a service option for libraries and will have an effect on both collection management and user service. Use of the services of document delivery vendors will permit funds previously spent on journal subscriptions to be reassigned for other electronic doorway library services. Electronic document delivery will not be directly available from vendors to users on a widespread basis in the near future. Libraries will serve as delivery intermediaries.

A combination of effective surface and electronic delivery will be required to provide optimal service to library users. Surface delivery will continue to be important particularly in making nonelectronic materials available to requestors. Electronic delivery will address the critical need for timeliness in providing materials to users. It must be recognized that there will be costs involved whether a library chooses to own an item or obtain it elsewhere.

Increased expectations of electronic doorway library users for physical access to library materials will place new demands on the State's resource sharing infrastructure. The need for physical access to materials in an organized, coordinated, integrated, equitable manner raises issues which require scrutiny beyond the scope of the Biennial Review Committee. (Recommendation B-5)

IV. RECOMMENDATIONS

A. Services and Funding

To become electronic doorway libraries and to implement the SELN, libraries and library systems will need to reevaluate services and, in some cases, reallocate resources from traditional, inventory-based services to dynamic information, transaction-based services. State and Federal funding programs should reflect any such paradigm shift in library services.

A-1 Library systems should amend their Plans of Service by 1995 to include specific plans for assisting all member libraries to provide electronic doorway library services.

A-2 Libraries, library systems, and DLD should work to increase participation in the SELN through a combination of substantial new funding (see A-3 below) and, in some cases, reallocation of resources in order to help implement the electronic doorway library concept.

A-3 Future legislation should include funding for telecommunications access, library automation, document delivery, development of professional expertise, and education in the effective use of networks. Specifically, DLD should propose that the Board of Regents request the Legislature to appropriate an additional $10 million annually to enable library systems to provide for the development and enhancement of electronic doorway libraries and associated services among their member libraries. These funds should be channeled through the Systems' Automation and RBDB State aid programs.

A-4 The conversion of previously catalogued library records to machine readable format continues to be an important priority for the ongoing development of electronic doorway libraries. Through a rational decision-making process, systems/regions may continue to use available State and Federal funds for retrospective conversion projects that incorporate system/regional cooperation and priorities as well as resource sharing potential among all types of libraries. An individual library accepting such funds is obligated, using local funds, to contribute bibliographic records in MARC format of all materials acquired after its initial retrospective conversion project year.

A-5 The State Education Department (SED) should strive to establish a statewide telecommunications policy which will have as a goal the extension of the SELN to all libraries and schools.

A-6 As an interim measure until A-5 is implemented, SED should address the need to subsidize access by libraries to the SELN and the Internet by 1.) ensuring that every library should have access without the need to pay toll charges; and 2.) working with the regulatory agencies to provide preferential telecommunications rates for the library and education communities.

A-7 SUNY, CUNY, and SED should seek jointly to negotiate State contracts with electronic information vendors which will benefit the statewide library community.

A-8 DLD and the New York State Research Library should exercise leadership by developing and providing access to a variety of publications in electronic format.

A-9 DLD must implement, in consultation with libraries and library systems, data collection mechanisms for measuring the outcomes of electronic doorway libraries.

A-10 DLD, the New York State Research Library, libraries, and library systems should work with the State Archives and Records Administration (SARA) and official government records management officers to investigate opportunities to broker the data resources and files of local, State, and Federal agencies on the SELN. These

would include Federal census data, licensing practices, and local property records.

A-11 State policy should encourage local and State government agencies to make their information available in libraries, including using libraries as primary kiosk sites.

B. Equity and Ease of Access

Every library, regardless of its size, type, location, or the economic condition of its community, should be given the opportunity to become an electronic doorway library. All persons, regardless of the socioeconomic or geopolitical conditions of their communities, should be given the opportunity to use an electronic doorway library.

B-1 Every library in the State should participate in the SELN via the electronic doorway library program. Ultimately, every library should have access to at least one electronic mailbox, and have file transfer capability and the ability to telecommunicate with all resources available through the SELN.

B-2 Library systems and DLD should provide regular information programs to notify the public of the locations and services of electronic doorway libraries.

B-3 Electronic doorway libraries should strive to integrate access to all appropriate information resources whether in hard copy or electronic format and whether available locally or on the SELN.

B-4 DLD and library systems should work with the library, academic, school, and network communities to encourage the creation of SELN gateways and navigational aids designed for users of all ages and abilities.

B-5 In an electronic networked environment, rapid delivery is essential. DLD should appoint a standing statewide interlibrary loan committee, with representation from all types of libraries and each of the nine library regions in the State, to examine the impact of the electronic doorway library on resource sharing. The committee should address the information access concerns discussed in this document and, by 1995, present to the field a set of specific policy recommendations for improving statewide access to library materials.

C. Profession and Education

Librarians must coordinate the linkage of identified user needs and the technological marketplace. This is best addressed by a combination of increased education and expertise.

C-1 Library systems should assist member libraries to become electronic doorway libraries by raising awareness and educating librarians and policy makers, and by providing technical support, access, telecommunications expertise, and consulting services.

C-2 Library systems should develop a requisite electronic doorway library education program to make library staff and decision makers aware of the role libraries will play in providing electronic information services.

C-3 DLD and library systems should provide ongoing professional development and end-user education in the delivery of electronic information services.

C-4 DLD should provide permanent telecommunications expertise to assist library systems in evaluating and recommending telecommunications solutions for particular institutions.

D. Partnerships

Libraries must form partnerships to become linked with other sectors of the community at large. By forming partnerships, libraries become stronger institutions and are, therefore, better able to serve their users.

D-1 DLD, library systems, and the library community should identify both public and private partners in building and using the SELN. Library systems and electronic doorway libraries should develop coalitions with other information providers, such as archival repositories, local governments, community organizations, and private corporations, in order to build or develop linkages to information databases. Already some local governments, for example, have recognized that libraries can play an important role in disseminating information to constituents.

D-2 DLD should ensure representation on State government task forces and committees charged with examining and making

recommendations about statewide telecommunications policies and structure. These groups include the New York State Telecommunications Exchange and the State Education Department Telecommunications Work Group. The purpose of representation on these and other groups would be to identify and advocate the library community's growing role, contributions, needs, and concerns in the expanding network environment.

D-3 DLD should ensure representation in national organizations which focus on NREN policy and implementation, such as the ARL/CAUSE/EDUCOM Coalition for Networked Information (CNI) and the Library of Congress Network Advisory Committee (NAC).

E. Standards and Protocols

Standards and protocols are required for libraries to be able to use the SELN as effectively as possible. The goal is to achieve seamless communication among all computer systems.

E-1 Libraries using the SELN should adhere to existing standards, such as MARC, information retrieval, common command language, and interlibrary loan, and they should also adhere to the Internet protocols.

E-2 As standards emerge for electronic mail, directories, business transactions, and electronic journals, libraries using the SELN should adopt them.

F. Collection Management

The increasing electronic accessibility of information and materials provides libraries with more opportunity to manage their collections. Access to electronic information also allows for the stretching of limited acquisitions budgets.

F-1 The distinction between ownership of and access to resources should be considered in the development of collection policies which support library services.

F-2 Maintenance of effort requirements for State collection development programs should be reviewed to take into account the impact of document delivery.

F-3 Electronic information often becomes inaccessible as technical formats change. DLD and library systems should coordinate preservation efforts to maintain electronic information in a usable format.

F-4 DLD should communicate and coordinate with SARA in addressing issues relating to retention in libraries of electronic information that has been created and maintained by local and State governments.

F-5 The New York State Conservation and Preservation Program should encourage development of model grant projects to address the issues involved with the retention of electronic information in libraries, historical record repositories, local government offices, historical societies, and museums.

G. General

Certain recommendations are basic to progress in all of the preceding categories. A complete set of recommendations requires a general category as well.

G-1 By no later than 1994, the State Librarian should convene a task force, broadly representative of school and library decision makers, to address the unique challenges school libraries and school library systems face in becoming an integral part of the SELN.

G-2 DLD should convene a committee in two years to review the administrative and technological progress that has been made based upon this edition of the Statewide Library Automation Plan and to recommend updating and revision of the plan.

APPENDIX A

ELECTRONIC DOORWAY LIBRARY IMPLEMENTATION GUIDELINES

The Electronic Doorway Library: Meeting the Information Needs of the People of New York State builds upon the philosophical and conceptual side of *Technology & Access: The Electronic Doorway Library*, Recommendation (A2), which is the genesis of the "Electronic Doorway Library" concept. It does this by making 14 assumptions and 32 recommendations. The implementation guidelines, as stated in this appendix, address the mechanical and procedural issues of how actually to establish libraries as electronic doorway libraries and how to keep abreast of the progress being made toward achieving the goal that all libraries in the State will reach that status. The guidelines state why a library should become an electronic doorway library; expand upon the Electronic Doorway Library definition, included in *Library Systems Toward the 21st Century*; and cover procedures for designating libraries as electronic doorway libraries and for keeping an accurate record of the libraries so designated.

A. Why Should a Library Become an Electronic Doorway Library?

Networking is increasingly becoming a part of the fabric of society. Today, most libraries are print- and building-centered depositories that largely, or perhaps even exclusively, use traditional methods to access information. In an increasingly networked society, these libraries will want to meet more fully the electronic information needs of their communities. In order to meet those needs, libraries will acquire the technology and expertise to become electronic doorways to information sources for their users.

B. Electronic Doorway Library Definition

The Electronic Doorway Library definition is brief, so it may be subject to different interpretations. As libraries begin to be designated as electronic doorway libraries, further explanation of the definition is, therefore, needed. In the remainder of this section, the *definition is stated in regular type and additional explanatory information is provided in bold type within the framework of the definition*:

Introduction. A library becomes an electronic doorway library when it uses technology to enhance information retrieval and resource sharing through the Statewide Library Network, thereby providing the State's residents access to the information resources they need. The electronic doorway library concept describes the two-way flow of requests and information, into and out of a library, by electronic means. This concept may apply to any library in the State, regardless of size, type, or location.

Explanation: Any library which enhances information retrieval and resource sharing for its users based upon two-way electronic capability may qualify as an electronic doorway library, assuming it meets certain other requirements as listed below.

Basic Requirements. In order to be considered an electronic doorway, the library will meet these basic requirements. The library will:

(1) Have converted or be actively converting its catalog records into machine-readable form;

Explanation: A library qualifies under this criterion if it has done some retrospective conversion, has a plan to complete the conversion of its retrospective records, and is systematically converting its current records. See (4) below for related information.

(2) Allow for electronic access either online or offline to its holdings from both inside and outside the library;

	ONLINE CATALOG	OFFLINE CATALOG
FROM INSIDE LIBRARY	(1) OPAC and/or UNION CATALOG — Onsite, but may also include dial and/or online access to offsite location (e.g., system headquarters)	(3) CD-ROM — Onsite, but may also include dial and/or online access to offsite location (e.g., system headquarters)
FROM OUTSIDE LIBRARY	(2) OPAC and/or UNION CATALOG — Onsite or offsite with dial and/or Internet access from any library in the State	(4) CD-ROM — Onsite or offsite with dial and/or Internet access from any library in the State

Explanation: As described in the preceding matrix, a library should not only provide access to its holdings from inside the library but also a statewide access route to its holdings from outside the library. A library's holdings should be accessible from inside the library by its users in an online catalog, either an OPAC or online union catalog (on a mainframe, minicomputer, or microcomputer), or in an offline catalog (CD-ROM only). Outside access to the library's holdings in one or more of these types of catalogs should be available to other libraries statewide via dial and/or Internet access in order to help achieve the goal, originally stated in *Libraries & Technology* and *Technology & Access* and continued in this edition of the Statewide Library Automation Plan, of providing access to all information resources in the State from any part of the State. The library's holdings should be accessible to its users and to other libraries statewide without a fee.

The following are examples of combinations from the matrix which enable libraries to meet this requirement if their holdings are accessible to their users and to other libraries statewide without a fee:

1 and 4 — Libraries that provide access to holdings from inside the library in an OPAC and/or online system/regional union catalog and from outside the library in an offline (CD-ROM) system/regional union catalog

1 and 2 — Libraries that provide access to holdings from inside and outside the library in an OPAC and/or online system/regional union catalog

3 and 4 — Libraries that provide access to holdings from inside and outside the library in an offline (CD-ROM) system/regional union catalog

3 and 2 — Libraries that provide access to holdings from inside the library in an offline (CD-ROM) system/regional union catalog and from outside the library in an OPAC and/or online system/regional union catalog

Note: Some libraries may offer combinations of three or even all four of the above.

(3) Provide electronic access to at least one other database located outside of the library;

Explanation: A library meets this requirement if it provides electronic access to one or more databases physically external to the library, including dial and/or Internet access to a database(s) on CD-ROM. The database(s) may be a library catalog(s), another database(s) with free public access, and/or a commercial database(s). Neither the union catalog of the region nor system in which the library is located is an acceptable outside database. However, the union catalog of another region or system is an acceptable database if there is dial and/or Internet access to that catalog.

(4) Adhere to the database development guidelines established in *Libraries & Technology* and *Technology & Access*;

Explanation: The USMARC format must be used for the entry of records into a machine-readable database at either the full or minimal national level as specified in *USMARC Format for Bibliographic Data.* For retrospective records, at least the minimal level is required. (It is recommended that subject headings also be included for minimal level records although this is not a national minimal level requirement.) For current records, the full level is recommended. A library should also maintain all parts of its database. See (1) above for related information.

(5) Be equipped with a microcomputer or terminal, modem, and telephone line;

Explanation: This equipment is necessary to support the services in numbers (2) and (3) above.

(6) Meet the basic standards for its type of library;

Explanation: A library should comply with all standards, regulations, and the like that pertain to its type of library including, but not limited to, the following:

Academic libraries — Middle States Association of Colleges and Universities. *Characteristics of Excellence.*

Public libraries — The State Education Department. *Regulations of the Commissioner of Education.* 8NYCRR. Sections 90.2 and 90.8.

School libraries — The State Education Department. *Regulations of the Commissioner of Education.* 8NYCRR. Sections 91.1 and 91.2.

Special libraries — Special Libraries Association. *Objectives for Special Libraries.*

(7) Be a member of a library system;

Explanation: A library must belong to a public library system, reference and research library resources system, or school library system.

(8) Have a board or administration, director, and staff committed to using technology to provide quality library service;

Explanation: Commitment is met by being willing to provide the maximum level of electronic services that available resources permit. This commitment will be observable through plan of service, budget, and/or professional development.

(9) Participate in State-supported automation and resource sharing programs which are currently operating and being developed;

Explanation: A library should participate in State-supported automation and resource sharing programs by contributing its records and holdings to the system and regional union catalog (if applicable) as well as to a union list of serials, by maintaining these records and holdings, and by sharing resources with other libraries in the system, region, and State.

(10) Work with its library system in making full use of present and future technologies.

Explanation: A library should work with its library system to use present and future technologies by having staff attend continuing education activities sponsored or endorsed by the system, assist in the preparation of the system plan of service, serve on or provide input to the system/regional automation committee, contribute to the development of the system/regional automation plan, and/or participate in a system/regional automation project(s).

Beyond-Basic Requirements. Electronic doorway libraries may also have an integrated library system based on a micro-, mini-, or mainframe computer with software and a means of electronic communication. Other service options may include one or more methods of electronic delivery; enhanced access to its holdings; access either online or offline to a wide variety of information resources including library catalogs, numerical databases, full-text documents, and images; connection to a high-speed telecommunications network(s); and the capability to share information resources based upon linkage standards. Some Electronic Doorway Libraries may make services available from home or workplace. As part of an evolutionary process, an Electronic Doorway Library should seek to utilize appropriate technologies both currently existing and yet to be developed.

Explanation: The interpretation of this section of the definition takes into account the dramatic increase of network accessibility within recent years and the critical importance of network access to library services in future years. Therefore, in order for a library to advance beyond the

basic level, it should provide access to the Internet. In addition, a library may provide one or more of the services suggested in this section of the definition, or it may offer other advanced electronic services that are not stated. Even though a library moves beyond the basic level, it should continually seek to improve and expand services which will eventually include technologies that do not presently exist.

Qualifying Libraries. All libraries that meet or exceed basic requirements will qualify as electronic doorway libraries. Although some electronic doorway libraries will provide considerably more than the basic requirements, all libraries so designated are expected to continue to provide the maximum level of electronic services that available resources permit. Qualified libraries should be formally designated as Electronic Doorway Libraries and display a unifying and recognizable symbol.

Explanation: A statewide logo will be available to a library through its system when it is initially designated as an electronic doorway library. A library which has been designated at the basic level does not have to be redesignated with a second logo when it moves beyond the basic level, although its system may choose to do so. Ongoing improvement of the electronic services of libraries that qualify at the basic level is expected as much as possible. This would involve not only advancing to the beyond-basic level but also expanding upon existing services and offering new services once at this level. Since the beyond-basic level is open-ended, the ultimate expression of a library's evolution at this level would involve pushing to the edges of available and potential electronic doorway library services.

C. Designating Libraries as Electronic Doorway Libraries

1. Each library system will be responsible for designating those member libraries that qualify as electronic doorway libraries based upon an application process.
2. A member library need apply only one time for each level, basic and beyond-basic, unless it does not qualify. Libraries which do not yet qualify are encouraged to reapply when ready.
3. To help assure consistent designation of libraries as electronic doorway libraries across the State, a common application form for each level should be used by member libraries of all systems (see Appendix B).
4. A statewide logo will be available through systems for member libraries that qualify as electronic doorway libraries.

D. Record Keeping

1. Since the goal is to enable all libraries in the State to become electronic doorway libraries, the fundamental first step is to find out which libraries already qualify. The libraries in the State that are already electronic doorway libraries will be determined as of April 1994. This will be done by having each system: a.) invite applications from member libraries using the common application form noted above; b.) determine which of the applicant libraries qualify and at what level; and c.) provide this information to Library Development which will compile the names and total number of basic and beyond-basic electronic doorway libraries statewide.
2. The names and number of basic and beyond-basic electronic doorway libraries in the State established in April 1994 will be updated yearly by the annual reports submitted by library systems. This process will begin with the 1994 annual reports. Library Development will compile a new list of names and the total number of basic and beyond-basic electronic doorway libraries statewide each year.

APPENDIX B

ELECTRONIC DOORWAY LIBRARY APPLICATION FORM

(BASIC LEVEL)

This application form is based upon the "Electronic Doorway Library Implementation Guidelines," and specifically the Electronic Doorway Library definition including additional explanatory information, as provided in Appendix A.

Library: _____ System: _____

District (if school library): _____ Signature: _____

BASIC LEVEL EDL	DOES YOUR LIBRARY HAVE:
1. Has converted or is actively converting its catalog records into machine-readable form.	1. Some retrospective records converted? ___Y ___N A plan to complete conversion of retrospective records? ___Y ___N Is it systematically converting current records? ___Y ___N
2. Allows for electronic access either online or offline to its holdings from both inside and outside the library.	2. Inside library: Access to holdings by your users in an OPAC? ___Y ___N; Online union catalog? ___Y ___N; CD-ROM catalog? ___Y ___N Outside library: Dial and/or Internet access to holdings in one of the above from any library in State? ___Y ___N Holdings accessible to your users and to other libraries statewide without a fee? ___Y ___N
3. Provides electronic access to at least one other database located outside of the library.	3. Access to a database(s) physically outside library other than own regional or system union catalog(s)? ___Y ___N
4. Adheres to the database development guidelines in *Libraries & Technology* and *Technology & Access*.	4. Commitment to use USMARC format and maintain database? ___Y ___N
5. Is equipped with a microcomputer or terminal, modem, and telephone line.	5. The required equipment? ___Y ___N
6. Meets the basic standards for its type of library (see EDL definition noted in box above).	6. Compliance with standards, regulations, etc. for your type of library? ___Y ___N
7. Is a member of a library system.	7. Membership in a library system? ___Y ___N
8. Has a board or administration, director, and staff committed to using technology to provide quality library service.	8. A plan of service, budget, and/or professional development which reflects this commitment? ___Y ___N
9. Participates in State-supported automation and resource sharing programs which are currently operating and being developed.	9. An established mechanism for: (a) records and holdings contribution to system/regional union catalog (if applicable) and union list of serials, (b) maintenance of records and holdings, and (c) sharing of resources? ___Y ___N
10. Works with its library system in making full use of present and future technologies.	10. Participation in system automation activities, e.g., continuing education? ___Y ___N

ELECTRONIC DOORWAY LIBRARY APPLICATION FORM

(BEYOND-BASIC LEVEL)

This application form is based upon the "Electronic Doorway Library Implementation Guidelines," and specifically the Electronic Doorway Library definition including additional explanatory information, as provided in Appendix A.

Library: _____ System: _____

District (if school library): _____ Signature: _____

BEYOND-BASIC LEVEL EDL

Has an Internet connection? Y N

Examples of additional beyond-basic services:

- Provide access to the library's holdings for users in other libraries statewide and for users from homes, workplaces, and/or other locations without a fee? Y N
- Use the services of a document delivery vendor? Y N
- Offer information retrieval capability on the library's integrated system based upon ANSI/NISO Standard Z39.50? Y N
- Use a navigational tool such as Gopher, WAIS, Archie, Veronica, and/or World Wide Web? Y N
- Provide access to a community network? Y N
- Other advanced services offered by library? Y N
  (Please describe at least one.)

APPENDIX C

GLOSSARY

The following glossary includes definitions for technical terminology except standards and protocols which are defined in Appendix D.

Archie — A system for locating files by anonymous FTP (File Transfer Protocol) at several hundred Internet sites. Archie also includes a database of descriptions of over 3,500 public domain software packages, data sets, and information documents.

Coalition for Networked Information — A collaborative effort by the Association of Research Libraries (ARL), CAUSE, and EDUCOM to promote the creation of and access to information resources in networked environments.

Electronic Bulletin Board — An electronic forum for sharing information.

Electronic Doorway Library (EDL) — A library that helps to meet the information needs of its users by employing computer and telecommunications technology to enhance information retrieval and resource sharing. The Electronic Doorway Library concept describes the two-way flow of requests and information, into and out of a library, by electronic means.

Electronic Mail (E-mail) — An online messaging service between computer users.

FTP (File Transfer Protocol) — The procedures by which files are moved from one computer to another. Access to files without an account for the computer on which they reside is known as anonymous FTP. FTP is included in the TCP/IP protocol suite.

Gateway — A computer that transfers data between incompatible networks. It adapts the protocols and conventions of one network to those of another.

Gopher — Navigational software, available for a variety of computers, which supports the organization of and connection to remote resources on the Internet.

Hypermedia — Using software to organize databases in a variety of media (e.g., text, graphics, sound, full motion video) in the way described in the definition of hypertext.

Hypertext — Software which organizes databases for searching purposes by linking relevant data rather than establishing a fixed sequence of text.

Integrated Library System — An online computer system that combines various library operations (e.g., circulation, public access catalog, acquisitions) into one system. These operations are based upon a common database and set of commands.

Internet — An international network of networks connected by TCP/IP protocols. The Internet may be used for file transfer, remote login, electronic mail, news, and other services.

ISO/OSI — An internationally agreed upon set of standards for computer connection as defined by the International Organization for Standardization and the Open Systems Interconnect. ISO/OSI is not yet widely used, especially in the United States.

Listserv — A service which gives access to a specific set of files at one location to participants on its mailing list. This service provides distributed messages which form electronic conferences. It also allows for the archiving of files and messages which can be searched and retrieved.

Local Area Network (LAN) — A network which operates within a limited geographic area, typically within a building or group of buildings.

Mail Reflector — A special electronic mail address that automatically forwards any message sent to it to a designated set of other mail addresses.

Mbps — Megabits (millions of bits) per second which is one designation of the speed at

which data is transmitted electronically, e.g., 10mbps or 10 mega (million) bits per second.

Modem — A device that transmits computer data to and receives it from a transmission line. There must be two modems — one at either end of a transmission line — for computers to be able to communicate.

Navigational Tools (Aids) — Software which provides user-friendly access to resources found on computers connected to the Internet. Examples of navigational tools include Gopher, WAIS, Archie, Veronica, and World Wide Web.

NREN — The National Research and Education Network which was established in legislation in 1991. The NREN will upgrade and expand existing Federal networks and may combine them into a single high-speed network.

NSFNet — A major network on the Internet which was established by the National Science Foundation. The network has nodes at six supercomputer sites in the United States, one of which is in New York State at Cornell University.

NYSERNet — The New York State Education and Research Network which is the NSFNet mid-level network for New York State. NYSERNet provides one means of access to the Internet in New York State.

Protocol — A set of rules defining the transmission and receipt of information over a network(s).

RBDB Program — The Regional Bibliographic Data Bases and Interlibrary Resources Sharing Program which was established in legislation in 1984. The New York State Library's Division of Library Development (DLD) provides oversight for this program even though it is, in large part, regionally administered.

Statewide Electronic Library Network (SELN) The Statewide Electronic Library Network (SELN) is the electronic component of the Statewide Library Network. It is a virtual network which includes existing and future physical networks in New York State applicable for library purposes. The key concept underlying the SELN is interconnectivity among separate physical networks thus, in effect, resulting in one logical statewide network for libraries.

SUNYNet — A telecommunications network that connects most of the 64 institutions included in the State University of New York (SUNY).

T-1 — A communications service that transmits data at 1.544 mbps.

T-3 — A communications service that transmits data at 45 mbps.

TCP/IP — The Transmission Control Protocol/Internet Protocol which is a suite of protocols that has become the defacto standard for connecting networks and computers on the Internet.

Telnet — The procedures used to log in (or gain access) to remote computers. Telnet is part of the TCP/IP protocol suite.

TNT (Technology Network Ties) — A program established in the New York State Education Department legislation of 1985. The goal of the program is to integrate computer hardware, software, and communications technologies in a network linking school districts, Boards of Cooperative Educational Services (BOCES), Regional Information Centers (RICs), libraries, and other education agencies with the State Education Department.

Usenet — A service used to exchange news (information) on a specific group of computers. Most Usenet communication takes place over the Internet.

Veronica — A service that maintains an index of titles located at Gopher sites and provides keyword searches of those titles. A Veronica search typically covers hundreds of Gopher sites on the Internet without requiring a search of each site.

Virtual Library — A library that uses electronic indexes at remote sites to gain access to resources located elsewhere.

WAIS (Wide Area Information Server) — Software which permits disparate computers to access databases over the Internet. WAIS is a tool for retrieval of textual information. It utilizes relevant document recall which approximates the library reference interview.

World Wide Web — A system for finding and accessing resources on the Internet. Hypertext links are used to access and navigate World Wide Web documents.

APPENDIX D

STANDARDS AND PROTOCOLS

The Statewide Library Automation Plan recommends that libraries using the Statewide Electronic Library Network (SELN) adhere to appropriate national and international standards and to the Internet protocols. The Internet and other networking environments are extremely dynamic. It is beyond the scope of this plan to attempt to predict what the standards will be in future years. Standards like ISO/OSI (International Organization for Standardization/Open Systems Interconnect) have not yet been widely implemented, especially in the United States. The library community is largely dependent on the national networking community to develop and implement the technologies which will become the standards of tomorrow. Appropriate standards and protocols recommended at this time include:

Common Command Language (ANSI/NISO Z39.58) — This standard specifies a set of commands which may be used by all automated library systems to access databases on those systems or other systems which also adhere to this standard.

Directory Service (CCITT X.500) — Network directories including both white and yellow pages (similar to telephone directories).

Electronic Data Interchange or EDI (ANSI/ASC X.12) — Business transaction applications for orders, claims, receipts, etc.

Electronic Mail or E-mail (CCITT X.400) — The official name of this standard is Message Handling Systems of which electronic mail is one part.

Information Retrieval (ANSI/NISO Z39.50) — A standard for communication between and among computer systems for retrieval of bibliographic records independent of the type of system on which they are stored. Retrieval of records on a different system than that operated by the library may take place using the commands of the local system.

Interlibrary Loan Data Elements (ANSI/NISO Z39.63) — Information needed for interlibrary lending and borrowing of materials.

Interlibrary Loan Transactions (ISO 10160-10161) — Requests to lenders, responses from borrowers, etc. to facilitate interlibrary loan between different sites and systems.

MARC or USMARC (ANSI/NISO Z39.2) — The official name of this standard is Bibliographic Information Interchange. The standard deals with communication formats for bibliographic data. It specifically defines structure and content of bibliographic and authority records and local library holdings.

Standard Generalized Markup Language or SGML (ISO 8879) — Potential document format for electronic journals or similar full text products.

Transmission Control Protocol/Internet Protocol or TCP/IP — The suite of protocols which has become the defacto standard for connecting networks and computers on the Internet.

APPENDIX E

THE COMMITTEE

CHAIR OF COMMITTEE:

September 1992-July 1993
LINDA E. HEINEMANN
Assistant Director
Four County Library System

July 1993-November 1993
DR. ELEANOR CARTER
Dean of Learning Resources
SUNY Cobleskill

DAVID W. CARMICHEAL
Records Manager and Archivist
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GLYN EVANS
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DENISE A. GAROFALO
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JOHN J. HAMMOND
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North Country Reference and Research Resources Council

CAROL KROLL
Director
Nassau School Library System

JOHN KUHN
Systems Coordinator
Onondaga County Public Library

LIZ LANE
Principal Librarian
New York State Library
Research Library

CYNTHIA LaPIER
Director
Schuyler-Chemung-Tioga BOCES School Library System

RODNEY LEE
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Roosevelt Public Library

MARGARET W. LYNCH
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